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# FIVE OBJECT-BASED SOUND COMPOSITIONS

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*Thesis submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy  
School of Music, Humanities and Media  
University of Huddersfield*

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“the measure of a work of art is whether one can sense in it the presence of the artist’s body. If so, then it is a success, and if not, it’s a failure.”— Pierre Hébert

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## ABSTRACT

This text is a commentary on the nature of my principle artistic preoccupations over a period of research-creation spanning 2011 and 2013. The works discussed cover, each in their own way, various approaches to sound composition linked to physical objects. In effect, the object proves to be a fundamental element at the heart of discourse, which, though anchored in sound, is often multi-disciplinary. The object here is thus taken apart in its affective, conceptual, performative, visual, as well as sonic properties.

The first part of this text illustrates the nature of the relationship between the physical object and the works submitted for this doctoral thesis. It focuses on the journey of the works: from their genesis in the artist's collections of objects to their life on stage where the objects are used as visual elements in a performative context.

The second part is dedicated to the conceptual and aesthetic content of the works, from which flow the principal elements of their discourse. Here, the relationships between the work, the concept and the sonic material are established, which together make up their aesthetic.

**Keywords: composition, sound/sonic, object, material, performance, concept, electroacoustic, electronic.**

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## **INTRODUCTION**

### **About this text**

This commentary addresses the main concerns that emerged during my doctoral research at the University of Huddersfield. It acts as a complement to a portfolio of five sound works that are intrinsically linked to physical objects. These works take different forms: fixed media, installation, performance and soundtrack.

The dominant preoccupation of this research is to explore different avenues leading to a materialization of sound composition. The sound itself being an impalpable and invisible medium, various methods have been put forward to establish a composition approach that is embodied through the physical object. In this context, the artistic work reaches beyond sound towards a multidisciplinary framework, which forms the other prime concern studied here. I will therefore present the reader with a myriad of references that sometimes touch on philosophy, sociology, art history, technology, visual arts and theater. However, it does not constitute an attempt to write a dissertation with great musicological bearing. This multiplicity of references reflects the



multidisciplinary thought led to the works discussed. This multiplicity of references reflects the multidisciplinary aesthetic research that led to the works discussed, pointing towards a better understanding of the ideas that fueled this artistic work. It is important to note that there is but a limited discussion of the musical form per se, in favour of an analysis of the work in a broader sense, within in a multidisciplinary perspective. The form of the work is addressed rather it in its relationship to the physical object, the choice of materials, its integration of scenic elements, its staging, as well as its lighting. These concerns were also the subject of an article published in the journal *Circuit*, published by the Université de Montreal (Bernier, 2013a), which, within a more condensed framework, laid the foundations for this dissertation.

The main theme—the relationship between the physical object and the works—is explored at its elementary level, that is to say, as an object in itself and not in reference to the theory of sound objects elaborated by Pierre Schaeffer (1966). The lack of references to Schaeffer's ideas might indeed seem unusual for the discerning reader, but it is a conscious omission which, in my opinion, avoids confusing the reader in a series of definitions that might weigh the simple object down with Schaeffer's phenomenological considerations.

This document was written in a spirit of openness providing a series of aesthetic and formal analytic elements leading to a better understanding of the works that forges this research.

## **Content**

The document is divided in two parts. The first portrays the principal topic of this doctoral research: the relationship between the compositions and the physical object (*Objects and works*). There is then a depiction of the object's staging (*Objects and performances*), that leads to a discussion of the visual aspect of the work (*Objects and vision*). The second part is devoted to aesthetic issues, highlighting the main elements that make up the discourse. First, the importance of the conceptual aspect at the heart of the creative process is established (*Conceptuality*). While presenting artists with related aesthetic materials, the materials used repeatedly and that form the aesthetic of works are then addressed (*Artificiality, Physicality, Impurity*).

PART I

OBJECT, PERFORMANCE, VISION

## **1. Objects and works**

This section establishes the dominant relationship between objects and each work covered in this text.

The discussion revolves around the primary motivations leading to work based on objects: an attachment to physical matter; the narrative and symbolic properties of objects; the desire to materialize an invisible art form. This relationship is initially taken up in a general discussion on the subject and then further examined relative to every work submitted. These projects each cover the relationship to the object in their own way: the object is recorded, amplified, mechanized, silent, or even absent.

### **1.1. On the relationship to the object**

First and foremost, even before the sound material, it is the physical material that is the center of my compositional approach: the material that I can touch, feel, look at; that can scratch me, scald me, engulf me, injure me, stroke me, that I can interact with, throw, knock, caress, manipulate. According to ethnomusicologist Lucie Rault, we can trace instruments made from found objects back to primitive civilizations<sup>1</sup> (Rault, 2000), which firmly anchors the practice in the history of music. In his book *Le système*

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<sup>1</sup> “Early musical instruments were made from “found objects” such a shells and plant parts” (Rault, 2000, p. 9)

*des objets*<sup>2</sup> (The System of Objects), sociologist Jean Baudrillard puts forward that “man is bound to the objects around him by the same visceral intimacy that binds him to the organs of his own body”<sup>3</sup> (1968, p. 20). Thus, even if the goal is to compose sound, it is important to me to cultivate that intimacy with the physical world and the objects that surround us, because they give meaning to my life and my worldview. The foundations of the works discussed here flow directly from this relationship to the object.

Therefore, the trigger for one of my art projects is only very rarely the music itself, since to imagine a project, I need to connect to the visible world and the objects themselves. Musicologist and philosopher Theodor W. Adorno wrote: “music is antithetical to the definiteness of material things” (Adorno & Eisler, 2005, p. 21). Contrary to this statement, my work on the sound is intrinsically linked to physical material, weaving together, in its use of the object, hearing, thinking and seeing.

My interest in this close relationship with the object probably originates in my past as a drummer, in which the sense of touch is crucial. When the computer became my main tool as a composer, this sensual need quickly resurfaced. Bill Brown, an American researcher dedicated to the cultural history of the object, points to what I miss when working on the computer: “Something warm, then, that relieves us from the chill of dogged ideation, something concrete that relieves us from unnecessary abstraction” (Brown, 2004a, p. 1). This feeling is obviously not uniquely the result of

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2 This essay by Jean Baudrillard is one of the texts that was of greatest interest to me because it is a text dealing directly – although within a non-musical perspective – with the subject of my research on the relationship with the object.

3 “l’homme est lié alors aux objets ambiants par la même intimité viscérale (toutes proportions gardées) qu’aux organes de son propre corps” (Translation: T. Hron)

the advent of digital technologies, as the composer Frederic Rzewski testifies in a comment issued in 1969, long before digital proliferation:

Now that machines have become such a dominant part of our environment, we are beginning to become aware of the need for rediscovering our bodies, which have become atrophied by dependence on machines and from which machines have alienated us. Our music has to be a demonstration of something simple, physical, universal, and liberating. Machines, electronics, and fancy technology get in the way of this demonstration. (Rzewski, Frederic in Cox, 2002, p. 43)

The object allows me to thwart the primacy of the computer in my work. Indeed, the computer as an object seems uninteresting to me, being a functional object with little of the evocative power that I find in other objects. Indeed, in its reference to the material world around us, the object is involved in the creation of meaning, which weaves a multiplicity of narrative threads into the heart of the compositions. For example, the story linking the object to the artist is metaphorically embedded in the object. The past story of the object that the artist enjoys imagining as well as the future story in the work being created also reside within it. This work—and this object—is then perceived by audience members who, in turn, can reinvent the path that led to them. The multidisciplinary artist Susan Hiller explains the multi-layered signification told by the object:

If you think about the narrative that collections or assemblages of things make, the interesting thing is that there are always at least two possible stories: one is the story that the narrator, in this case the artist, think she's telling - the story-teller's story - and the other is the story that the listener is understanding, or hearing, or imagining on the basis of the same objects. And there would be always at least these two versions of whatever story was being told. (Hiller, 2006, p. 42)

For example, in the sound performance *frequencies (a)* (2012a), I use the tuning fork for its power to evoke a musician's moment of tuning an instrument, a spiritual person's meditation practice, or even an acoustician's scientific experimentation. The object might also not bring anything up for viewers, but the work nonetheless unfolds before them to create a new narrative thread.

In this text, we will thus consider how my work is rooted in the relationship to an object that is used for its power to evoke the world that surrounds us as well as to trigger the basic need to play, touch, to see and feel. The following sections show how each of the works are related, each in their own way, to the object.

## **1.2. The recorded object: *Dans le ventre de la machine***

*Dans le ventre de la machine* (In the belly of the machine) (2011a) addresses the object in its invisibility since it deals with a work that is fixed on a medium, without a visual or physical component when presented to the public. However, even in this approach within fixed media, the material object remains the catalyst of the whole process of composition.

The object considered here is an invented machine, custom-made by the carpenter Alexandre Landry in 2008. The instrument that originally served for the performance "boîte." (box.) (2008) was subsequently reused in the show *La chambre des machines* (The engine room), (2010) created in collaboration with artist Martin Messier.

After several years of often using this invented machine in a performance situation, I

felt a need to rediscover it in a different way, to enter its sonic intimacy. Within the performance practice, the relationship with the machine is situated in the body and gesture rather than in listening. The recording and methodical relistening of the audible mechanisms produced by the machine lead to a very different work from the one done in real time. Editing techniques and mixing give access to gestures impossible to achieve by bodily actions. Unlike the “*boîte*,” and *La chambre des machines* performances, this fixed media work offers us a kind of writing that is far more precise in its articulation. Through repeated listening to recorded sounds, the material was rediscovered and reworked from a new angle.

Although it is not the aim of this text to discuss Pierre Schaeffer’s theory of the sound object<sup>4</sup>, it would be remiss not to mention the founder of *musique concrète*, since *Dans le ventre de la machine* rests, as we have just seen, on the principle of reduced listening. This quotation from Schaeffer offers a description of reduced listening while clarifying the distinction between the Schaefferian sound object and the physical object—or sounding body when this physical object is used as a sound source:

The sound object must be distinguished from sounding body or the device that produces it, just as the musical object differs from the written symbol that designates it: both are objects of perception, more exactly objects of listening, of a “reduced” listening, that is, detached from references to the sound’s source (the sound as indicator/cue) or its meaning (the sound as sign). (Schaeffer, 1973, p. 36)

Thus, a machine formerly used as a musical instrument in performance later found itself arranged in a series of sound objects utilized as compositional material for the

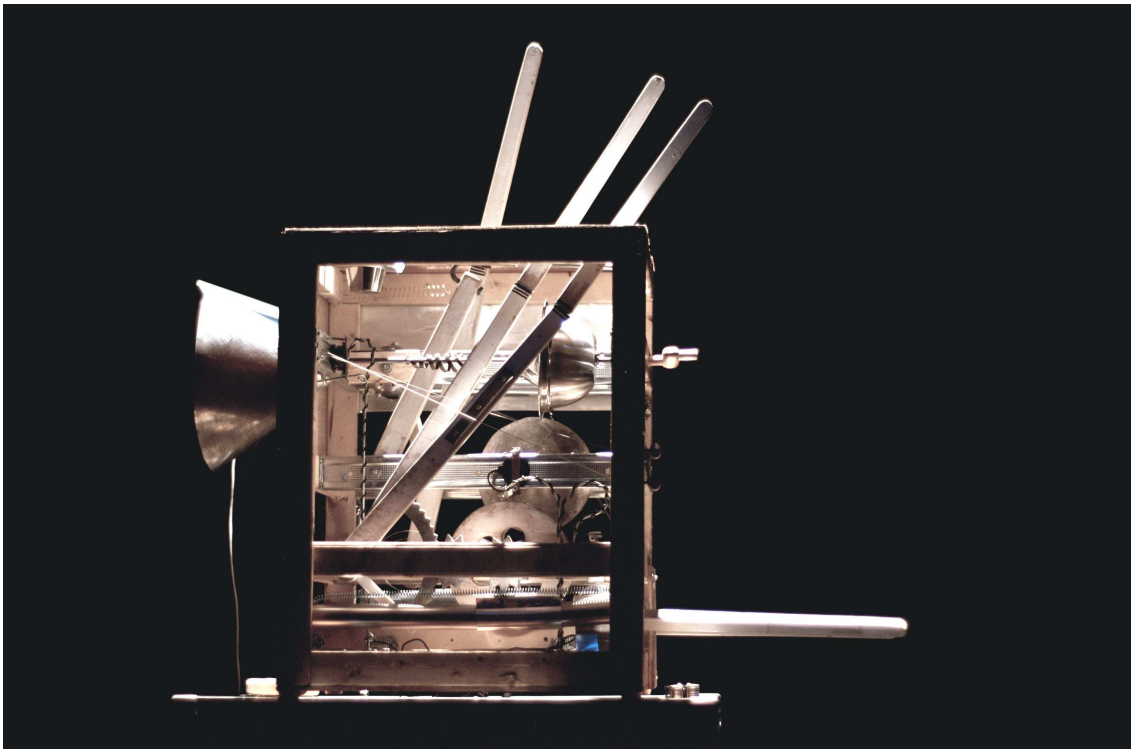
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<sup>4</sup> Such a discussion would lead to a lengthy discussion on Schaeffer’s complex terminology when this text deals the physical object from a material and pragmatic perspective.



work *Dans le ventre de la machine*. The sound of the physical object is extracted to be introduced, in a second phase, in a software sequencer where it is organized on a timeline, launching the physical object into the invisible world of pure sound phenomenon.

As a result, we understand that the invisibility of the object does not diminish its importance. On the contrary, the physical object remains the *raison d'être* of the project.



**Fig. 1.2** Recorded object: a machine made by the carpenter Alexandre Landry in 2008, which helped create the sound material of the work *Dans le ventre de la machine*. Photo: Meriol Lehmann © 2008



**Fig. 1.3** Amplified object: *frequencies (a)*. Photo : Nicolas Bernier © 2013.



**Fig. 1.4** Mechanized object: the sound sculpture *L'usure du clocher*. Photo : Nicolas Bernier © 2011.



**Fig. 1.5** Silent object: *Entre l'aurore et la nuit*, a novel by Marc-André Moutquin, published by Guy St-Jean editions. The soundtrack entitled *Music for a Book* is covered in section 1.5. Photo : Nicolas Bernier © 2012.

### 1.3. The amplified object: *frequencies (a)*

Unlike *Dans le ventre de la machine* where the object is recorded, the objects highlighted in *frequencies (a)* are acoustically sounding bodies, that are heard and amplified in real time. In their further use as props, they satisfy a desire to materialize electroacoustic music.

The beginnings of explorations of sounding bodies on stage is usually associated with the instruments invented by the Italian Futurists and Luigi Russolo's manifesto *L'arte dei rumori* (1913). Further examples include John Cage's *Water Walk* (1959), instruments invented by the composer Harry Partch (*Chromelodeon*, 1965, *Quadrangularis Reversum*, 1941), mechanized instruments manufactured by musician Pierre Bastien (*Mécanologie*, 1997) or even the scrap metal percussions of industrial German group Einstürzende Neubauten (*Kollaps*, 1981). In 1977, the composer Pierre Henry proposed precisely such an "musique d'objets" (music of objects):

But there is one area which we have not developed: what I call "music of objects", which is what tempts me for the future. It would imply people working with sounding bodies, more or less amplified, electrified and transformed — or perhaps not at all — and thus inventing new kinds of instruments — not in the "Dada" style of the futurists and their noisemakers, but with sounding bodies we can manipulate, modulate and play, with all the subtleties arising from a very serious musical education and instrumental gesture.<sup>5</sup> (Henry, 1977, p. 104)

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<sup>5</sup> "Mais il y a un domaine où on n'a rien fait : celui que j'appelle la « musique d'objets », et c'est ça qui me tente dans l'avenir. Il s'agirait de faire travailler des gens sur des corps sonores plus ou moins amplifiés, plus ou moins électrifiés et transformés — peut-être pas du tout —, et d'inventer ainsi une nouvelle lutherie — pas dans le style « Dada » des Futuristes et de leurs bruiteurs, mais avec des corps sonores qu'on puisse manier, moduler, jouer, avec toute la subtilité venant d'une éducation musicale très sérieuse et du geste instrumental." (Translation: T. Hron)

The piece *frequencies (a)*, an audio-visual performance work, fits into this historical continuum. The object explored in this work is the tuning fork: eight in number, each with different frequencies, these acoustic bodies are amplified using piezoelectric microphones onto which they are directly placed. The forks are electrified in a certain way through solenoids that provide the necessary impulsions for their resonances. In a second step, the sounding bodies are also manipulated, played and modulated with subtlety by the artist, as proposed by Henry. Everything is placed on a visual apparatus that is also integral to the work's intention—a chapter is dedicated to the discussion of these visual elements.

The choice to work with the fork is not accidental: it is closely related to my practice, creating a bridge between the acoustic and electronic. In fact, I use the tuning fork not only as the source of sound, but of symbolism. First of all, it is a symbol of centuries of acoustic instrumental music, but at the same time a symbol of the beginnings of acoustical research and, therefore, an ancestor of electronic music. But it is the timbral characteristics of the tuning fork that fascinate me, since the sound it produces is similar to that of the sine wave synthesis, and can thus be used to compose music that might be perceived as electronic though it is produced by acoustic means.

Therefore, the use of the tuning fork as the main object in the *frequencies (a)* performance flows from the proposition to materialize electroacoustic music. Moreover, the object succeeds in functioning as a sounding body and a visual prop, all the while evoking a strong symbolism. A similar symbolic aspect is incidentally particularly in the foreground in the discussion that follows of the work, *L'usure du clocher* (Wear of the Belfry) (2011b).

#### 1.4. The mechanized object: *L'usure du clocher*

So far, we have discussed the object as a sound element at the core of a fixed media work—*Dans le ventre de la machine*, and as a sounding, amplified body in a performance context—*frequencies (a)*. The mechanized sculpture *L'usure du clocher* depends on an object with a highly symbolic power to create a connection between a sound work and a small municipal community. Sound installation works have long been of interest to me, since they are a form where the object's place is firmly anchored. Among others, I would cite influences from the works by Zimoun (*50 prepared dc-motors*, 2009), [The Users] (*Symphony for Dot Matrix Printers*, 1998), Jean Tinguely (*Homage to New York*, 1960), and by Janet Cardiff and George Bures Miller (*Opera for a Small Room*, 2005).

Unlike *frequencies (a)* that uses small objects, *L'usure du clocher* is a more imposing structure, six feet tall. Its sculptural form draws inspiration from the church tower, creating a symbolic link to Western culture and values. As grand a structure as it is, the belfry carries the function of “personifying human relations, populating the space it shares, and having a soul”<sup>6</sup> while generating “an affective quality that is called ‘presence’”<sup>7</sup> (Baudrillard, 1968, p. 20). These ideas about the personification and soul of the environment permeate the sound installation project of *L'usure du clocher*.

During the design phase of *L'usure du clocher*, I needed to take into account a number of elements that were foreign to me: it was an outdoor project for the general public, in

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6 “personnifier les relations humaines, de peupler l'espace qu'il partage et d'avoir une âme” (Translation: T. Hron)

7 “une valeur affective qu'on est convenu d'appeler leur ‘présence’” (Translation: T. Hron)

honor of the 150-year anniversary of Victoriaville, a small town in Québec. The choice of object here converged on the church belfry, one of these urban orchestras, “permanent members of a very particular orchestra”<sup>8</sup> as Daniel Lanois put it so eloquently (2011, p. 142).

The basic idea took shape in the construction of a low-fi tower consisting of three conical speakers pointing<sup>9</sup> towards the ground, mechanized to move in the same way as a church belfry. I was thus exploring the dual nature of the object as described by the art historian Dominique Allard, for whom the object is “anthropological, when defined as an artifact, and poetic when posited as a metaphor, symbol, or allegory” (Allard, 2012, p. 5). Like Baudrillard, Allard also alludes to the soul of objects, but in an animistic perspective where people attribute a soul to the object by the projection of their fantasies and desires (Allard, 2012, p. 5). This animism is particularly strong in the case of kinetic objects, where the inanimate animates, as is the case of *L’usure du clocher*. The decision to animate the tower stems precisely from a desire to invest it with a force that would somehow humanize it, or at least create a link with the people observing it. In this regard Baudrillard tells us that “because the automated object ‘works on its own’, it exudes a similarity to the autonomous human individual, and this fascination carries it”<sup>10</sup> (Baudrillard, 1968, p. 134).

This is thus how the use of a mechanized kinetic object with strong evocative power make *L’usure du clocher* a work whose symbolic character speaks to the citizens of a community.

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<sup>8</sup> “membres permanents d’un orchestre bien particulier” (Translation: T. Hron)

<sup>9</sup> Broadcasting a looped soundtrack from an mp3 player hidden within the structure.

<sup>10</sup> “parce que l’objet automatisé ‘marche tout seul’, il impose une ressemblance avec l’individu humain autonome, et cette fascination l’emporte” (Translation: T. Hron)

### 1.5. The silent object: *Music for a book*

The works presented so far are all based on objects that emit sound. This is not the case for *Music for a book* (2012b), which is a soundtrack to the third novel by Québec author Marc-André Moutquin, entitled *Entre l'aurore et la nuit* (Between dawn and the night) (2012). The music itself, that consists essentially of *field recordings*<sup>11</sup>, has no relationship with the object. However, although the music is not based on the sound of physical objects, it remains intrinsically linked to an object: the book.

My idea to compose soundtracks to literary works germinated for years, from the time I became aware of the omnipresence of the soundtrack in most artistic disciplines — theater, cinema, dance, etc. — but notably absent in literature. In fact, books accompanied by an original soundtrack are relatively rare. Most of the time, books of this kind are accompanied by an editorial selection of existing music. This is, for example, the case with Laura Esquivel's book *The Law of Love* (1997) or Rudy Vanderlans' photographic book *Palm Desert* (1999). We find the more original works in the comics of DJ Kid Koala (2003, 2011). However, Kid Koala's music sometimes feels too short to create an immersive sound environment for reading. This is one of my motivations for composing a soundtrack of considerable length—about 40 minutes: to give readers full freedom in their own rhythm of reading, the tracks are not associated to chapters or events, allowing a more fluid reading experience. There seem to be few examples of this kind of text/sound cohabitation, the most similar example being John Medeski's compositions for Jack Kerouac's *Doctor Sax and the Great World Snake* (2003). Michael Gordon, David Lang and Julia Wolfe created, as a trio, a disc/

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<sup>11</sup> Field recording is a term commonly used to refer to recordings of (outdoor) sound environments.



book edition of their opera *The Carbon Copy Building* (2006), in which the cartoon images from the show are presented in book form. But in my opinion, one of the most interesting and poetic objects is Mount Eerie's *Dawn* (2008). Here we find a real link between the text and the music, since it is a kind of travelogue written by Elverum that is accompanied by musical works he composed during the same trip.

The relationship between sound and the reading of the inanimate object of the book can take on a particular salience. In formal terms, we can draw a relationship between sound creation and literature. This description of the book, offered by philosophers Gilles Deleuze and Félix Guattari, is such an example:

In a book, as in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on the contrary, of acceleration and rupture.<sup>12</sup> (Deleuze & Guattari, 1980, p. 9)

Isn't music constructed in just the same manner, with lines of articulation—the editing, territories—the spaces and soundscapes, and different speeds—the rhythm? I took these literary elements into account in *Music for a book*, trying to give the work a slower kind of pacing/rhythm, and using a long pedal that supports the reading, which is in itself more articulated. In the use of field recordings, the soundtrack also connects with the landscape, an important concept of Northern narrative. On the one hand, the slow and droning nature of the work allows readers the freedom to let themselves be carried without paying attention to particular sonic details and on the other hand, the

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<sup>12</sup> “Dans un livre comme dans toute chose, il y a des lignes d'articulation ou de segmentarité, des strates, des territorialité ; mais aussi des lignes de fuite, des mouvements de déterritorialisation et de désertification. Les vitesses comparées d'écoulement d'après ces lignes entraînent des phénomènes de retard relatif, de viscosité, ou au contraire de précipitation et de rupture.” (Translation: T. Hron)

soundscape helps anchor the unfolding of the narrative in the space described by the author.

Here, the book as physical object does not act as the source of the sounds themselves, but its intrinsic link is in its literary content, which permeated the composition through a feedback loop of the editing of audio and the reading of its pages. The soundscape been composed by reading the book, integrating a few snippets of actual spaces— like rain and footsteps, but especially through the imagination of a sustained space that allows the reader the freedom of mind necessary for the rather heavy nature of the novel.

#### **1.6. The absent object: *frequencies (synthetic variations)***

Up until now, the connection between sound work and object was relatively easy to make since it was directly involved in each of the works discussed. But the issues are different in the case of *frequencies (synthetic variations)* (2013c), which is constructed using synthesized sounds. Indeed, there is no direct correlation between this type of sound and a physical object—except perhaps in the common object that serves as generator, that is to say the computer.

Having composed works primarily using acoustic sounds, I felt the urge, towards the end of my doctoral studies, to take up the personal challenge of composing based on synthetic sounds, which I had never done before. This project's objective was to question my own principles of composition and performance: I wanted, for the first time, to conceive a laptop performance, a work in which there would be no

manipulation of physical objects, forcing me to face a process to which I have objected since starting in the world of sound creation. This “complex but mostly prepared in advance” (Salter, 2010a, p. 177) type of performance puzzled me, prompting me to question seriously the issues discussed by Chris Salter:

Did it live in waiting fastidiously prepped in the machine and ready to take its place on the screen with the human operator’s tasks reduced to the push of a laptop’s spacebar or the press of the play button on the DVD player? What signified “live,” now that the stage was reduced to the pixel and the stretched canvas, to lights, speakers, and projectors; devoid of human presence, yet still generating the excitement and pulse of a performance happening in the here and now? (Salter, 2010a, p. 177)

In *frequencies (synthetic variations)*, I was therefore confronting my demons and diving into an approach I was skeptical about, where the live aspect is justified by the fact that “the machines respond [in real time] to messages stored on data disks” (Toop, 2001, p. 53) without relying on physical action. Based on predetermined triggering of audiovisual sequences without any link to the acoustic sound generated live, the performative characteristics are not located in physical gestures, but in the sound processing performed live, as well as the choice of order and duration of the sequences.

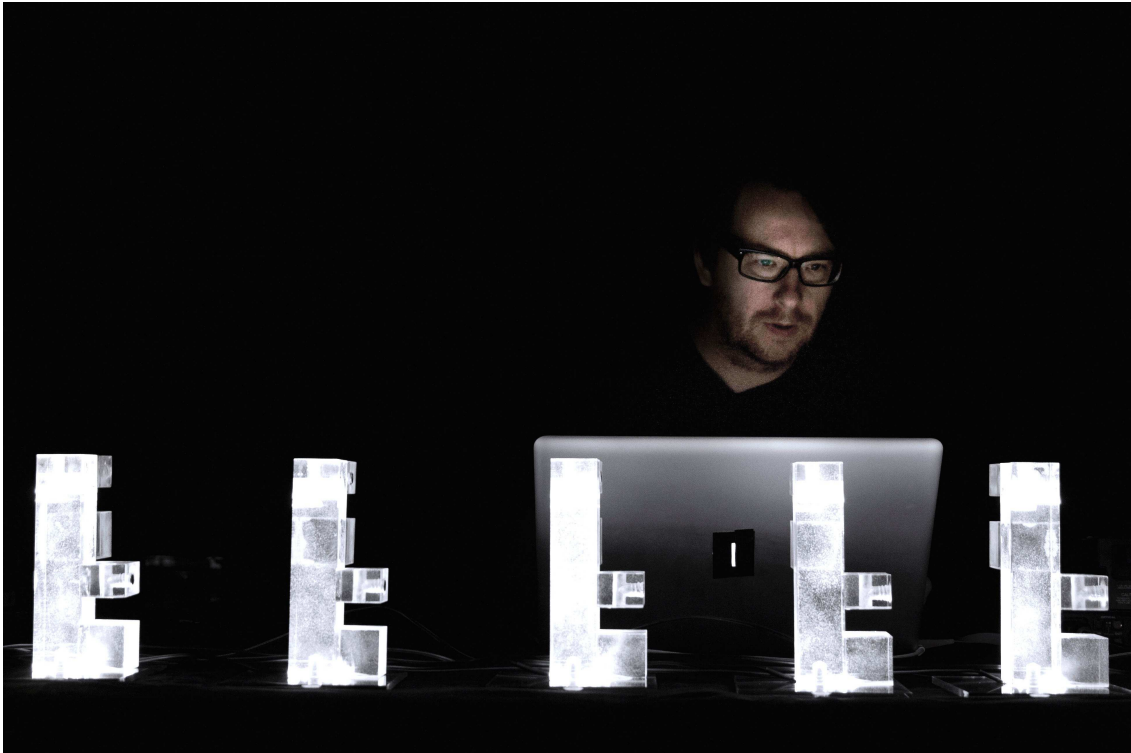
Since the relationship between sound works and physical objects is at the root of my concerns, I saw it as a challenge to find an effective design to combine material aspects with the synthesis-based composition. The first step involved a fairly conventional process of electroacoustic music composition. This consists of considering only the sound, regardless of the visual outcome and how it would eventually be presented as an audiovisual performance. In *L’usure du clocher* and *frequencies (a)*, the sounds and visuals were intrinsically linked, and I could easily imagine the final physicality of the

work right from the beginning of the creative process. In contrast, I had to invent the system of visual representation of *frequencies (synthetic variations)* in a second phase.

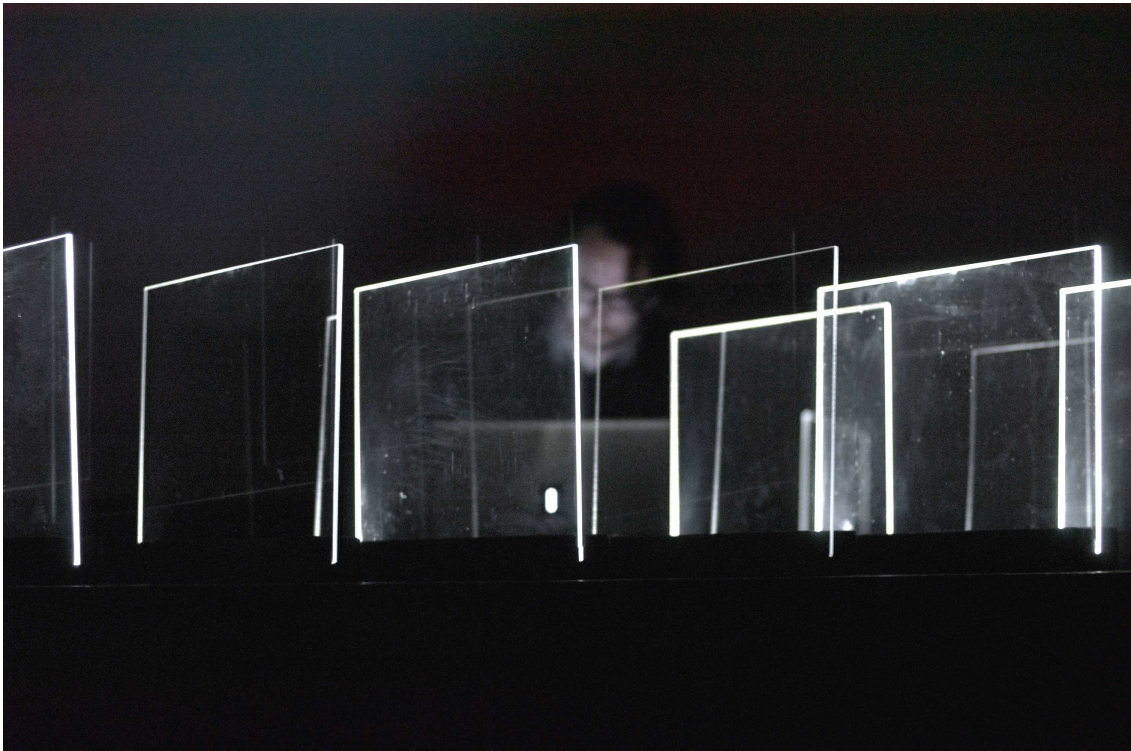
Since the work's sound was based in synthesis, it therefore seemed consequent also to use an object made of a synthetic material for the display: acrylic. In an analogue manner to the organization of audio sequences, the acrylic blocks themselves are assembled differently for each performance. This opens a new course of action for working with the object, as in this case, we are not dealing with an everyday or existing object. With acrylic, it is possible to create abstract shapes while disconnecting from the manipulated object—the visual aspects of performances are discussed in further detail in a section dedicated to the topic.

This is therefore the solution I found to deal with the challenge of finding a relationship to an object within the context of a work created from synthetic sounds. Indeed, the plastic material is proposed so as to provide a conceptual and aesthetic correlation among the various aspects of the audiovisual composition.

This section thus summarizes the context of the objects that lie at the heart of my creative concerns. I began this chapter by suggesting that focusing on the object is a way of working with sound with the aim of materializing it; and then I continued by highlighting a few of the lines of communication between my sound works and physical objects. For example, we have covered how these objects can be recorded in *Dans le ventre de la machine*, amplified in *frequencies (a)*, mechanized in *L'usure du clocher*, non-sounding in *Music for a Book*, or even absent in *frequencies (synthetic variations)*. This allowed me to present different strategies for extracting the evocative potential of the material world within my sound works. The next section will continue by examining a more in-depth use of the object in the context of performance.



**Fig. 1.6.1** Absent object: a first version of the modular visual interface for the work, *frequencies (synthetic variations)*. Photo : DAIMÓN © 2013.



**Fig. 1.6.2** Absent object: second version of the modular visual interface for the work *frequencies (synthetic variations)*. Photo : Isabelle Gardner © 2013.

## **2. Objects and performances**

The use of the physical object on stage brings its own set of issues. Now that I've presented the objects used in the works discussed in this text, this present chapter addresses certain topics related to their integration on the stage, the final phase of the relationship with the object in the process of creation. By presenting performance in its historical context, I will first discuss a few issues raised by such work materializing an invisible sound art. I continue with the more specific questions related to the coexistence between humans and mechanized objects, as well as the manipulation of sounding bodies in real time.

### **2.1. Materialization**

An important part of my interest in the object springs from the need to materialize electronic music onstage, leading inevitably to the issue of the relationship between sound created live and that fixed on a medium. In 2002, Bob Ostertag believed this to be one of the major challenges in the presentation of this type of sound creation:

I think most musicians working with electronics are probably not very satisfied with the state of electronic music today, and the crucial missing element is the body. Many of us have been trying to solve this problem for years but we have been notoriously unsuccessful at it. How to get one's body into art that is as technologically mediated as electronic music, with so much technology between your physical body and the final outcome, is a thorny problem. (Ostertag, 2002)

It is precisely around the time that Ostertag published his article that I became actively

involved into the world of technological arts and electroacoustic music. At the beginning of the twenty-first century when many artistic proposals involving technology were based on abstract content free of physical materials—video, net art, virtual reality, laptop performance—, my interest pointed elsewhere: to the stage, the presence of the human body and sound materials coming from a visible source. But today, we notice that this feeling fits quite naturally in our history, as Chris Salter proposes in his book *Entangled*:

Performance as practice, method, and worldview is becoming one of the major paradigms of the twenty-first century, not only in the arts but also the sciences. As euphoria for the simulated and the virtual that marked the end of the twentieth century subsides, suddenly everyone from new media artists to architects, physicists, ethnographers, archaeologists, and interaction designers are speaking of embodiment, situatedness, presence, and materiality. In short, everything has become performative. (Salter, 2010a, p. xxi)

The founder of *Thing Theory*<sup>13</sup>, Bill Brown, suggests a “return to the real”:

If, more recently, some delight has been taken in historicism’s “desire to make contact with the ‘real,’” in the emergence of material culture studies and the vitality of material history, in accounts of everyday life and the material habitus, as in the “return of the real” in contemporary art, this is inseparable, surely, from the very pleasure taken in “objects of the external world” [...] (Brown, 2004b, p. 2)

My interest in performance seems to be part of the zeitgeist and my past as a rock musician certainly facilitates the move from fixed media to performance works. Since I composed many of my sound works by using and manipulating physical objects, it felt only natural to continue this research onstage.

To this end, it is interesting to note the tensions that exist between recording and live performance. Joe Milutis suggests there was a time where performance lost its noble

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<sup>13</sup> Critical theory that examines the role of the thing in culture.

value in favour of recording: “materialized on tape, vinyl or Edison cylinder, no longer would the spiritual event of live performance be the fetishized endpoint and privileged locus of audition” (Milutis, 2008). Paradoxically, if physical performance returns to the focal point of interest in the technological arts at the turn of the twenty-first century, it is somewhat in response to the ubiquity of recording, as Nicolas Collins points out:

Recording, we all know, has changed the way people listen to music, perform music and compose music. It has also, ironically, made the act of creating music, live and in person, a signally “special” event. (Collins, 2008)

The work *frequencies (a)* draws as much attention to our performance heritage as its does to sound fixed on a medium. Alongside a series of electro-mechanically controlled—through the use of computer-controlled solenoids—tuning forks, the human presence onstage brought with it a whole series of questions about the relationship between the acoustic sounds of objects, synthetic sounds and pre-recorded sounds. For example, when presented with the amplified sound of actual physical objects, is it still pertinent to use sounds generated through synthesis or recording? Indeed, faced with a live sound source produced by a sounding body, the use of computer processing and pre-recorded sound inevitably adds a layer of opacity for the audience’s reading. On the other hand, the interest of a work is created through such a multiplicity of possible readings of the artistic content, hence the decision not to eliminate pre-recorded sound.



Besides, the musician Adam Linson believes it an exaggeration to adhere only to mechanically-generated sound:

Since music performance is a meaningful human activity, it makes little sense to consider music-making solely in terms of the physical production of sound. The context for the intention to make a sound in a musical performance is a human situation, while the mechanics of the sound production are part of a physical system. (Linson, 2011, p. 421)

It would indeed be curious nowadays to abolish the use of fixed or synthetic sounds in favour of only acoustic sound, setting aside all the advances brought by research in the electroacoustic field. However, in the context of physical performance, it remains crucial to find a balance between invisible sound inscribed in media and mechanically generated sound coming from the stage. In fact, what really matters is providing coherent audiovisual content for the audience members without losing their attention should they begin to question the origin of the sounds. Michel Chion discusses these issues related to fixed media in his book *L'audio-vision*:

Faced with sound passing through a loudspeaker that does not come with a visual calling card, the listener must ask the question "what is it" (as in "what caused this sound") twice as often, watching out for the smallest clues to identify its source, which, moreover, are often interpreted against the grain.<sup>14</sup> (Chion, 1990, p. 31)

However, the following is important to keep in mind: a mechanically produced sound does not necessarily lead to a coherence of sounding result. The acoustic sounds that are mechanically triggered in *frequencies (a)* remain just as invisible a phenomenon as synthetic or pre-recorded sounds. In fact, the mechanical action of the solenoids is so

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14 "Face à un son qui passe par un haut-parleur et qui ne se présente pas avec sa carte de visite visuelle, l'auditeur est amené à se poser deux fois plus la question « qu'est-ce que c'est » (à traduire par : « qu'est-ce qui cause ce son ? ») et à guetter les moindres indices d'identification de la cause, souvent d'ailleurs interprétés à contresens." (Translation: T. Hron)

small that the only person able to see the mechanics is the artist right next to the device.

In line with Linson, William Brent also questions this requirement of connecting gesture and sound:

One common assumption is particularly relevant: that there should be a perceivable correlation between the movements of a performing musician and the resulting sound. [...] Thus, we must ask: are desires for clear action-sound relationships merely historical remnants linked to a perverse obsession with technical prowess ? (Brent, 2011, p. 430)

Mitigating the problem of invisible mechanical triggers is one of the main purposes of the lighting system, which adds visual feedback to the triggered tuning forks in *frequencies (a)*, strengthening the connection between sound and vision for the audience.

The central importance in my work of finding that fragile balance between live and pre-recorded sound is clear. *frequencies (a)* is built on a frugal balance of synthetic sound, visual feedback, as well as sound that is mechanically triggered live, which all guide the audience's listening. The next section deals more specifically with the importance of physical manipulation and performance.

## **2.2. Manipulation**

Digital manipulation with a computer in the context of a performance with a human presence onstage, feels less interesting to me than physical manipulation. It is for this reason that an important aspect of my creative process is centered around mechanical manipulation of sound that involves the human body in a more obvious capacity than digital manipulation, which is done mainly through the use of small buttons or a mouse.

However, since the interfaces I use in my performances are unique, and custom built,

the games I play in manipulating them must also be specially designed. For example, I conceived of the playing techniques when writing the performance of *frequencies (a)* because, although the tuning fork is quite a common cultural artifact, there is very little repertoire that uses it as a musical instrument. Indeed, the device on the one hand becomes a new interface, but on the other remains a familiar artifact. Adam Linson explains this dichotomy by suggesting that

Though new interfaces are in principle open to radical innovations, they are generally designed to take advantage of established human skills. In some cases, this comes down to the intuitions of ordinary physical interaction discussed above. In other cases, interaction with cultural artifacts is similarly familiar (e.g., a typewriter or a piano). (Linson, 2011, p. 423)

Nevertheless, the fact remains that even in using familiar objects, the musical performance itself must be conceived in such a way as to fit into the concept of the sound work. Furthermore, in the case of *frequencies (a)*, the tuning forks are played in counterpoint with an electro-mechanical interface controlled by a computer. It is in this double game of human/machine/object interaction that the subject of the performance lies. Indeed, it was important to merge the electro-mechanical performance of the newly-created interface with the physical performance of the human. To do so, I added a second set of tuning forks. Rather than being controlled by the computer, this set is manually manipulated by the artist. These additional manipulations emphasize the gesture/sound relationship since the automated actions of the electro-mechanical interface remain practically invisible. Indeed, the action of the solenoids, too small and rapid, is difficult to perceive clearly.

The most important contribution brought by human manipulation is certainly the dose of imperfection—a section of the text is therefore dedicated to this theme—of the sound generated by the artist versus the rapid and complete synchronicity of what is triggered by computer. These two antipodal playing techniques create a counterpoint that helps the audience distinguish between human and electro-mechanical action.

Although human performance is not perfect, it is nevertheless true that many hours of practice are necessary to find appropriate playing techniques. In fact, a bespoke interface requires just as much practice as a musical instrument, as Linson reminds us: “Though it is an object, a DMI [Digital Music Instrument] is also a tool, and as such, it must be possible to learn how to use it and, with continued learning, to improve over time.” (Linson, 2011, p. 423)

To be sure, the playing techniques I used were found during the rehearsal process. A few examples: striking two tuning forks together brings out their percussive vibrations more than their pitches; playing them as percussion instruments directly on the amplified table, using their mechanical vibrations directly on the microphones and wires, which creates a series very short percussions that create the impression of a distortion. As a result of this instrumental performance research, a kind of agility, a virtuosity specific to the interface emerged. However virtuosity remains somewhat elusive on a singular interface, without any history of interpretation, since there is no comparison available.

In his article, *Human Bodies, Computer Music*, Bob Ostertag notes, nevertheless, that virtuosity is a necessary element in performance:

Virtuosity has been out of fashion for years now, ever since the advent of punk rock, conceptual art and other movements that emphasize the idea rather than its execution. Nevertheless, virtuosity of some sort is a necessary element of almost any performance. (Ostertag, 2002)

For this purpose, although virtuosity on a custom-built interface remains an ambiguous concept, I feel that virtuosity is necessary in order to bring the magic that will stimulate the spectator imagination. For a work to function, there must inevitably be a particular skill that somehow defines the principle of virtuosity. The importance of virtuosity goes back to the fundamental character of instrumental practice in all forms of sound performance. Michailidis and Berweck convey this idea while voicing certain reservations about new electronic instruments:

Through instrumental practice, the performer is able to learn and internalize the responses inherent in the mechanical production of sound. The instrument reacts to the energy it receives from the performer by producing both audible and tactile feedback. However, current electronic musical input devices, instruments and interfaces lack the ability to provide similar haptic feedback to the performer. The missing feedback information introduces practical problems in performances and compositions of live electronic music. (Michailidis & Berweck, 2011, p. 661)

Basically, the *frequencies (a)* interface is of the kind discussed by Michailidis and Berweck, which does not provide any haptic feedback, which led to the decision to add a layer of purely instrumental performance in which the artist manipulates the tuning forks that are not attached to the mechanical interface. The goal, then, is to find modes of cohabitation between the phenomenal virtuosity of the machine when faced with the

approximate virtuosity of human manipulation. The human and the machine rub together in a choreography where both complement each other, playing together either in counterpoint or in opposition. As Salter writes, it is a performance where “[...] real-time actions played out in front of a spectator alongside the agency of machines try[ing] to equally effect changes in the material conditions of the world” (Salter, 2010a, p. xxxii). There is a good example of this man/machine dialogue at the very end of the *frequencies (a)* performance, where the computer generates a sequence of rapid changes while the artist somehow tries to follow the sequence at the same speed, creating a dramatic tension leading the public to question whether the machine or human controls the situation. The tension, however, remains unresolved during the composition leaving the question open. To this end, the philosopher Gerald Raunig proposed that this tension is unwarranted:

It is no longer a matter of confronting man and machine to estimate possible or impossible correspondences, extensions and substitutions of the one or the other, of ever new relationships of similarity and metaphorical relations between humans and machines, but rather of concatenations, of how man becomes a piece with the machine or with other things in order to constitute a machine. (Raunig, 2010, p. 32)

Thus we see how, in *frequencies (a)* the man/machine relationship is related to the notions of instrumental performance, apprenticeship/practice and virtuosity. Techniques are invented in order to allow for human-machine cohabitation that work together in the development of the performance. This work discussed here was not carried out in a spirit of confrontation, but was, rather, holistic, where the human was as important as the machine. This union points to a notion of hybridity that goes beyond a technical human/machine connection, leading to the relationship between sound, image, movement, lighting and other aesthetic elements. We will now explore how materializing digital sound works onstage requires us to think of composition in the realm of hybridity.

### **3. Objects and vision**

The link to the object and its use in the context of performance inevitably lead to a discussion of issues related to the visual composition this type of project requires. This section addresses how working with the object necessarily bring disciplinary hybridization. We also analyze the practice of working with physical and light materials, to conclude with the synchronicity between audio and video as the primary multidisciplinary composition technique.

#### **3.1. Hybridity**

In developing such an object-based project, I feel it is important to contemplate the multiplicity of artistic aspects since the proposition does not only entail sound composition. Indeed, when a project is presented on stage, it seems impossible to consider that what is presented depends only on the sound component. The visual component, modest as it may be, should not be obscured. Some believe that sound “has become the show for which the music is nothing more than support”<sup>15</sup> (Chion, 2009, p. 79), but it seems natural to me to design a stage performance that takes all the artistic parameters perceived by the audience into account.

Obviously, once onstage, the artist is no longer facing a listener but a spectator. Dealing with gesture, movement, light, object, architecture, scenography, and body language are

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<sup>15</sup> “en vient à devenir le spectacle dont la musique n'est plus que le soutien” (Translation: T.Hron)

all extremely important elements that should thus not be relegated to the background. Moreover, the art historian Simon Shaw-Miller writes the following in his article *Separation and Conjunction: Music and Art*: “Performance is multimedia, and therefore we cannot simply speak of art and music as we do in the context of formal modernism; instead, we need to think in the gaps and across the frame” (Shaw-Miller, 2010, p. 34).

This multidisciplinary approach inevitably brings to mind Richard Wagner’s *Gesamtkunstwerk*, described as early as 1850 in his essay *Das Kunstwerk der Zukunft* (1850). *Gesamtkunstwerk*, or “total work of art”, proposes the simultaneous superposition of several artistic disciplines, as illustrated by art historian Barbara John: “The term *Gesamtkunstwerk* refers to the utopian aspirations beginning in the early nineteenth century toward the union of all the arts into a single work of art” (John, 2009). Since witnessing the explosion of disciplines, we’ve also seen the emergence of a multiplicity of terms specifying the types of relationships between the arts: multidisciplinary, interdisciplinary or even transdisciplinary.

Chris Salter for his part, put forward the term *Entangled* to evoke the fact that not only are our senses linked, but we are also closely connected with the technology we use:

the term entangled from its anthropological connotations suggests that human and technical beings and processes are so intimately bound up in a conglomeration of relations that it makes it difficult, if not impossible to tease out separate essences for each. (2010a, p. xxxii)



The *frequencies (a)* performance is a case in point of this hybrid approach. There are elements of theatre in the bodily actions onstage that are carried by a certain kind of dramatic buildup: at the beginning of the performance, the artist does not interact with the interface while at the end of the performance, the more interaction there is, the more difficult it seems, and the more the performance seems to require an exhausting amount of energy.

In *frequencies (a)*, there are also elements that we could link to dance since the interaction with the interface requests gestures that were not developed in a purely utilitarian, but also aesthetic perspective. I designed the speed of the movements, the placement of the body in space, and the motions themselves travel to imprint the presence of the body consistently with all the elements of the work. The performance also carries references to science—the tuning fork as a scientific instrument, set design—a laboratory setting, as well as visual and lighting elements, which will be discussed in the next chapter.

In sum, when presented onstage, my work goes beyond the scope of sound composition to encompass concerns that touch on several artistic disciplines. Working with the object requires a reflection on the visual aspects that involve numerous elements borrowed from theater, gesture and the visual arts. Moreover, the next chapter is devoted to the visual aspects involved in working on physical matter itself.

### 3.2. Materiality

Exploring the object inevitably entails working with physical matter, which requires different skills from those needed for sound work. My interest in the object is directly related to my attraction to the visual arts. Before I entered the world of composition, while employed as a graphic designer, my interests focused on photography and the visual arts as much as on music. My first works—between 2001 and 2005—were based mainly on video, flowing smoothly from my interest in the visual. Although I cannot think of myself as a visual artist, this dimension is a major part of my creative approach.

*L'usure du clocher* represents my first foray into the world of sculpture, forcing me into relationship with physical materials. Although I developed good instincts for visual composition in my previous career as a graphic designer, work with physical matter was foreign to me. I treat physical material analogously to sound: colour, texture, range, thickness and grain are meticulously modelable. Although the *L'usure du clocher* took the shape I imagined—a simple, neutral object, evoking industrial production, dealing with the physical matter, mainly aluminum, was, however, more difficult. The first version where the matter is in its natural state was rather successful, but then I decided to change it for the sake of equalizing the colours of the different components. In the process, the visual texture changed completely, and inadvertently, the visual work's meaning was different: the object no longer seemed to be an industrial object from a factory, but now appeared worn, altered by someone. This is where I faced the biggest difference between physical and digital work: the absence of the “undo” function. Since using physical material is expensive and I had no funding for the production of this

work, it was impossible for me to start again at square one.

Another aspect of working with physical matter is the physical space it requires. My modest composition studio turned into an even smaller creative workshop when it was invaded by the great aluminum belfry. It was impossible for me to keep this sculpture that occupied too much of my workspace. So I presented it once and then destroyed it. This experience has been very useful to me, as I learned so much about visual practice and physical matter, not to mention how to deal with electricity, motors and welding, which I was tackling for the first time, and this laid a foundation for the techniques employed in my next works, *frequencies (a)* and *frequencies (synthetic variations)*.

When starting *frequencies (synthetic variations)*, I imagined composing a pure sound work, but it quickly became clear to me that a rich visual component would be very worthwhile. Unlike *frequencies (a)* where the sound and visuals interpretation were created simultaneously, here I wanted to compose the elements in two stages, focusing on the sound first. Since the piece is composed of short sequences played in a random order, I also used this model for the visual aspect. MIDI<sup>16</sup> sequences were generated in relation to the sound work, knowing that they would be reused to control the custom lighting. These sequences could eventually be synchronized to a standard theater lighting system, rotary motors or even solenoids, or robots or automatons. For now, they are used to synchronize light projected inside acrylic structures. The clear acrylic serves here to make a link between the synthetic material present as much in the sound as the visual matter. Acrylic also points towards the work of visual artists from the

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<sup>16</sup> MIDI, or Musical Instrument Digital Interface, a communication protocol used for the interaction of different digital music devices.

*Light and space* movement. Emerging on West Coast of the USA in the 1960s, artists such as James Turrell , Larry Bell and Doug Wheeler used light and plastic materials “[...] directing the flow of natural light, embedding artificial light within objects or architecture, or playing with light through the use of reflective, translucent, or transparent materials [...]” (Clark, 2011, p. 20).

*frequencies (a)* and *frequencies (synthetic variations)* are, in my opinion, more successful in their use of physical matter than *L’usure du clocher*, because the materials themselves remained unprocessed, the concentration placed rather on their form than their texture. This premise of a raw material draws inspiration from the work-objects, or the *Specific objects* (Judd, 1965) of minimalist artists. Five principal artists — who nevertheless all refused the minimalist label — are credited with the birth of minimal art: Carl Andre, Dan Flavin, Donald Judd, Sol LeWitt and Robert Morris (Marzona, 2004a, p. 6). We identify minimal art with certain recurrent features: the use of simple geometric shapes, objects arranged naturally in the room—moving away from the notion of the sublime—and material left a raw, unprocessed state (Schrei, 2005). A similar spirit permeates the visual elements of *frequencies (a)*: the use of prefabricated acrylic material cut in its simplest shapes; a luminous, unadorned, rectangular table; pedestals assembled with cubic or rectangular-shaped pieces. For the sake of further constraints, I also limited myself to the use of white light. Whiteness represents the white of museum walls, and as a consequence, to the skeleton on which visual art often hangs. The tuning fork, the primordial object of this work, also endorses minimalist principles since it is an object manufactured industrially, in series, following a simple design and with a unique purpose.

Paradoxically, using the tuning fork creates a strong referent, which stands against minimalist ideals, which usually “refer neither metaphorically nor symbolically to anything beyond themselves” (Marzona, 2004b, p. 11). Since the tuning fork has a strong symbolic value, I wanted to find a balance between the referential content that emanates from the object in order to integrate it into a sober and formal visual aesthetic. The refusal of the sublime, adhered to by the minimalists, is another source of contention. In leaning into the musical and its performance, with its all its related characteristics, the sublimation of reality is part of my task. I am charged with building a magical moment for the audience, with areas of half lighted *clair-obscurs* and inexplicable elements. The minimalists were searching for rather the opposite:

The minimalists wanted their work to be about real space as opposed to the space of illusion, but this distinction is less easily made with work that illuminate and colour themselves and the space they occupy than it is with sculpture. It is true that when we look at a Flavin we are seeing something and that it is real; but the perception that an object is being dissolved by and into the light it is itself does not comfortably fit any definition of the real except in an extremely metaphorical sense. Flavin and the minimalists didn't want to be metaphorical, however; they wanted to be empirical. (Gilbert-Rolfe, J. in Weiss, 2006, p. 88)

While pointing out the various links to the visual arts that help feed my work, a number of challenges emerged during my dealings with the physical matter in the works *L'usure du clocher*, *frequencies (a)* and *frequencies (synthetic variation)*. This allows us to bridge the gap between physical matter and another element favoured by the visual artists mentioned above: light.

### 3.3. Luminosity

From the most distant past to the present day, light has always fascinated the human spirit. It has always held a strong grip on human emotion and thought, on how they view the world, whether they are religious, philosophers, poets, artists and scholars. Well before the light became the subject of scientific studies, it was considered to be of a transcendental nature.<sup>17</sup> (Xuan, 2008, p. 29)

I became interested in light around 2005, when I was looking for an alternative to video in audiovisual composition. In fact, I had lost interest in video because the exponential proliferation of screens that now took up such a prominent place in the art world. Its format, which trapped images most often in a rectangular frame, no longer suited my purposes. The screen was now so present that it stole the content's show; it became the new stage, one where there were no humans any more, only images:

Through the increased interest in simulation, virtual reality, and the development of interfaces to set such simulations into interactive dialogue with their users, the screen and the computer became a new kind of stage [...].

(Quoting Brenda Laurel in Salter, 2010a, p. 321)

I knew that a visual alternative to the screen had to exist, and I was looking for it. Light without a screen — since video is in fact, also light — thus offered an interesting avenue. As a medium, it is closer to sound, since it is not framed, and is thus a more fluid entity, freer to project in space. On the other hand, the light is always used to illuminate something, which brings us back to the object, since there needs to be something to shed light upon, to put onstage. This thing could ironically be a screen, but that is obviously not what interests me in light.

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<sup>17</sup> “Des temps les plus reculés jusqu'à nos jours, la lumière a toujours fasciné l'esprit humain. Elle a toujours exercé une grande emprise sur les émotions et les pensées des hommes, sur la façon dont ils conçoivent le monde, qu'ils soient religieux, philosophes, poètes, artistes ou savants. Bien avant que la lumière ne devienne sujet d'études scientifiques, elle était considérée comme d'ordre transcendantal.” (Translation: T. Hron)

My particular interest in the works of minimalist artists, especially Dan Flavin's, influences my own approach to light: "Just like colour, light continues to fascinate composers and musicians alike" (Kienscherf, 2009). Dan Flavin is a visual artist especially known for his work with light, more specifically with fluorescent tubes.<sup>18</sup> Flavin himself described these fluorescent tubes as "vibrant instruments" (Flavin, 1965). When used in combination with a light and sound interface onstage, we can certainly see the lights as an instrument, or at least as a component of the audiovisual instrument onto which they are grafted. Flavin's fluorescent tubes are one of the major influences on the *frequencies (a)* interface.

The fact remains that this type of work has important analogies with the video, since it is similarly organized in time and space. Chris Salter describes different ways to use video in performance thus, and the proposal could largely also apply to light design:

Video could be used in performance setting to (1) invoke the cultural phenomenon of television or, more broadly, the media (video as a sign), (2) articulate the tension between the live and the recorded, (3) articulate the tension between lived stage and media time and fragment its expected continual passage, (4) challenge the line between the public and the private, (5) invoke the image and experience of surveillance, (6) occupy sculptural space (as a light source, for instance), (7) provide multiple perspectives and points of view, (8) demonstrate the tension between presence of the flesh and blood performer and absence of the body, (9) emphasize the utter artifice of the theatrical event, and (10) act as a microscope, closing in on and recording elements unbeknownst to the human eye (a system of repetition). (Salter, 2010a, p. 130)

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<sup>18</sup> Various monographic books are dedicated to his work, including *Dan Flavin: New Light* (Fer, 2006).

In the case of *frequencies (a)* and *frequencies (synthetic variations)*, I used light in accordance with Salter's points 2, 6, 8, 9 and 10. Tensions between the "live" and the pre-recorded are articulated—point 2 in Salter's enumeration—the light in *frequencies (a)* reacts to a pre-recorded electrical signal that triggers a synchronicity between the tuning forks/solenoids and light, while the artist's manipulations have no lighting correlation, thus creating a counterpoint. In the middle of the show, I also composed a moment when the light reacts to the pre-recorded sound and not the sound of the tuning forks, as is the case in most of the work, which helps articulate this tension.

In my two audio-light projects, light is used to fill a sculptural space—point 6 in Salter's enumeration. In *frequencies (a)*, a sculptural object, the table on which the device/interface is placed, appears in the space when the lighting is fully active. The light emitted by the table projects upwards, revealing certain elements of the concert hall—like rigging, furniture and walls, allowing each performance to bring out different shadows emerging from the sculptural space/architecture of the hall. In *frequencies (synthetic variations)*, the light is less diffused into the hall as it is contained within acrylic structures. It is the positioning of the acrylic sculptural pieces themselves that interact with our perception of the architectural space. The light component of this project mainly resides in the use of transparent rectangular plates within which the light is projected, and reflects on the edges of the plates. This creates a strange luminous effect where the plates appear to be floating. In an article on the work *Light and Space* artists, Stephanie Hanor moreover similarly describes one of the effects of plastic and acrylic: “the transparency of the plastic allows the object to be presented as light: the



solid object becomes an optical phenomenon” (Hanor, 2011, p. 134). The ten acrylic plates I use are arranged each time in an order that I determine in the performance space and in relation to the technical requirements like seating disposition, the size of the tables used for my setup, etc. The light produced by one plate reflects on the others, and always creates new designs, new light combinations, new perceptual effects, which mirrors the improvised aspect of the work.

In point 8 of Salter’s list, on the expression of the presence and absence of human body, light in *frequencies (a)* is sometimes so thin that the human disappears completely. Another technique I employ is a strobe that allows me to show only very short moments, where darkness creates discontinuity in the image revealed to the public. Chris Salter explains this phenomenon in his article *The Question of Thresholds: Immersion, Absorption and Dissolution in the Environments of Audio-Vision* :

Like the transient, discontinuous attack of perceptual phenomena that upsets the brain’s sensory modality hierarchies, a sudden flash in the visual field jostles the eye into another way of looking, disturbing its routine and challenging the assumption that we continually "see" the whole visual field before us.  
(Salter, 2010b, p. 209)

In both audio-light performances, the light emphasizes the artificiality of the performance—item 9 in Salter’s enumeration. In *frequencies (synthetic variations)*, there can be little ambiguity, since all the materials, both visual and audio, are synthetic. The form, the limited development of materials, the lack of physical performance and the material in which light is projected approaches an artificiality rather than a natural or organic phenomenon. We also find this reference to the artificial in *frequencies (a)*, where the cold white light projected by the table, coupled with the

technological paraphernalia evokes the spirit of a scientific laboratory, a place that we often associate with research on synthetic and artificial substances.

Using light is a subtle way to create an immersive environment. Like sound, which cannot be framed, light reflects all over the room, on the walls, the body of the artist and the viewer. This brings us to another aspect of Flavin's work:

The phenomenological experience of a room of fluorescent light is not to look at it but to be in it. The fluorescents may be ready-made objects, but they cease to be discrete objects as soon as they are arranged in a situation. They cast light and shadow all around, onto the walls and onto the spectators who are there. (Fer, B. in Weiss, 2006, p. 26)

In this section, I explained the origins of my interest in working with light as the main component of visual staging for the performances *frequencies (a)* and *frequencies (synthetic variations)*. I showed that its use represented a search for a kind of audiovisual composition that did not use video, all the while addressing the main compositional strategies that are common in video, as developed by Chris Salter. Since these strategies are based on a rhythmic relationship between sound and light, the main compositional technique remains synchronization. This is fundamental and unavoidable issue, because even when there is no synchronization, the question of synchronicity and non-synchronicity remains central in any work that combines several heterogeneous elements.

### 3.4. Synchronicity

Indeed, the moment a discourse takes place in time and space, its various elements are necessarily linked and structured within a temporal relationship. Whether that is one of synchronicity, desynchronicity or counterpoint, the sonic and visual aspects are built around “points of contact between temporally organized processes and spatially organized artifacts” (Kwastek, 2010, p. 149). Omnipresent in the arts, the relationship between the visual and the sonic has been a fascination since the dawn of time, as explained by Birgit Schneider:

Artists were guided by the ideal that the dominant distinction between optical and acoustic perception in art could be fundamentally overcome. This fascination was based on an analogy that had dominated since antiquity: that sounds could be assigned to visual experiences, just as images had corresponding tones. (Schneider, 2010)

The example most often cited as precursor to works dealing with an audiovisual relationship is that of the Jesuit Louis Bertrand Castel, who, already in 1725, proposed the construction of a “Harpichord for the eye”, a musical instrument that could paint colour (Castel, 1725). In Castel’s treatise *L’optique des couleurs* (The optics of colours) (Castel, 1740), the composer Georg Philipp Telemann, who composed for Castel’s ocular harpichord, describes the instrument thus (original quote is in ancient French):

Since pressing a key, just like pulling a stop, a piston or a heel, opens a valve to make a sound, P. Castel, in the same way, used silk cords, brass strings or strips of wood, that were pulled or pushed by the front or the back of the key, to open a chest of colours, a compartment, a painting, or a lantern lit in colour. So that in the same instant that you hear a sound, you see a colour relative to that sound. This is sufficient instruction about the musical movement of colours. The more the fingers run and jump along the keyboard, the more we see colours,

either in chords or in a harmonic progression.<sup>19</sup> (Telemann in Castel, 1740, p. 482)

Early efforts to find synchronicity and aesthetic correlations between sound and image developed in various forms, such as "visual music" which translates images into sounds: here we should consider, among others, the work of filmmakers such as Norman McLaren (*Synchrony*, 1971), Walter Ruttmann (*Lichtspiel Opus IV*, 1925), Hans Richter (*Rhythmus 21*, 1921), Viking Eggeling (*Symphonie Diagonale*, 1924) and Oskar Fischinger (*An Optical Poem*, 1938). Artists also appropriated this relationship in the form of dialogues with light as in Robin Fox's *Laser Show* (2007), electricity as in *POWER* by Artificiel (2009) or space like in Kurt Hentschlag's *Zee* (2008). But what primarily interests me is the relationship between the sound and the object. In this context, it is important to mention works that make electroacoustic equipment itself the subject of audiovisual performances. I am thinking here of Steve Reich's *Pendulum Music* (1968) or even more of Gordon Monahan's *Speaker Swinging* (1982).

In my work *L'usure du clocher*, I use an invented object that borrows from a device in the electroacoustic chain, the speaker cone. As a dialogue, desynchronicity is the operative principle of the vertical writing of sound and image. In this project, the two elements were developed completely independently. This artistic decision was determined here by the project's technical constraints, which did not allow for the detailed kind of composition that is geared towards precision work in the synchronicity of sound and image. The fact that the work that was presented outdoors, and might face

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<sup>19</sup> "Comme la touche en pressant ou en tirant une targete, une pilore, ou un talon ouvre une foufpape pour opérer un don, de même le P. Caftel s'eft fervi de cordons de foye, de fils d'archal, ou de languettes de bois, qui, étant tirés ou pouffés par le derrière ou le devant de la touche, ouvrent un coffre de couleurs, un compartiment, ou une peinture, ou une lanterne éclairée en couleurs. De manière qu'au même instant vous entendez un fon, vous voyez une couleur relative à ce fon. Ceci fuffit pour rinstruction au fujet du mouvement mufical des couleurs. Plus les doigts courent & fautent fur le clavier, plus on voit de couleurs, foit en accords, foit dans une fuite d'harmonie." (Translation: T. Hron)

adverse weather conditions and vandalism, meant the device had to be as crude as possible in terms of materials, and very sturdy electronic equipment. This context made the use of a computer or micro-controller that could be damaged on site difficult, so I opted instead for playback of digital audio files. Without this constraint, I might have further developed the relationship between the music's packing and that of the movement of the bells.

In works where I controlled light with the computer, *frequencies (a)* and *frequencies (synthetic variations)*, synchronicity is more or less at the root of the dialogue between the audio and visual elements. However, I see little interest in a systematic synchronicity. According to Schneider, such an objective correspondence is nonexistent in any case, suggesting that “the artists ultimately demonstrated that there are no universal correspondences between colours and sounds that can be determined physiologically and objectively” (Schneider, 2010, p. 177). I think it is important to keep the dialogue between sound and visuals vibrant, to keep surprises for the audience by avoiding unequivocal relationships on the audiovisual level. I am not, therefore, interested in showing an objective concordance or even demonstrating that a certain element is in a dependent relationship to another.

To avoid such uncomfortably close concordances, I decided to write the light score by hand, in the same way as the solenoid score. Rather than be triggered automatically by reacting to a sound, each light movement is meticulously reflected through a prism of MIDI automation curves, which thereby regularly divert reactions and avoid a systematized visual mapping. Thus, all kinds of relationships are possible in the sound

and light concordance/discordance, as much with respect to the rhythm as to the intensities, to the density, to the triggers/interruptions or to the motions.

In my performances, I also keep the option of using an automatic system of sound-light reaction in certain sections, when I want unfaltering synchronicity. Such synchronicity inevitably leads to points of sychreseis, a concept Michel Chion explains in his book *L'audio-vision: Son et image au cinéma* :

Synchresis (a word forged by combining "synchronicity" and "synthesis") is the spontaneous and irresistible welding that occurs between a sound phenomenon and momentary visual phenomenon when they occur at the same time, independently of any rational logic.<sup>20</sup> (Chion, 1990, p. 55)

Even though Chion devised this concept around the relationship of film and sound, it applies equally well to lighting, most likely because film is also an art of light. This principle seems particularly suitable to interdisciplinary works, naturally suited to the phenomenon of synchresis, since they are neither purely musical, or visual, but audiovisual. Even when there are no vertical points of synchresis in my performances, they still remain syncretic because they consist of a coherent whole that cannot be divided into several parts, since the different elements were elaborated together at the very root of the composition.

We already devoted a section to the phenomenon of hybridization and synchronicity is one of the most significant technical-aesthetic aspects of such hybrid forms, “essential

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<sup>20</sup> La synchrèse (mot que nous forgeons en combinant « synchronisme » et « synthèse ») est la soudure irrésistible et spontanée qui se produit entre un phénomène sonore et un phénomène visuel ponctuel lorsque ceux-ci tombent en même temps, cela indépendamment de toute logique rationnelle. (Translation: T. Hron)

for a truly unified art”<sup>21</sup> (Piché, 2003). Jean Piché, artist and professor at the Université de Montréal, who, working as much with video as with sound, brought us the concept of “videomusic” (Piché, 2003) : an art that is neither music nor video, but videomusic. Still with the desire to expand the principle of synchresis brought to us by Chion, composer Adam Basanta offers an analysis of what he calls luminosonic objects. Akin to Piché’s vidéomusique, a luminosonic object is neither sound accompanied by light or light accompanied by sound:

A luminosonic object is in this regard an audiovisual object in which —by virtue of the localized production of sound and light—the two media are perceived as integrated, composite material. That is, sound and light are always in relation to one another, mutually constituting our perceptual understanding of the luminosonic object. (Basanta, 2012)

I find it very appropriate to use the term luminosic to describe the light objects used in my performances *frequencies (a)* and *frequencies (synthetic variations)*. Basanta’s analysis extends his research based on models proposed by Chion, as well as Coulter (2010), by observing that this research focused primarily on the relationship between the moving image and sound:

the few existing analytical frameworks addressing the constitution of audiovisual material centre exclusively on screen-based practices, and thus ignore the possibilities afforded by emergent forms of non-screen based audiovisual production. (Basanta, 2012)

Following Basanta’s lead in moving the dialogue of synchronicity from sound and images to sound and light, I feel it is relevant to continue this research by developing a global model that encompasses all combinations of media, and, above all, a multiplicity

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21 “essentiel pour un art véritablement unifié” (Translation: T. Hron)

of elements since the dialogue of possible synchronicity could extend far beyond two voices.

This is why we come to the conclusion that the multidisciplinary nature of some of my works makes synchronicity one of the main elements of my formal writing. After running through a short summary of the historical and analytical foundations of sound and light dialogue, we have seen how the work *L'usure du clocher* denies the concept of synchronicity and how important the switch between synchronicity and non-synchronicity becomes in avoiding an unequivocal approach to this relationship in the works *frequencies (a)* and *frequencies (synthetic variations)*.



#### **4. Summary of Part One**

The first part of this text laid out the central concerns of my work, that is to say the relationship between the object and sound creation. I examined both the historical and analytical aspects of this relationship, defining the framework for the works discussed. I then summarized certain aspects of the intentions behind a compositional approach rooted in the object within the world of sound creation, but also in the visual and performing arts, leading to sound works built under the sign of hybridity.

After focusing on the physical components of these works, the second part explores my position as an artist in greater detail. Here I go into the ideas hidden behind the works. I look at these ideas from a conceptual angle, to then connected them with the object. As a result, it should become clear how this interweaving of ideas, conceptual reflections and developed materials forge the aesthetic identity of these works.

PART II

IDEAS, MATTER, AESTHETIC

Following the above analysis of the motivations behind creating sound works in close relation with the physical object, this second part is devoted to the main aesthetic currents running through my compositional process, at the centre of which is a reflection on the material itself. Sound material rubs against the physical material of the object, but also the abstract material of ideas. It is, firstly, a question of establishing creative bases from which compositional impulses emerge within a discussion of the conceptual material. Conceptual content is a vital element of my approach, despite the fact that I will always select the primacy of result over a purity of concept. Although the artwork must exist independently of its concept, the latter is a composition element that is as important as the sound material itself.

In a second step, the main writing technique will be settled in such a way as to create a clear picture of the main aesthetic characteristics put forward in the works discussed here.

## 5. Conceptuality

Since music is antithetical to the definiteness of material things, it is also in opposition to the unambiguous distinctness of the concept. Thus it may easily serve as a means to create retrogression and confusion, all the more so because, despite its nonconceptual character, it is in other respects rationalized, extensively technified, and just as modern as it is archaic. (Adorno & Eisler, 2005, p. 21)

Although the importance of the physical object in my artistic work should now be clear, a paradox does occur: working with the object inevitably feeds concepts and abstract ideas. Although firmly anchored in the material nature of the object, a conceptual approach, an immaterial material, acts as a motor for ideas. We might be tempted to say that "sound, like colour, be accepted as a reality that cannot be conceptualized or even spoken, or perhaps even transmitted. It is a purely private experience"<sup>22</sup> (Guinebault-Szlamowicz, Larrue, & Mervant-Roux, 2011, p. 5). But for reasons that I cannot explain, I am not satisfied with sound for sound's sake, or where only its beauty would be enough to justify the existence of the work. Faced with this overly pragmatic or plastic approach, I allow great space for the ideas, motivations, and interests hiding behind each work. This creative abstraction is intrinsically linked to the physical result, as suggested by Guinebault-Szlamowicz et al.: "conceptual work, which we usually consider to be cut off from reality, [is] directly generated by a query whose roots themselves spring from an 'action'"<sup>23</sup> (Guinebault-Szlamowicz et al., 2011, p. 6).

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22 "le son, comme la couleur, fait partie des réalités qui ne sont pas conceptualisables, ni même dicibles, ni même peut-être transmissibles. Du pur expérientiel privé" (Translation: T. Hron)

23 "le travail conceptuel, dont on pense ordinairement qu'il est coupé du réel, comme directement engendré par une interrogation trouvant elle-même ses racines dans une 'action'" (Translation: T. Hron)

However, despite the significance given to these abstract elements, they are applied without falling into purely conceptual art. This is an “art often without ‘object’”<sup>24</sup> (Marzona, 2005, p. 7) in which the work is thought to “s’affranchir de sa réalisation matérielle, qui est désormais considérée par de nombreux artistes comme étant secondaire, voire superflue” (Marzona, 2005, p. 7). Although my practice is not involved in that direction, I am nevertheless unable to justify the end without reflecting on the means, without driving ideas, as vague as they may be. As a result, I do not completely agree, for example, with the position suggested by composer Alvin Lucier that his own work “is more concerned with ideas than music” (Lucier, 1995, p. 190). These ideas are present in any work at different levels, giving certain ones greater or lesser importance than others. It is in this spirit that Michel Chion expresses that “even for the most instinctive human beings in the world, his words and ideas are as necessary in order to make music, than his hands or ears”<sup>25</sup> (Chion, 2009, p. 31).

Between the conceptual and the pragmatic lies a process in which the artistic result is more important than the concept. On the opposite side, it may also be possible to spring towards Simon Shaw-Miller’s direction, who advocates that art “can offer no conceptual content; it gives the appearance of conceptual play, but, unlike language, it is empty of real meaning” (Shaw-Miller, 2010, p. 37). It thus seems to me important to realize that conceptual material remains very personal and is only partially transferable to the person receiving the work. Based on this observation, I always see my work as a compromise in the sense that I never manage to materialize my ideas and concepts

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24 “art souvent ‘sans objet’” (Translation : N. Bernier)

25 “l’être humain, serait-il le plus instinctif du monde, est ainsi fait que ses mots et ses idées lui soient aussi nécessaires, pour réaliser de la musique, que ses mains ou ses oreilles” (Translation: N. Bernier)

precisely enough. This is what Lisa Le Feuvre puts forward as “one of the most crucial areas where we can identify the endemic presence of failure in art-making activity is in the gap between intention and realization” (Le Feuvre, 2010, p. 13). Still, this “failure” in the transmission of concepts does not necessarily result in an artistic failure and that is why it is important for me to distinguish between intention and realization.

In a creative process, I always arrive at a moment when I realize that there are only traces of the driving ideas left in the work and that there is no way any more to align with the initial notions<sup>26</sup>. Electronic music pioneer Herbert Brün suggests triangulation between conceptual, musical and communicated ideas:

Music is the result of a continuous attempt to reduce to order the assumed chaos in the system of acoustical elements and events, with the purpose of mobilizing means for the communication of thoughts which transcend the definition of the system. (A creative project.) These thoughts, consequently called musical thoughts, are the result of a continuous attempt to organize a system, called composer’s mind, with the aim to know all about the system, and to render the extracted information communicable. (A scientific project.) (Brün, 1987)

Musical ideas flowing from Brün’s “composer’s mind” system, add up to form opaque layers of which only a small part can be expressed in the final project. It is therefore up to composers to work within these parameters without losing sight of their artistic goals, which, when not dealing with conceptual art, are found only in the work itself.

Nevertheless, it is true that without these conceptual paths, the work would not see the light of day, because it is the abstract material that gives the impulse to the

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<sup>26</sup> It is important to remember that we are dealing here with works based mainly on sound, works without text and/or without narrative images, both of which can greatly help in a more precise communication of ideas .

composition. The pleasure is not much in the *doing* as in the *thinking*, the development, the reflections around a topic.

The following sections highlight some of these ideas and concepts that are not explicitly communicated in the work itself.

### **5.1. Socio-political concept**

I conceived of *Dans le ventre de la machine* as a metaphor for the position of an individual within a community. The piece was composed during a period of fatigue and disillusionment—themes that never interested me before, but it was such a negative energy that I probably wanted to purge myself of it by transposing into sound.

In my previous works, I often tackled mechanical sound from a pragmatic and technical angle by contrasting it with the opaque nature of digital tools. Here, using the same kind of mechanical sound matter, instead, my goal was to address the metaphorical perspective of mechanics: the abstract politico-social machine, one with a capital M, which governs our lives and the socio-cultural machinery of which we are all somehow prisoners. This is why it integrates part of the 1964 *Bodies upon the gears* speech by activist Mario Savio in which, evoking freedom and resistance, he passionately expresses:

There's a time when the operation of the machine becomes so odious, makes you so sick at heart, that you can't take part! You can't even passively take part! And you've got to put your bodies upon the gears and upon the wheels...upon the levers, upon all the apparatus, and you've got to make it stop! And you've got to indicate to the people

who run it, to the people who own it, that unless you're free, the machine will be prevented from working at all! (Savio, 1964)

This Savio's speech found its way into the work also because it animated a good part of my adolescence, opening the piece *No More Nervous Breakdown* by ska-punk-pop band Me, Mom and Morgentaler (1993). I always wanted to make use of this statement that marked such a tumultuous period of my life and it suited the topic I was exploring at the time. This desire to free myself from these dark emotions felt, in fact, close to my behaviour as a teenage rock musician. *Dans le ventre de la machine* is therefore certainly my most personal work, but perhaps paradoxically, the only one displaying a social character, since it addresses the fundamental freedom needed for personal development, a development which is impossible when one feels oppressed within a community.

*Dans le ventre de la machine* also expressed a discomfort regarding my own compositional habits in which I felt imprisoned: I had become accustomed to composing fixed media works, where the acoustic sound is processed, where attention to texture takes precedence over rhythm and improvisation is hardly considered. It was time for me to get away from my own system, my own reflexes in composing sound, which were closely related to music on fixed media.

I translated this malaise into sound by composing areas of torpor, numbness—sometimes waking, and the creation of confined, stuffy spaces. I imagined I was composing the last breaths of a being, analogous with my intention to get away from something in order to make space for a rebirth. *Dans le ventre de la machine* put an end to a cycle of fixed media composition based on manually activated mechanical sound



and a writing of time mainly based on the notion of rupture.

Wishing to remain faithful to using physical mechanisms, I thought initially of building the whole work with the sounds of the intonarumori I had used in my earlier pieces like *boîtes*. and *La chambre des machines*. Having used these mechanisms to create performances, I wanted to get closer to the details of their sounds in a fixed media context, so as to see how the result would differ from that of performance. As I composed, I found that other sounds—mostly feedback created in improvisations—were better able to communicate my condition. As they were conceived in an improvisation session, these sounds also brought me closer to performance, which I actually felt closer to than the fixed media work I was composing. The feedback is, like Savio's speech, another reference to adolescence and the sounds of those punk-indie-rock bands I'd rubbed shoulders with at the time.

Though at the beginning of the project, I had a very precise idea of the material to explore, I had to abandon it in favour of sonic discoveries made mid-stream. As I explained in the previous section, I decided not to limit myself by clinging to my initial ideas, but rather to let myself be carried by encounters that would lead to a more satisfying work.

To sum up, there are a number of elements I used to support the idea of an individual's discomfort within the community: references to adolescence, the use of feedback, which points to punk rock, drawing on the machine as a metaphor for the socio-political system and the integration of live performance, the human body and improvisation to underscore the end of this fixed media cycle. I achieved my objective since the creations that followed were indeed no longer inside the framework of music fixed on a medium.

## 5.2. Community concept

On the conceptual level, the kinetic sculpture *L'usure du clocher* sparks a discourse on the important function of sound in a community.

The work was created in a context that was foreign to me: the work is outdoors in a park located in the heart of Victoriaville, a small town in the province of Québec (Canada) where an important festival takes place every year<sup>27</sup>. I knew that the sculpture would be seen largely by the inhabitants of the town on their daily walk, people who had perhaps never even encountered or heard of contemporary art, whether visual or audible.

Faced with this unusual challenge, my idea was to create a piece that would benefit from the original function of its location: the park as a community space, as a meeting place for citizens. I also wanted to explore a strongly symbolic object, with universal character, that the average person could connect with. A church belfry quickly struck me as the ideal object in this context, because if there is an object that, historically—in occidental countries at least, gives a town its soul, personifying human relationships, it is surely the church belfry, as R. Murray Schafer points out:

The most salient sound signal in the Christian community is the church bell. In a very real sense it defines the community, for the parish is an acoustic space, circumscribed by the range of the church bell. The church bell is a centripetal sound; it attracts and unifies the community in a social sense, just as it draws man and God together. At times in the past it took on a centrifugal force as well, when it served to frighten away evil spirits. (Schafer, 1977, p. 53)

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27 FIMAV: Festival International de Musique Actuelle de Victoriaville.

The belfry acts as an important soundmark<sup>28</sup>, to use a term derived from R. Murray Schafer's theory of acoustic ecology (1977). Inspired by his principles of sound ecology, I wanted first of all to illustrate the deterioration of the sound signals sent out by contemporary belfries. Indeed, owing to high maintenance costs, belfries are increasingly replaced by horn speakers of poor quality. The emphasis thus centered around one of the large acoustic disturbances in rural areas, the arrival of the "*noise of religion*" (Schafer, 1977, p. 49). On a secondary level, there was a more general reflection on the deterioration of sound signals in contemporary life, as well as the constant changes of the spiritual practices welding the social fabric together.

During the installation, I observed both young and old pass by the electrified bell tower. Some did not pay it any attention while others sat on the bench beside it and seemed to fall into long reflections. Some took up discussions on the meaning this unusual tower might hold, to then finish the conversation on more mundane topics. Following these observations, I felt I had reached my goal to participate in the community life of the city.

The impact of this piece does not find itself within the sound composition itself rather than in the particular context in which the sound emerges by means of a specific object. The long versions of the piece uses long drones, which I find fitting in the sense that the work addresses the spiritual and affords reflection and community engagement.

Writing about drones, R. Murray Schafer adds that "The function of the drone has long

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28 "The term soundtrack is derived from landmark and refers to a community sound which is unique or possesses qualities which make it specially regarded or noticed by the people in that community. Once a soundmark has been identified, it deserves to be protected, for soundtracks make the acoustic life of the community unique." (Schafer, 1977, p. 10)

been known in music. It is an anti-intellectual narcotic. It is also a point of focus for meditation, particularly in the East. Man listens differently in the presence of drones, and the importance of this change in perception is becoming evident in the West” (Schafer, 1977, p. 78). Indeed, this type of sound allows listeners to feel carried, wrapped up, and not too assaulted within a work that is nevertheless full of distortion, which is meant to illustrate the degradation of signal. This allows for discussion around the belfry, without being distracted by sound events that are too intrusive.

Since I always try to bridge the gap between conceptual and physical material, this sound composition was constructed using sounds of Victoriaville’s five belfries, which I had recorded beforehand with my stepfather’s help, a Victoriaville citizen deeply involved in the religious community of his municipality.

This is then how this work grew, as part of an effort to communicate with the local community by drawing from the belfry as one of its meaningful symbols. We can conclude that the work achieved its objective due to my choice of writing techniques including investigations of signal degradation as a metaphor of soundmarks and spiritual erosion of beliefs by the use of the drones as a framework conducive to meditation and reflection.

Using the sound of a belfry as a historical element of a community leads us into an examination of *frequencies (a)*, a work specifically discussing the history of the acoustic science community and that of electroacoustic music.

### 5.3. Historical concept

*frequencies (a)* is grounded in my growing interest in the history of acoustic research.

The concept behind the project is the following: since the tuning fork produces a sound close to a sine wave, which is the basis of electronic music, I wanted to compose a work that would take on the character of electronic sound despite its acoustic essence, and thus crossing, as it were, the ages.

Although the acoustic sound of tuning forks produces much of the sound content, I nevertheless had, once again, to change my original conceptual idea mid-project. As a matter of fact, I was not able to obtain the desired musical quality by only using the tuning fork sounds. For instance, the tuning fork can barely provide anything within the sub-bass part of the frequency spectrum<sup>29</sup>, and so I added synthesized sounds to the acoustic ones so to help overcome such problems. But the integration of such sounds do not entirely betray the idea behind the work, which draws its inspiration from the past, in the history of acoustics research. Transforming my original idea actually somehow enhanced the concept itself, since it created a link between the acoustic past and the electronic present in acoustic research. Indeed, the electronic sounds I integrated consist mainly of pure sinusoidal waves and, therefore, they conceptually took their places within the original idea of the composition, since they are also related to the history of early electronic music research.

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29 Physicist Rudolf König likewise already related the same in his *Quelques expériences d'acoustique* (A few acoustic experiments): "I will say in passing that it is extremely difficult to obtain simple very low sounds of a certain intensity."(König, 1882, p. 91)

Historical value is embedded in the object itself—the tuning fork—which acts conceptually as a symbol of centuries of acoustic music. It is likewise a symbol of laboratory research, serving as a scientific research tool in acoustics by 19th century scientists like Jules Lissajous, Ernst Chladni or Hermann von Helmholtz. The Smithsonian National Museum of American History, describes the historical importance of this once-scientific tool:

By the last decades of the 19th century, tuning forks were among the most precise of all scientific instruments. Specialized techniques were developed to use them for measuring different kinds of vibrations, and they were frequently used as high-precision timing standards. Albert Michelson, for example, used light reflected from the vibrating tines of a tuning fork to make his historic measurements of the speed of light. (Smithsonian, 2013)

In the section of the text that explored the visual, I discussed some references to minimalist visual art; here the visual aspect of *frequencies (a)* similarly brings to mind a scientific laboratory, as a sanitized and austere place from which great discoveries emerge. In the economy of visual content, I saw an opportunity to align the conceptual historical-scientific aspect of the project with its final sound aesthetic that exhibited a certain minimalism.

This is thus how the implication of tuning forks and sound synthesis in *frequencies (a)* weaves the fabric between past and present research in the realm of acoustics.

#### 5.4. Material concept

The piece *frequencies (synthetic variations)* certainly uses the most basic idea of interest to a composer working with sound material, that is to say, the sound material itself. The main idea lies in the simple fact of using synthetic sound, a kind of material I was fully exploring for the first time.

Sound material as the root of electroacoustic composition is a well-known concept, but one towards which Michel Chion feels the following reservation: “the concept of ‘material’ is first in line of these more or less reliable companions”<sup>30</sup> (Chion, 2009, p. 31).

Although it could be considered too basic on a conceptual level, in this case, the choice of material was somewhat a radical gesture for me. Not radical compared to the artistic discipline, but in stark contrast to my personal approach: for the first time, I was building my work on sound synthesis. I had until then explored this type of sound only very little, more interested in the personal significance and chaos allowed by microphone recording, following in the tradition of *musique concrète*. I therefore had to address composing in a completely different way.

In this spirit of research, I sought a new form: the composition of small sections whose order can change during the performance, or can be played in random order in a digital listening mode.

Since the idea was to confront my own compositional approach, I also wanted to dig

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<sup>30</sup> “le concept de ‘matériau’ est au premier rang de ces compagnons de travail plus ou moins fiables”. (Translation: T. Hron)

into a kind of presentation I had always stayed away from: laptop performance. For the first time, I conceived a performance without physical action, without gestures, without an object to manipulate, but rather that I shape through sequences triggered on the computer, combining live and fixed music—since sequences are pre-composed. One of the visual aspects of the performance lines up with this aesthetic: the choice of rectangular polymer plates, reminiscent of the computer screen. These ten rectangles are arranged on a large table, as if it covered with laptops, as a symbol both of an imaginary apogee of the laptop performance, as well as of the screen overdose to which those who work with computers today are regularly exposed.

This then sums up how synthetic material is fundamental to *frequencies (synthetic variations)*. We can conclude that research leading away from the habitual compositional reflexes can lead to new ways of approaching creation—for instance in the aleatoric form of the present example, which gives the work an interesting place in my catalog.



## 5.5. Absent concept

*Music for a book* is a book soundtrack, whose composition was built without a conceptual approach per se. It would have been easy to imagine that a soundtrack for a book would be accompanied by a significant conceptual background, yet it is, in this case, the opposite. Certainly, at the beginning of the process, conceptual sketches made the connection between the soundscape and the geographic location of the book's plot, which is Nunavik, a remote area of northern Québec, Canada. The first notes for the composition were the following:

I hear subtle music made from background noise, brightness, whiteness, human steps, and silences. I would like to build bare soundscapes where there is wind, both natural and artificial, a bit of earth, stones, depth and space. Above all, I would like a human presence to be felt. Because humans also hide out in this white desert and tundra with their dramas and their happiness. I want to explore the absence/presence dichotomy in this composition.

In further discussions with the author Marc-André Moutquin, I quickly realized that these initial ideas were but a very romantic vision of Nunavik, far away from the difficult reality of people often living in precarious situations. Despite a few elements of atmosphere or landscape in Moutquin's writing, most of the book draws a down-to-earth portrait of the main character, who

quickly discovers that cultural codes are not the same as in the south. He becomes a stranger in his own country. Confronted unwillingly with violence and family situations where tradition confronts modernity, he cannot come out unmarked by his experience<sup>31</sup> (Moutquin, 2012).

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31 "découvre rapidement que les codes culturels ne sont pas les mêmes qu'au sud. Il devient étranger dans son propre pays. Confronté malgré lui à des actes de violence et des histoires de famille où la tradition confronte la modernité, il ne pourra sortir indemne de son expérience" (Translation: T. Hron)

It is quite clear that there is no question here of silences, whiteness, absence or nature, but rather a hard life carved out of reality in northern Québec natives.

I followed multiple tracks of sonic research to establish a link with the literary work. For example, the approach could have been a composition per chapter or by the use of sounds directly related to the narrative. I might also have used traditional Nunavik songs or relied on the soundscape of the place itself. But by reading Moutquin's literary sketches and listening to initial compositional attempts, it was remarkable that concepts did not seem useful for this type of work. A stage director I worked with said something similar about music for the theater: it either works or it doesn't. Indeed, my most important observation was that for the music to work, I had to put aside all my preconceived ideas. It was important to focus on a single goal, to compose a soundtrack that allows the rhythm of reading to be completely free.

The theater analogy is indeed effective: although the text of a book is not, as it is in theatre, recited aloud, it is, in some ways, recited silently in the reader's mind. Therefore, the sound must accommodate text as if it were being read aloud. It is all too easy for the sonic element to distract reading and take over, and this was the biggest challenge in this composition. Here are some of the observations I had along the way, as they are found in my notebook:

#### Observation n° 1

This comes particularly close to sound work for the theater where the text is primary and the sound must be subordinate to it. Even though here the text is silent, unlike in a play.

The music must be very subtle and shall not disturb.

#### Observation n° 2

Melody doesn't work. As soon as expected musical references surface, the sound distracts the reading.

Observation n° 3

My initial musical intentions are not effective: creating a concrete landscape; eliciting the lightness of childhood.

Observation n° 4

Total abstraction gives a more satisfying result. A kind of cloud of sound atmospheres that passes by without our even noticing. Nothing concrete, just long drones that amplify the reading.

Observation n° 5

Must keep distilling again and again. Even if it seems already so musically bare, to act as the soundtrack to a novel, I must exaggerate even more.

I therefore put all my ideas aside and tried to compose this work in a more pragmatic spirit: I read a few pages while listening to my sonic ideas and hoped to be drawn into reading. As soon as the music distracted me, I returned to the mixing desk to try to purify, reducing the disturbing elements. I never thought about why I used a particular type of sound, I only considered one thing, always returning to the same trivial question: does it work when I read? But without realizing it, this method unconsciously brought me back on the more minimalistic path of the initial aesthetic avenues, towards “bare soundscapes” made up of “background noise, brightness, whiteness.”

*Music for a book* offers an example of sound composition where the conceptual aspect is overshadowed by a pragmatic approach to simultaneous reading and listening. Created in a similar way to music for theater, its composition seeks a discretion that will not hinder reading.

This section highlighted the first material I use when creating a sound work: abstract material. For each work presented in this PhD, I have outlined the main concepts and principles of reasoning behind them. Having considered the conceptual material, the composer must then choose the physical material to engage with, which is the focus of the next sections. We will investigate the nature of the sound material that is found in a dialogue between the acoustic and the electronic material.

## 6. Artificiality

Human communication is an artificial process. It relies on artistic techniques, on inventions, on tools and instruments, that is, on symbols ordered into codes. People do not make themselves understood through “natural” means. (Vilém Flusser)

As is exposed throughout this text, the nature of material has always been an obsession for me. For example, the intention behind *frequencies (a)* is to produce electronic music from the acoustic sound of tuning forks whereas *frequencies (synthetic variations)* uses sound synthesis as its main material. Parts of *Dans le ventre de la machine* and *L'usure du clocher* are composed, in turn, from acoustic sound recordings. In fact, I have, for years, nurtured a rejection of synthesized sound, because recording acoustic sounds was the essential foundation of my interest in the *concrète* tradition of electroacoustic music in the first place.

### 6.1. Authenticity

The contrast between the authenticity of acoustic recording versus sound synthesis has long been part of my discourse. My doorway into fixed media composition was curiously not through music, but rather the work of Pierre Perrault. Author, researcher, poet and Québécois director, Perrault roused my interest in sound recording and its mnemonic potential. A phrase that I once heard in an interview, embedded itself in my memory permanently:

I realized just how valuable a tape recorder could be, to what extent it was a new memory. It extended our memory just like the lens, the telescope or microscope extends our eye. We see beyond what we can see in the human condition.<sup>32</sup> (Perrault, P. in La Veaux, 1999)

This was really my fundamental interest: to record sound reality, to listen back to it without visual distractions, to get closer to it in order to understand it better, to break it apart into its finer particles, in order to file it in an archive in a small tin with a label. It was a way to store traces of reality.

So it seems a natural consequence to have unconsciously opposed the authenticity of acoustic sound recording with the artificiality of synthesized sound. I have come to see increasingly more nuance in the notion of natural and artificial, which led to works such as *frequencies (a)*. This work in some way asks the question: where the boundary between acoustic and electronic material and why is this distinction important? Despite being haunted by this dichotomy for years, my answer seems to lead me to consider the value of this questioning somewhat negligible. Indeed, it now appears to me that this border is permeable and does not even really need to exist. Whether the raw material is electronic or acoustic does not constitute the interest of a work. Previously, I fostered the impression that the acoustic sound obviously led to more interesting, authentic and organic works. I should add that this belief ripened in a historical context where the digital explosion reached a kind of climax in a blind fascination leading to laptop performances and sterile aesthetics.

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32 “Je me suis rendu compte jusqu’à quel point un magnétophone, ça pouvait être précieux, jusqu’à quel point c’était une nouvelle mémoire. Ça prolongeait notre mémoire, comme la lentille, le télescope ou le microscope prolonge notre œil. On voit au-delà de ce que l’on peut voir avec la condition humaine.” (Translation: T. Hron)

Chris Salter also describes this context:

The shift to the laptop as the instrument of electronic sound culture signaled an even more extreme move towards an aesthetics of the digital conditioned by software and hardware. [...] others, excelled in creating musical evocations of precise reduction that occasionally bordered on minimalist fetishism, using the computational formalism of software to generate either crystalline or almost microsonic abstractions that invoked the visual image of sparsely populated, clinical white laboratories or pulsing transformation of techno beat into ambient acoustic field.

(Salter, 2010a, p. 124)

This questioning of the organic and artificial nature of sound thus permeated my work, as witnessed by the works discussed in this text. Through the use of synthetic as well as recorded sound, the later works nevertheless demonstrate how my reflection refined to the point of considering the complementarity rather than segregation of these types of materials.

## **6.2. (Dis)organization**

Aware of fetishism towards the digital mentioned above by Salter, I believed that the acoustic factor could act as a tool to counteract this trend. This was in large part a reaction to many works that were presented to me completely devoid of acoustic elements. Sound recording felt like a way to add a bit of chaos and the unexpected within the total control possible in synthesized composition. But this vision pitting acoustic authenticity against synthetic artificiality needed tempering.

Michel Chion provides such nuance in expressing that the real invents itself and that invention can provide a sense of reality:

Similarly, in sound, the impression of reality is often associated with a sensation of discomfort, signal fluctuation, interference or microphone noises, etc..., effect that naturally can we simulate in the studio [...]<sup>33</sup> (Chion, 1990, p. 93)

This questioning of my own perception of an acoustic/electronic dichotomy led me to pay more attention to the electronic sounds I had ignored for many years, leading to the birth of *frequencies (synthetic variations)*.

Both pieces dealing with electronic sound — *frequencies (a)* and *frequencies (synthetic variations)* — were directly influenced by artists partly responsible for the climax of laptop performance mentioned above. Examples include Alva Noto (2001) or Ryoji Ikeda (2008), who have worked in sound synthesis for a long time. Ikeda is certainly one of the most important influences on my career path, since he was the first to succeed, in his compositional rigor, to convince me of the relevance of electronic sound.

My works mentioned above share certain characteristics with these artists, such as the abundant use of the sine wave and high frequency sounds. But my pieces also considers acoustic sound recording methods, which induce certain composition techniques—like *micro-montage* editing. Thus, even when I use mainly synthesized sounds, I do not necessarily look for the precision that this type of material could provide, but rather a certain chaos that I find in acoustic sound recording. For example, frequency

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33 “De la même façon, pour le son, l'impression de réalisme est souvent liée à une sensation d'inconfort, de fluctuation du signal, de brouillage et de bruits de micro, etc., effet qu'on peut naturellement simuler au studio [...]” (Translation: T. Hron)



perception in my work is not as clear as it is in Noto's and Ikeda's. I arrange frequencies in a denser, more blurred, more chaotic sonic mass. Thus, in *frequencies (a)*, the acoustic sound of the motors finds itself in the company of sine waves and adds an aleatoric uncontrollability to the sound result, since the motors never behave exactly in the same way. We also feel the baggage of *musique concrète*, of a writing with sometimes abrupt articulations, which is not the case with Ikeda or Noto, who most often use a technique of accumulation.

In exploring the acoustic and electronic nature of sound material at the heart of my works, we determined the historical context from which this reflection derives. The idea evolved into an artistic proposition making use of the organic and of the precision abilities of the acoustic and the digital matter. This more nuanced reflection led to the conception of works that are more balanced in their use of materials.

## 7. Physicality

I discussed the acoustic/electronic dichotomy of the raw material and how acoustic sound recording offered an alternative to the electronic sounds I used to consider austere. This perception not only covered the raw material itself, but also how to interact it, which leads us directly to investigating the mechanical handling of digital material.

### 7.1. Friction

For me, the use of mechanical material is a way to force contact between two materials: as opposed to sound generated by computer where there is no physical contact with the material. Antoine Picon, a professor of the history of architecture and technologies, explains this phenomenon in an interview with Ruth Scheps, author of *L'empire des techniques* (The empire of techniques):

It is mainly from the seventeenth century onwards that the West is really interested in the elimination of friction. Earlier, one could simply call friction a kind of universal fatality: machines rubbed because they were imperfect. Only the stars could move with neither friction nor wear!<sup>34</sup> (Picon, A. in Scheps, Paris, p. 26)

I exploit such contact with the machine, with mechanics, by using motors that rub in *frequencies (a)* and *L'usure du clocher*, but it is even more important in the composition *Dans le ventre de la machine*. With its acoustic material taken from a

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<sup>34</sup> "C'est surtout à partir du XVIIe siècle que l'Occident s'est vraiment intéressé à l'élimination du frottement. Auparavant, on peut dire que le frottement relevait presque d'une fatalité universelle : les machines frotaient, car elles étaient imparfaites. Seuls les astres pouvaient se mouvoir sans frottement ni usure!" (Translation: T. Hron)

mechanical machine activated by a human body, we recognize a lot of friction, noise and imperfections. The machine used to generate the sound is extremely basic: a few levers, springs, bits of wood. Thus it is a simple machine, a technology “as old as the species homo sapiens” (Flusser, 1999, p. 19), which must be activated by humans and which is connected in this case with sophisticated digital technology.

## 7.2. Humanity

This is perhaps the main reason for my bias in favour of manual mechanics: to make explicit the fact that behind these sound works with abstract textures, behind those computer-based compositions, there is human flesh and bone that may not necessarily work as flawlessly as the computer can. In the previous section, I mentioned Alva Noto as an influence, despite the fact that his approach is in some ways opposite to mine, which is corroborated in an interview for the magazine *Slice* :

I always wanted to show that it's computer music. I wanted to show what a computer can do, what a synthesizer can't do, for example. I also wanted to demonstrate this digitalization, the fact that it is all data was always important to me. (Nicolai, Carsten in Wick, 2009)

My own is rather the antithesis of this approach, since I want to feel that the proposition is *not* created by a computer, but by a human. This approach is closer to the hybridity that we will find for example in Björk, of whom David Brackett relates that

She also self-consciously mixes the “natural” and the “technological,” making the “natural sound” artificial and “mechanical,” while making the “technological” sound spontaneous and vibrant without resolving these antinomies in an organized or textually consistent manner. (Brackett, 2001, p. 218)

We then see how mechanical manipulation forms the fundamental aesthetic elements of the works and that the cohabitation of mechanical and digital manipulation helps to create traces of humanity within them.

## **8. Impurity**

Relationships with objects and electronic, mechanical, digital and acoustic material point to the main aesthetic element that can invariably be found in my work: the use of impurity. I use it at every level: in the sound recording and its processing as much as in the repurposing of flaws caused by the tools themselves.

### **8.1. Noise**

I have never paid particular importance to the quality of capture as one of my compositional prerequisites. This is largely the result of my limited freelance artist resources, but also because I am interested in using the defects and unexpected characteristics of sonic events. This seems a natural reflex for many composers of all kinds of aesthetic horizons: from the many punk and alternative groups that put out albums recorded in modest circumstances whose—lack of—sound quality was an integral part of their musical aura, to dub, which reintegrated studio recordings by transforming them to the point of unrecognizability. Other examples include Tristan Perich (*1-Bit Symphony*, 2010), who made 1-bit sound the main recurring element in his compositions, or else the electronic music group Oval (*Oval Process*, 2000), the example most often cited for the use of the glitch and the digital defect as compositional material. In electroacoustic music, I refer to Michel Chion, who points to the influence of Pierre Henry and François Bayle:

Spontaneously, in my first *concrète* works, influenced moreover by Pierre Henry and François Bayle, I kept, even welcomed the ‘media artifacts’: breath, splicing artifacts, microphone noise — anything that transmitted the sound of a struggle against limitations that are not quite overcome, but without which things might dissolve. I did this instinctively at first, from an expressionist inclination.<sup>35</sup> (Chion, 1993, p. 162)

As evoked in the previous sections, this reaction must have developed in response to the clean sound of works proliferated in the electronic arts festivals. A similar kind of reaction to ambient works also seems to animate Chion’s discourse:

the exclusion of certain traits to avoid such as ‘defects’: background noise, hiss, distortions, saturations, and especially the sound of editing; in short, anything that reminds us that the sound is mediated, inscribed on a medium that contains and imposes its limits. With few exceptions, therefore, most current *musique concrète* continues in its aesthetic to avoid giving the impression that the sound is fixed and as if captive in the space of its affixing.<sup>36</sup>  
(Chion, 1993, p. 161)

With the advent of the computer and of digital resources, the game finally turned around. Indeed, the use of the technical defects of media is now ubiquitous, becoming an important part of sound art production as Caleb Kelly affirms:

This “noising up” of the digital was part of the noisy project of twentieth-century experimental music, as glitch music combined the “clean” world of the digital with a “dirty,” detritus-driven sound that switched the rations of signal to noise in the realm of digital production. (Kelly, 2009, p. 8)

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35 “Spontanément, dans mes premières musiques concrètes, sous l’influence d’ailleurs de Pierre Henry et de François Bayle, j’ai conservé, voire accusé les « effets de support », souffle, effets de collure, bruit de micro – tout ce qui fait sentir le son comme luttant contre des limites dont il n’est pas totalement dégagé, mais hors desquelles peut-être il se dissoudrait. J’ai fait d’abord cela instinctivement, dans une volonté expressionniste.” (Translation: T. Hron)

36 “la proscription de certains traits qui seraient à éviter comme des « défauts » : le bruit de fond, le souffle, les distorsions, les saturations, et surtout les effets de montage audibles ; bref, tout ce qui rappelle que le son est médiatisé, inscrit sur un support qui le contient et lui impose ses limites. À quelques exceptions près, donc, la plupart des musiques concrètes actuelles continuent dans leur esthétique à éviter de donner le sentiment que le son est fixé et comme enfermé dans le champ de sa fixation.” (Translation: T. Hron)

The sound recordings for *Dans le ventre de la machine* were made with piezoelectric microphones of poor quality. This is perhaps why my works often have blurred or imprecise timbral colours. But it seems possible to get around this low basic fidelity to create works that do reveal certain qualities.

One of the techniques that helps to bypass low fidelity recordings is an appropriate use of filters. An evolution in frequency can indeed give the illusion of a controlled and acceptable sound quality. For example, if a poor sound in the medium-low range is followed by a poor high sound and then returns to the medium, the dynamic of the timbres and the agility with which they are articulated in the discourse distract the listener from thinking about the sound quality. Another trick is to distort, to dirty a sound even more than it already is, which is repeatedly done in *Dans le ventre de la machine*.

Media effects such as breath noise, as mentioned above by Chion, are also used. Rather than try to erase it, this breath is often placed in the forefront in the mix. Thus articulated, it becomes a living matter, as we can clearly hear between 7:15 and 8:50. There is a similar kind of compositional process composition that places background noise in the foreground in *Music for a Book*.

## 8.2. Rupture

I liberally make use of this interplay between pure and impure while editing or playing with dynamic differences to create clear ruptures and eliminate smoothness, which is one of my main writing techniques. This certainly comes directly from the influence of both the Québécois composer Gilles Gobeil, who made this technique his trademark, and my past as a drummer in progressive influenced rock bands. I also cite the influences of groups such as The Dillinger Escape Plan (*Miss Machine*, 2004), Dinosaur Jr. (*Where You Been*, 1993), Fantômas (*Fantômas*, 1999), Genghis Tron (*Dead Mountain Mouth*, 2006), King Crimson (*Thrak*, 1995), Godspeed You! Black Emperor (*F# A# ∞*, 1997), Mogwai (*Young Team*, 1997), NOFX (*Punk in Drublic*, 1994) and Radiohead (*OK Computer*, 1997), who, despite their divergent aesthetics, have a common approach to dynamics and an aesthetic based on clean breaks. It might seem strange to point to rock influences in the creation of experimental electronic sound art, but they are nonetheless genuine, and especially evident in the editing and the way to sequence events. These influences are even more concrete in *frequencies (synthetic variations)*, whose rhythm finds its genesis from one of my favourite songs: *Panasonic Youth* (2004) by mathcore group The Dillinger Escape Plan.

It is therefore possible to establish a link between rock music and *musique concrète*, which explain why *musique concrète* attracted me so quickly. According to the composer Iannis Xenakis, the legacy of the “rupture” technique in *musique concrète* comes from the finite nature of recorded sound used by composers of that tradition:

Most of the *musique concrète* which had been produced up to the time of *Concret HP* is full of many abrupt changes and juxtaposed



sections without transitions. This happened because the original recorded sounds used by the composers consisted of a block of one kind of sound, then a block of another, and did not extend beyond this. (Xenakis, Iannis in Roads, 2004, p. 64)

This compositional technique appears in other influences of mine such as in the work of the Swiss noise artist Francisco Meirino (Phroq, 2008) or even Francisco Lopez (Lopez, 2002)—who does not work with rupture as such, but with dynamic variations over time. On the other hand, it is important to find the right balance in applying an editing technique that creates surprise through dynamic contrast. Caleb Kelly, in his book *Cracked Media*, draws limits for its use:

The practice of cracked media can also be heard as deliberately playing on the expectations of an audience for music, unexpectedly throwing them into noise. This noise might well blast them out of the comfort of a safe musical performance. This tactic can only work a small number of times, however, before an audience comes to expect the blast of sound or the noisy destruction of musical instruments. (Kelly, 2009, p. 80)

*Dans le ventre de la machine* offers a good example between 3:26 and 10:10, where waveforms approaching a sinusoid are juxtaposed with noisy, sometimes interrupted materials (5:15, 5:43, 7:00) that are sometimes exacerbated (5:35, 5:46) until they reach a plateau of intensity (5:52, 9:30, 10:10). I have routinely used this technique in my discourse since playing in rock bands, although I periodically try to break away from my compositional reflexes as discussed in this text. But it seems this reflex is so deeply embedded that I can not abandon it. For example, even when making “ambient” works where I try to create a certain stasis, I continue to play with clean cuts and changes in range, a direct legacy of *musique concrète*. The piece *frequencies (a / fragments)* (2013b) is one such example, a work for fixed media based on the same device as *frequencies (a)*.

An effort to break these reflexes set me on the path of purity in exploring pure rather than rich sound, electronic rather than acoustic sources, as well as digital rather than mechanical processing. For example, the sanitized laboratory aesthetic of *frequencies (a)* was mentioned earlier. Although this work plays with elements of purity, they are always in dialogue with impure elements, which, in my opinion, gives meaning to purity—because without impurity, purity cannot be as well perceived. In this work, I took advantage of my obsession with games of dynamic range in placing the sinusoidal sound of a tuning fork in counterpoint with an accumulation of tuning fork sounds, which intermingled with the sound of the motors to produce a mass effect. The clear cut edit has is two-sided, one of writing precision laced with the destabilizing sensation created by chaotic and imprecise phenomena. In an article looking back on *frequencies (a)* at the Elektra festival in Montreal in May 2013, a commentator fairly observed that “It is rare that a live performance can be both precise and so gloriously messy” (Smith, 2013). Curtis Roads similarly advocates a balance between purity, precision and its opposite:

Digital sound synthesis techniques inhabit a virtual world more pure and precise than the physical world, and purity and precision have an undeniable charm in music. [...] the overuse of precision and purity can lead to sterile music. (Roads, 2004, p. 86)

It is clear then, that the use of clean cuts based on rupture, along with dynamic differences, constitute important aesthetic elements of my compositional discourse. I make use of these techniques to impart both a sense of precision and purity as much as disruption, surprise and impurity. We have seen how these writing techniques derive mainly from the influence of rock music, which brings a certain aggressiveness to my sound compositions.

### 8.3. Post-Glitch

The desire for accuracy and purity satisfied by digital tools has been hijacked by artists: glitch, broken hard drives and unusual translations of data lead to what Kim Cascone terms *The Aesthetic of Failure* (2000). In line with what Chion (who was dealing with the analogue world) stated above, he suggests that:

While technological failure is often controlled and suppressed—its effects buried beneath the threshold of perception—most audio tools can zoom in on the errors, allowing composers to make them the focus of their work. (Cascone, 2000, p. 13)

But contrary to what Cascone proposes, it seems that glitch did not emerge with the arrival of digital, but with the advent of electricity. Since then, scientists and artists have been making good use of materials that could per se be considered errors. Birgit Schneider reported the use of glitch as early as 1929, as indicated in the *Berliner Zeitung*. It is possible to go back to that date to find one of the first displays of glitch in media:

Some radio listeners will have noticed a loud crackling in their speakers outside the official broadcast hours; its pitch fluctuated up and down and it sounded like the noise produced by alternating current. These mysterious signs represent the first practical experiments with television based on the Mihaly system, which the Reichspost [German post office; B. S.] conducted as quietly as possible. (Quoting the *Berliner Zeitung*, Schneider, 2010, p. 178)

We find another example of pre-digital glitch music in the film *Rythmetic* by Canadian Norman McLaren (1956), whose technique was based on inscribing the soundtrack directly on the film negative.

Although glitch has been used for a long time, it remains that the “mistakes” of the digital world brought us some of the most pure and accurate music at the turn of the 90s —notable examples included the work of Alva Noto, Ryoji Ikeda, or Oval, figureheads of this tangent. Despite my reluctance faced with digital purity, these artists and their methods had a significant influence. My choice of sine waves in *frequencies (a)* is an obvious example, but there are also important explorations of glitch in *L'usure du clocher*<sup>37</sup>.

In his book *Error: Glitch, Noise, and Jam in New Media*, Mark Nunes talks about the error that sharpens our critical thinking: “Given the growing dominance of this ideology of informatic control, error provides us with an important critical lens for understanding what it means to live within a network society” (2010). Nunes’ idea is one of many elements that have made glitch an important factor for a fringe of electronic music. However, my own use of the glitch is not of the kind put forward by Nunes: glitch did not appear in writing with the advent of digital and networking as is the case for the previous generation of artists who promoted it. Even before working with sound, I encountered this type of material as a listener, since it was quickly integrated and became common as a percussive element or texture. This points to a post-glitch generation of artists, arriving after the first wave of glitch-based works, who used glitch not as a novelty or singularity but as a common artifact. For this generation, glitch is not considered a dysfunction, an error or a flaw, but rather a material like any other. Caleb Kelly agrees: “These sounds are now simply another part of the sound

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<sup>37</sup> More precisely, in the shorter version. In fact, two versions of the sound material exist: a short, more articulated version, which was presented at the premiere and a second long version, in an ambient style, used for the second presentation in the Montreal subway for the Art Souterrain 2011 event.

palette of the digital producer” (Kelly, 2009, p. 10). However, the fact that glitch is now a common material does not, in my opinion, make it any less interesting a material. It complements the existing palette.

At the perceptual level, this glitch material in fact emerges as distorted material reminiscent of my rock past discussed above. This is perhaps why this material seems to fit so naturally in my sound writing.

So we see how glitch, much like the abrupt editing discussed in the previous section, reveals a dual nature: on the one hand it represents impurity since it originates in error and on the other, purity, since it was exploited by artists with an aesthetic of specificity, such as Alva Noto or Ryoji Ikeda. In my compositions, glitch is neither symbol of impurity or error but rather its own sound material, whether percussive or droning.

## **9. Summary of Part Two**

This second part reviewed the main aesthetic components of the works submitted for my doctoral thesis. I explored these aesthetics through the materials that act as the anchor of my compositional method. Indeed, the sound material emerges from the physical matter of the objects discussed in the first part of this text, as well as from conceptual ideas which I consider abstract materials as important as the sound since they contribute equally in pushing the boundaries of the research-creation process. Nevertheless, a concept is not a sound, it is not a material, neither is it the work, but it can be a generator. Its inclusion in the work is completely transparent, an invisible matter in the eyes of the receiver. It is also fundamental that a concept should not obstruct the aesthetic purpose of the project and must always adapt to achieve a satisfactory work not only on the conceptual but also plastic level.

We have seen that my work is at the edges of physical, digital, artificial, impure and several other factors with porous boundaries. These are not used from established positions, but with a spirit that navigates a blurry terrain, borrowing from extremes when they meet the aesthetic needs.

## CONCLUSION

This text explores the main concerns addressed within five sound works submitted as a doctoral thesis, more specifically in terms of their relationship with the physical object.

This approach obviously gives special importance to the physical object. It flows from the composer's particular attachment to physical matter itself, to the material world that surrounds him and leads him to collect, collate and organize objects. These are used as sound sources as well as instruments to manipulate in the context of performance and as significant visual elements onstage.

Furthermore, these objects are at the heart of an approach based on a fundamental conceptual reflection about the creative process. We see that such concepts come in various types, whether based on socio-cultural, community-based, historical ideas or simply a utilitarian sense of a specific sound material. We also note that despite the importance given to the concept, it tends to always dissipate during the research-creation process in order to give free reign to the ideas that emerge unexpectedly during that process.

Lastly, we address the alignment of abstract material with the physical material of the objects, from which emerge the sound materials of the composition. A series of dichotomies that capture my main aesthetic concerns create a framework to present

these sound materials: acoustic and electronic, mechanical and digital, pure and impure. These elements have always been at the heart of my reflection on the importance that contemporary ambient discourse places on these sound properties. My efforts spontaneously engaged with these themes, and I was immersed despite myself at the center of these discussions, ultimately asking the following questions: Are these subjects more important to consider than others? Do they determine the quality of the works? My answers to these questions is “no”, because these elements can be used synthetically at the heart of a discourse that establishes a balance between various elements. This is my goal, which permeates the documents submitted in this dissertation.

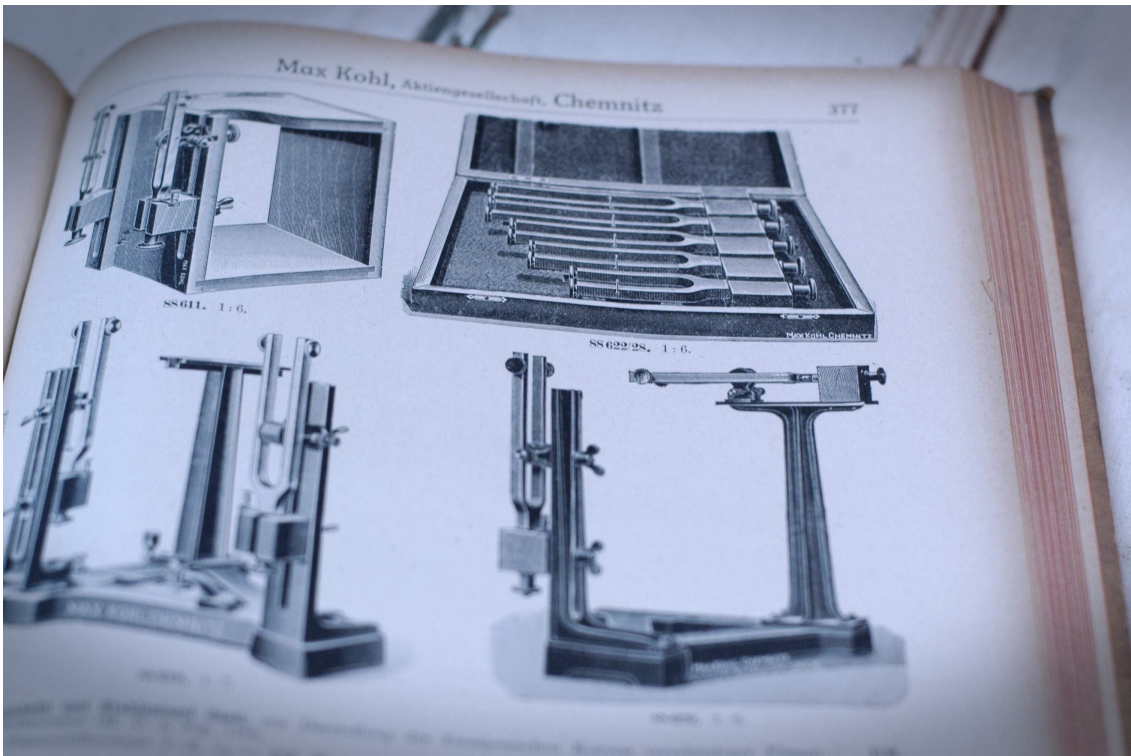
The period of research covered sow the seeds for future research that will continue to deepen the links between concepts and the objects, digital, mechanical means, and sonic and visual arts.

To create these links, one of the richest sources I see is the exploration of scientific heritage. In our time, driven by possibilities created digitally, inventions are abundant, and the looking at the past, to eras when technical invention was thriving, seems a rich and fertile ground for nurturing creative research. For example, consider the work of physicists and acousticians who advanced the field of acoustics such as Ernst Chladni (1827-1756) and Karl Rudolph Koenig (1801-1932), as well as scientific instruments produced by the German company Max Kohl Chemnitz. The latter was one of the largest manufacturers of scientific instruments at the beginning of the twentieth century. Browsing through the pages of catalogs from that time, I am continually amazed by the

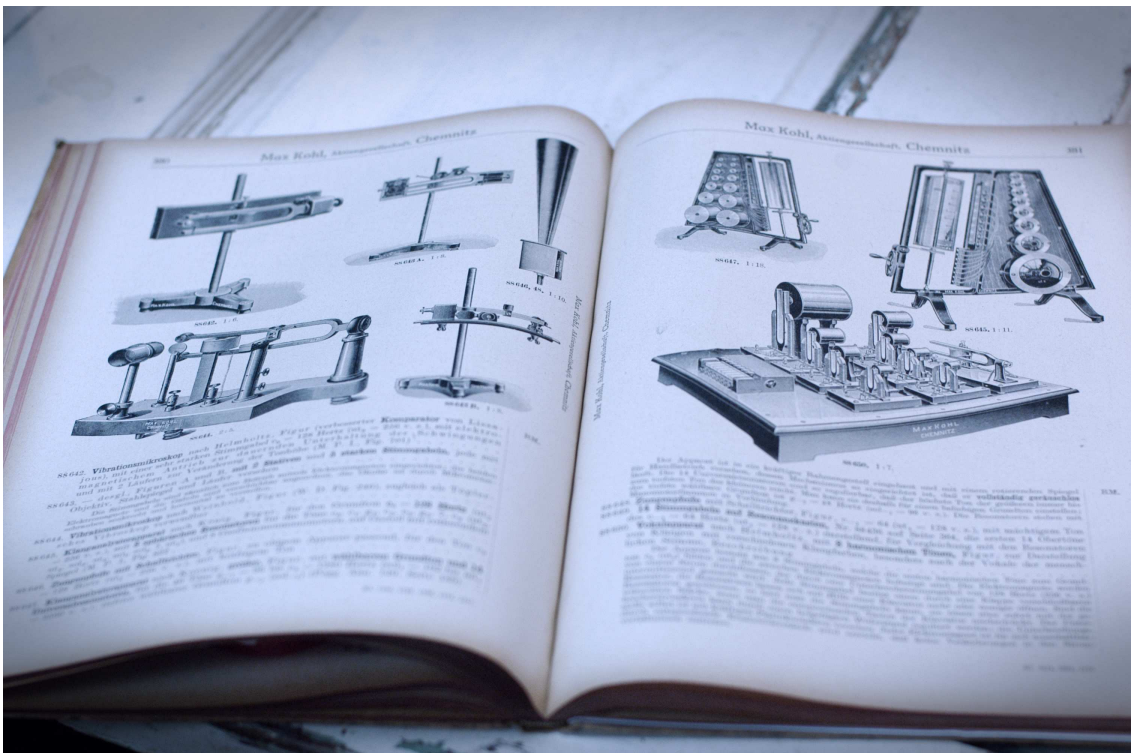


aesthetic beauty and technical ingenuity of these devices and I feel a powerful source of inspiration for making instruments and performing works today. Such an inspirational avenue presented itself in the research on tuning forks for *frequencies (a)*. In fact, the various scientific instruments built with tuning forks by Rudolph Koenig and Max Kohl Chemnitz were an important part of the creative inspiration. For *frequencies (synthetic variations)*, it was the oscillators and the early works of composer Karlheinz Stockhausen.

There is also, however, an abundant source of inspiration in front of all the material produced in the past. As I write this, I am at the end of a residency at the Historical scientific instruments collection at the University of Rennes 1 (Figure 10.1-4 ), where I have started working with Koenig's original tuning forks, including a rare copy of a fork at 32 Hertz. The premise that is explored in this new work is a deeper utilization of scientific heritage in the creation of new works and new instruments that draw not only from inventions in the digital world, but from those of the mechanical era and which continue to explore the dichotomies discussed in this text.



**Fig. 10.1** Working with the scientific instrument collection of the Université Rennes 1, France .  
Photo : Nicolas Bernier © 2013.



**Fig. 10.2** One of Rudolph Koenig's rare "large tuning forks" of the scientific instrument collection of the Université Rennes 1. Photo : Nicolas Bernier © 2013.



**Fig. 10.3** Source of inspiration: scientific instrument catalog from the Max Kohl, Chemnitz company. (Max Kohl A.G, 1919) Photo : Nicolas Bernier © 2013.



**Fig. 10.4** Source of inspiration: scientific instrument catalog from the Max Kohl, Chemnitz company. (Max Kohl A.G, 1919) Photo : Nicolas Bernier © 2013.

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## SUBMITTED WORKS

### On Data DVD-R

- *L'usure du clocher* (2011, installation, variable length)
  - 1 documentation video file (gallery shooting), Quicktime H264, 1 minute
  - 1 live documentation video file (outside shooting), Quicktime H264, 1 minute
  - 1 AIF audio file, 24bit 44100 khz, 38 minutes version
  - 1 AIF audio file, 24bit 44100 khz, 5 minutes version[Note: these files are a reduction of the piece that should be experienced live]
- *frequencies (a)* (2012, performance, variable length)
  - 1 documentation video file, Quicktime H264, 5 minutes
  - 1 AIF audio file, 24bit 44100 khz, recorded live at Electric Spring Festival 2013, University of Huddersfield, 21 minutes[Note: these files are a reduction of the piece that should be experienced live]
- *frequencies (synthetic variations)* (2013, performance, variable length)
  - 15 AIF audio files, 24bit 44100 khz, 25 minutes[Note: this composition is designed to be listened to on random mode]
- *Music for a Book* (2012, soundtrack fixed on media, 43 minutes)
  - 7 AIF audio files, 24bit 44100 khz, 43 minutes[Note: this composition is designed to be listened to while reading a book]
- *Dans le ventre de la machine* (2011, sound fixed on media, 11 minutes)
  - 1 AIF audio file, 24bit 44100khz, 11 minutes

## ANNEXED WORKS

### On Data DVD-R

- *frequencies (a / fragments)* (2013, sound fixed on media, 33 minutes)  
1 AIF audio file, 24bit 44100 khz, 33 minutes
- *boîte.* (2008, performance, variable length)  
1 documentation video file, Quicktime H264, 2 minutes  
[Note: this file is a reduction of the piece that should be experienced live]
- *La chambre des machines* (2010, performance, 27 minutes)  
1 documentation video file, Quicktime H264, 3 minutes  
Co-composed with Martin Messier  
[Note: this file is a reduction of the piece that should be experienced live]

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