

The Ondes Martenot Network in the  
Twenty-First Century:  
The Co-Construction of the  
Ondes Martenot and its Users

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# ACADEMIC INTEGRITY

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# Abstract

The Ondes Martenot has typically been described in academic literature as an obsolete relic of electronic music history. Most sources providing an overview of the history of electronic music or electronic music instruments portray the Ondes Martenot as one of many technical novelties created during the Interbellum's technology boom, and little more. Invented in the 1920s, the instrument has indeed enjoyed periods of relative success as well as obscurity. Yet, the Ondes Martenot has in recent years gained significant visibility in areas of classical, film and popular music. This thesis delves deeper into the processes behind this uptake, and to do so has explored the history of music instruments through approaches in Science and Technology Studies (STS). After uncovering a social network of users actively involved in securing its future, this thesis applies concepts from the Social Construction of Technology (SCOT) and Actor-Network Theory (ANT) analysing the relationship between the users and the instrument. Interviews with a range of user groups, from players and teachers to makers, repairers and researchers in the two main hubs of activity, Paris and Montreal, provide invaluable qualitative data that informs the bulk of the study. This thesis asserts, firstly, that the Ondes Martenot was never an obsolete instrument, and has entered the twenty-first century as a relatively stable technology. New user groups, technological advancements, the continuing expansion of the repertoire and professional Ondes Martenot teachers continue to strengthen the instrument's network and secure its survival. Secondly, that an analysis of the Ondes Martenot network demonstrates the co-construction of users and technology. Users are heavily involved in the maintenance of the network, which shapes the instrument, and they are shaped by it in return. And thirdly, that concepts from SCOT and ANT can be combined to analyse the stabilisation of the Ondes Martenot network as it constructs an ever-shifting shared meaning of the instrument.

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# Chapter 1: Introduction

## 1.1 Justification

Upon publication of this thesis, it has most likely been exactly 100 years since the Ondes Martenot was invented, as reports indicate that inventor Maurice Martenot (1898-1980) completed a first prototype in 1919.<sup>12</sup> Since then, the instrument and its users have undergone many changes and overcome even more challenges. Over the years it gradually solidified into an electronic instrument with a volume button, moving keyboard, a ribbon controller for glissandi, a selection of timbres and a set of resonating loudspeakers. Previously using lamps (valves), it became a transistorised instrument in the 1970s. Its musical context has also changed considerably. In its early days, it was conveyed as a classical instrument, at home in orchestras and ensembles. In the 1940s, it could be found in conservatories around France and the variété orchestra of the Folies-Bergères in Paris. In the 1950s and '60s, it could be heard in British film and television soundtracks. In the 1970s, it played a significant role in the French spectralist movement and in two prominent Canadian rock bands. In the 1980s, it was used in a number of Hollywood films. Although the 1990s were a quiet period, renowned French composer Olivier Messiaen's death saw a renewed interest in live performances of his oeuvre, including those using the Ondes Martenot. From this entire period, only the first few decades have been acknowledged in academic literature. Sources tend to provide the reader with a brief overview of the instrument's features, a comparison to other instruments, and a few French composers.

More recent activity around the instrument has largely passed under the radar. Radiohead band member Jonny Greenwood has brought significant visibility to the instrument through his use of it on every Radiohead album since *Kid A* (2000), in his classical compositions, and in a variety of film scores.<sup>3</sup> He also commissioned British synthesizer manufacturer Analogue Systems to build an Ondes Martenot-

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<sup>1</sup> Jeanne Loriol, *Technique de l'onde électronique type Martenot*, vol. I (Paris: Alphonse Leduc, 1987), p. VI.

<sup>2</sup> A glossary of Ondes Martenot and Ondes Martenot-style models can be found in appendix C.

<sup>3</sup> Radiohead, *Kid A* (Parlophone, 2000).

inspired controller: The French Connection, first released in 2000. Also in the early 2000s, engineer Ambro Oliva designed and manufactured the Ondéa, continuing the legacy of the late Martenot by selling mostly to professional users whose instruments had become irreparable over time. Meanwhile, in Canada, another engineer called Jean Landry started to explore ways to build digital replacement components for old Ondes Martenots. The Ondéa stopped being manufactured in 2011, by which point a Parisian instrument repairer called Jean-Loup Dierstein had finished building his first Ondes Musicales, a near replica of Martenot's latest model. As it was now commercially available, albeit very expensive, a wider variety of customers was able to invest in an instrument of their own, including amateurs. In the same year, a full-length documentary by Canadian filmmaker Caroline Martel was rumoured to be in production, which was later released in 2012.<sup>4</sup>

The recent strides the instrument has made towards securing a stable future are in stark contrast with the instrument portrayed in academic literature: an obsolete relic of early electronic music history. Evidence of these recent advancements was only found via websites of users and through word of mouth. An academic study of the Ondes Martenot had not yet been attempted. Therefore, this study will capture the recent changes in the instrument's trajectory, in order to supplement previous accounts lacking in context.

## 1.2 Thesis aims

This thesis aims to study the instrument and its recent context of use in the twenty-first century. In doing so, it aims to achieve three things. Firstly, the thesis aims to map out the instrument's active network today. As mentioned above, many people are actively involved in the recent changes, and mapping out who they are and what their relationship is with the instrument as well as other users gives insight into what the Ondes Martenot means today. Secondly, it aims to reveal the forces at work to sustain this activity and secure the future of the instrument. The instrument's position as a technology in between failure and success is fascinating, and there is a unique opportunity to study not just how an instrument came to be a success, but

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<sup>4</sup> *Le Chant des Ondes*, dir. by Caroline Martel (NFB Canada, 2012).

how an instrument can become a success, and which challenges it faces on the way. Finally, it aims to study the user-instrument relationship as embedded in this context of use. Users' insights into their relationship with the instrument, their experiences, motivations and frustrations, can reveal how users are influenced and changed by this relationship, and how they in turn influence the development and trajectory of the instrument.

### 1.3 Methodology

The focus on the instrument's context of use is relatively new in Western organology, and musicology as a whole.<sup>5</sup> For electronic instruments in particular, studies that incorporate this focus are rare, and it is here that the field of Science and Technology Studies has contributed useful approaches.

To achieve the above aims, this thesis applies a Science and Technology Studies approach. STS as a discipline studies technologies in their social contexts. Studying musical instruments with STS is relatively new, but as instruments are in themselves complex technologies, this method can be seen as an extension of traditional organology, in the same vein as ethnomusicological studies of instruments approach organology through an ethnological lens. Two approaches (or 'schools') under the STS umbrella are the Social Construction of Technology (SCOT) and Actor-Network Theory (ANT). I will be borrowing concepts from both to study the Ondes Martenot's context of use.

The most well-known SCOT study into musical instruments is Pinch and Trocco's 2002 book *Analog Days*, which asked the question why the Moog synthesizer became the dominant commercial synthesizer over Don Buchla's design.<sup>6</sup> The study involved interviews with users such as makers, players and sellers to construct the invention, development and eventual success of the

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<sup>5</sup> As Duckles and Libin write in the *Grove* article on Musicology under '6(i) Organology': 'ethnomusicologists have tended to subordinate a purely object-orientated approach to a broader consideration of instruments' musical and social context. Only in the last few decades have other disciplines in musicology started to focus more on context, often adopting ethnomethodological approaches to do so.' Vincent Duckles and Laurence Libin, 'Musicology', *Grove Music Online* (2001) para. 'Organology' <<https://doi.org/10.1093/gmo/9781561592630.article.46710>> [last accessed 10 December 2018].

<sup>6</sup> Trevor Pinch and Frank Trocco, *Analog Days: The Invention and Impact of the Moog Synthesizer* (Cambridge, MA: Harvard University Press, 2002).

synthesizer. The result is a complex, messy, non-linear history with dead ends and unforeseen outcomes; the opposite of approaches in electronic music histories, which are predominantly reductive and deterministic. As this is also true for previous sources on the Ondes Martenot, this instrument in particular benefits from such an approach. Additionally, it is a technology that is still in development; its future is still uncertain, as it has not yet reached the stage of mass-production. To study its context of use means to delve into the reasons why it is in such a position. The most well-known ANT study of a musical instrument is Eliot Bates' study on the saz.<sup>7</sup> The study highlights the complex network of actors that impact the saz, and demonstrates how the saz impacts its actors in return. As ANT is a semiotic approach, the study shows how the instrument's meaning is continually constructed from these interactions between actors.

As users' insights are central to the study of the instrument's network and trajectory, the data required for this project are empirical, and more specifically, qualitative, in nature. Semi-structured interviews were used to gather data, as they provide space for users to explain their relationship with the instrument, as well as share their behaviours and experiences with regards to the roles they have (e.g. player, maker, repairer). They also allow for the interviewer to ask follow-up questions. Participants were selected using the snowballing method, where participants suggest other potential participants they know that may be of interest to the project. This approach is useful in a niche area such as that of the Ondes Martenot, and it can be revealing with regards to relationships between actors and the overall network structure. A total of ten participants with varying roles in the network was selected from the two most prominent hubs of Ondes Martenot activity. After transcribing the interviews, which were each roughly between one and three hours long, thematic analysis was used to code and analyse the interviews according to common themes. The findings were then interpreted according to the aims of the study. The interview transcripts can be found in appendices E to M.

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<sup>7</sup> Eliot Bates, 'The social life of musical instruments', *Ethnomusicology*, 56.3 (2012), 363-395.

## 1.4 Research questions

This thesis asks the following questions:

- What happens to an instrument that never reached the mass-manufacturing stage before its inventor died but never sank into obsolescence either?
- What is the Ondes Martenot? How established is the Ondes Martenot as a technology? Has a core instrument been established, or is it still being redefined?
- What are the reasons behind the recent changes in the network of the Ondes Martenot? Who and what impacts the continuing existence of the instrument?
- Who are its users, and what is the nature of their roles? What are their experiences, motivations and frustrations?
- How do the users maintain its existence, and how do they see its future, and their own?
- How are the users influenced by the instrument, and how do they, in turn, shape it?
- How can approaches from Science and Technology Studies contribute to the new context-focused direction the field of organology is taking?

## 1.5 Structure of the thesis

In Chapter 1: Introduction, the project is introduced. The justification for the project is explained, after which the aims are clarified. Then follows a brief overview of the methodology to achieve the aims. After the list of research questions, the structure of the thesis is outlined.

Chapter 2: An Illustrative History of the Ondes Martenot provides a useful historical backdrop to the main focus of the study, which is on recent events. The chapter draws on a few key sources, all in French, which have outlined the history of the instrument in more detail. This chapter does not aim to provide a comprehensive historical account, but rather, aims to demonstrate the non-linear trajectory the instrument has taken as driven by socio-technical forces. The moments chosen serve as background information to the chapters to come, and as an illustration of what a

context-rich history of the instrument could look like.

Chapter 3: Review of Existing Literature reviews what has been written about the Ondes Martenot to date, and why it has been written in this way. Focusing on academic sources first, it demonstrates the historiographical trends in electronic musical instrument writing. To contrast these, a review of sources produced by users follows.

Chapter 4: Methodology outlines, firstly, the conceptual frameworks selected for this study, and the reasoning behind this. It provides background on the recent trends in organology, and the interdisciplinary nature of these approaches, before demonstrating the relevance of the chosen frameworks for this thesis. Then, it outlines the empirical approach, introducing the participants, and showing how the data were gathered and processed.

In Chapter 5: A User Perspective, the interview data are interpreted and contextualised. The chapter is divided into eight sub-chapters, each covering an overarching theme. The first covers the question of defining the instrument, allowing those who use it in a professional capacity to explain when an instrument is an Ondes Martenot, and which factors come into play to determine this. The second deals with instruments and repairers, providing more technical insight into the instruments themselves and how they are maintained, and showing how central repairers are to the network. The third sub-chapter is about performances and players, delving deeper into players' dedication to their instrument. It also provides a glimpse into the life of a professional ondiste, including travel challenges and disputes with conductors. In the fourth sub-chapter, institutions and teachers, the role of teacher is explained further, as are the current challenges Ondes Martenot students face. The value of institutions such as conservatories with regards to the continuation of the traditional Ondes Martenot playing technique is queried here. The fifth section covers repertoire and composers, providing users' insights into the role of repertoire in the network. It demonstrates how users who do not identify as composers do actively participate in the preservation and production of Ondes Martenot repertoire, and how they deal with the lack of mainstream awareness around the instrument's compositional possibilities. In the sixth section, documentation and researchers are central. This section highlights the importance of producing reliable information on the instrument, and the challenges faced when doing so. It also shows the value of users in other roles taking on the role of



researcher. In the next sub-chapter, the participants discuss the future of the Ondes Martenot, and the complex feedback loop of influence that determines the future trajectory of the instrument. It also includes an overview of a recent initiative to build new instruments, which in itself is an illuminating case study in the social construction of technology. Finally, the last section provides an overview of the findings regarding the network and its characteristics.

Chapter 6: Conclusion summarises the findings throughout the thesis in relation to the aims of the project. The current Ondes Martenot network is characterised as active, embedded, complex, self-aware, problem-solving, future-driven, productive and constructive. The methodological approach is then evaluated, and the original contributions of the study are highlighted. Lastly, further research is suggested.

## 1.6 Terminology

### **Ondes Martenot**

The name ‘Ondes Martenot’ means ‘Martenot’s waves’, pointing to the inventor and the way he turned electrical waveforms into music with his instrument. Since his presentation of the instrument to the public in 1928, the instrument has been called many things (French words are in italics): *les ondes Martenot* (plural), *l’onde Martenot* (singular), *les ondes*, *les ondes musicales Martenot*, *le Martenot*, *les ondes musicales*, *l’onde électronique type Martenot*, the Ondes Martenot, the Ondes, the Onde, the Martenot. Note that the French spelling only capitalises the inventor’s name, but the English spelling capitalises each word. Olivier Messiaen once proposed to officially shorten it to *l’onde*, but as many of the options above are still found today, it is clear that a consensus has not yet been reached within the Ondes Martenot network.<sup>8</sup> I have decided not to pick an abbreviation myself, to avoid it being misrepresented as being the consensus; I will use the full name of the instrument throughout the dissertation.

Other instruments closely associated with the Ondes Martenot, although not bearing the Martenot name, are the Ondes Musicales Dierstein, the Ondéa, the

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<sup>8</sup> ‘Cet instrument doit être international et s’appeler désormais tout simplement: Onde.’ Jean Laurendeau, *Maurice Martenot, Luthier de l’électronique*, 2nd ed. (Paris: Éditions Beauchesne, 2017), p. 339.

Ondomo, and the Ondioline. Some of these instruments are instead called Ondes Martenot by certain users, as they are often used to play the repertoire written for Ondes Martenot. More on this will emerge in chapter 5.<sup>9</sup>

### **Ondiste**

The French word *ondiste* means ‘Ondes Martenot player’. The word is derived from the instrument’s name in the same way a clarinet player is called *un/une clarinettiste* and a violin player *un/une violoniste*. As is custom in French, the ‘e’ suffix is used both in the masculine and feminine form, but from time to time, the word *ondist* without the -e is used to denote a male player. This can be found more in English than French text, however. As this is rare, and as there traditionally have been more female players, I have chosen to use the word *ondiste* with -e as the standard word for player, regardless of gender.

### **Player**

Although the word *ondiste* is typically used by users to describe an Ondes Martenot player, I have chosen to use the word ‘player’ as the main term throughout this project, as this word has been used previously in other user studies. It is more consistent with the terms for other roles in the network, such as maker, repairer, composer and researcher. For this project, the word is synonymous with ‘performer’.

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<sup>9</sup> A brief glossary of Ondes Martenot-style instruments such as these can be found in appendix C.

## Chapter 2: An Illustrative History of the Ondes Martenot

It is impossible to make a clean split between the Ondes Martenot's history pre- and post-2000. Many of the storylines involved in the instrument's trajectory, as will be demonstrated, had their origins in the 1990s, but made their main impact in the 2000s. Nor can I make a clear time-based distinction between existing background information and the research this project has contributed. As many of my participants have discussed the past as well as the present, I chose to supplement the existing information about the instrument's past with their insights. The following chapter is a brief collection of moments and contexts that were of significance to the history and development of the Ondes Martenot up until, and into, the twenty-first century. As its main function is to preface the chapters to come, it does not profess to be a comprehensive history, nor does it claim that the moments chosen are of the highest significance, or even equal significance. They are instead chosen to present a variety of influences on the Ondes Martenot's trajectory. To this end, the chapter provides some biographical details of Maurice Martenot himself, contextual information on the relevant historic period, composers' works and thoughts, technological developments, some of the Ondes Martenot's changing features, and people who had a significant impact on the instrument's trajectory. In doing so, I aim to illustrate that the history of the Ondes Martenot, as with any technologies, is non-linear, messy and complex, and involves all kinds of entities such as people, things and concepts. The information detailed below is predominantly based on three sources: Jean Laurendeau's biography of Maurice Martenot, Jeanne Loriod's brief history of the Ondes Martenot as included in the first volume of her treatise on the instrument, and Caroline Martel's recent documentary on the instrument.<sup>10</sup> They are currently the only substantial sources delving into the Ondes Martenot's past, produced by users after extensive and prolonged research. This information is supplemented by some insights revealed during my interviews with participants, where they covered the pre-2000 history of the instruments. Much of this information has not yet been available in English.

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<sup>10</sup> Jean Laurendeau, *Maurice Martenot, Luthier de l'électronique*, 1<sup>st</sup> edn (Montreal: Louise Courteau, 1990); Jean Laurendeau, *Maurice Martenot, Luthier de l'électronique*, 2<sup>nd</sup> edn (Paris: Éditions Beauchesne, 2017); Loriod, 'Historique/History' (1987), pp VI-X; *Le Chant des Ondes*, 2012.

The Ondes Martenot is a musical instrument. The name can be roughly translated to ‘waves of Martenot’, after the French inventor, Maurice Martenot. Martenot was born on 14 October 1898 to a wealthy Parisian family. In his teenage years, after an investment gone wrong, the family relocated to the countryside. The eldest sister, Madeleine, in an effort to earn her keep, started piano lessons to become a music teacher. Maurice Martenot grew up surrounded by music, with his older sister teaching him piano and *solfège*. Martenot learned to play the piano and, after a brief stint with the violin, turned to the cello. He soon became involved in teaching music himself, and developed a keen interest in music pedagogy. Near the end of World War I, Martenot, now in his late teens, was enlisted in the military. His position at a mobile communications unit brought him in contact with radio technology<sup>11</sup>, morse code transmitters, and specifically, the sound of triodes, also called lamps or vacuum tubes.



*Fig. 1: A young Maurice Martenot in military uniform.*

After World War I ended, society started its recovery, and ‘with the industry [of electronics] well established, several engineers were able to investigate the

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<sup>11</sup> TSF, or télégraphie sans fil. Martel, *Le Chant des Ondes* [14:15].

possibility of using the new technology for the construction of electronic musical instruments'.<sup>12</sup> Martenot, leaving radio engineering behind to go back to teaching music in Paris, could not help but further explore his newfound skills and knowledge in a musical context. His intrigue about electronic signals and the sounds they made inspired him to develop his own instrument in a makeshift lab in the attic, with assistance from his younger sister Ginette.<sup>13</sup>

Martenot's aim was to create more musical control features, so that the sound could be manipulated more delicately to play melodies. His first attempt at an electronic instrument, loosely dated at 1919 and never publicly presented, consisted of 'a small box and an antenna'.<sup>14</sup> The playing technique was called '*jeu à distance*', indicating the instrument was played at a distance, 'the sound being regulated simply by the movement of the performer's hand in the air'.<sup>15</sup> Despite the lack of detail regarding this model, we can find clues of its inner workings in another, more well-known instrument: the Theremin.

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<sup>12</sup> Peter Manning, *Electronic and Computer Music*, 2nd ed. (New York, NY: Oxford University Press, 2004), p. 4.

<sup>13</sup> Laurendeau (2017), p. 61.

<sup>14</sup> Loriod, vol I, p. VI.

<sup>15</sup> Id.



*Fig. 2: A rare photo of an instrument that matches Loriod's description of one of the earliest Ondes Martenot models. The instrument has 'Ondes Éthériques' on the front*

Around the same time, another young cellist and ex-World War I radio engineer had had a similar idea — not in France, but in Russia. Lev Termen's concept of radio transmitter-cum-instrument was borne out of the observation, while using radio equipment to measure the density of gases, that 'movements of his hand near the circuitry were interpreted as fluctuations in density, this time registering as changes in pitch'.<sup>16</sup>

For Martenot, the antenna design had its downsides. The 'antenna player', as I will call them, 'shapes' notes from the instrument's continuous signal without touch. Due to this lack of touch control, the instrument only provides auditory feedback for the player. The only indication as to whether the sound played is the correct one, is also the sound sent out to the audience in that very moment. The player is thus required to guess the place of the notes in mid-air *and* correct the playing in real time, using their musical hearing. To minimise any unwanted sounds, such as glissandi between notes or off-key notes, Theremin players are known to practise their fingering by memorising the hand and arm gestures in the air in relation to the

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<sup>16</sup> Albert Glinsky, *Theremin: Ether Music and Espionage* (Chicago: University of Illinois Press, 2000), p. 24.

antennae. It takes Theremin players a very long time to learn to play specific melodies without these unwanted sounds. It takes even longer to master the entire range of the instrument, to the point where the player can learn new scores without starting anew.

Instead of tinkering with different control mechanisms, Termen — who by now was well known under his Westernised name Theremin — had mastered his instrument over the years. In 1927, he relocated to New York City and started touring the world with his invention. Martenot had been aware of the competitor since the early-to-mid-1920s, and the news of the world tour prompted Martenot's entourage — Ginette, his wife Renée, mother Juliette, mother-in-law Berthe and brother-in-law Paul — to spur him on to finish his new design. However, Theremin's tour brought him to the Paris opera on 8 December 1927, before Martenot could introduce his instrument in his own city.<sup>17</sup> After attending the presentation and seeing first-hand how difficult it was to control the sound, Martenot was certain he was onto something, and decided to spend all of his available time perfecting his own instrument. His sister Madeleine took over his music pupils for the time being, and his wife Renée took on the full care of their newborn baby Claude, a clear indicator that Martenot's endeavours were supported, and to an extent made possible, by those around him.

On 3 May 1928, the second model was finally ready to be introduced to the public, although it would become known as the first model. The Ondes Martenot, in this form, still used the control cabinet at a distance as well as the volume button in the smaller cabinet to the side of the player. Instead of using the electromagnetic field, however, it provided tactile and visible feedback through a pulley system that consisted of a wire with a ring on the end. The player put the ring on their index finger and moved it towards and away from the control cabinet, varying the pitch in a linear gesture: tactile feedback. Another wire with a small weight attached to it, ran across the control cabinet, which had a picture of a keyboard on it. As the player pulled at their wire, the wire above the keyboard outline moved in tandem, and the position of the weight indicated the tone played: visible feedback. The wire itself ran through the base of the control cabinet, where it interacted with a row of metal screws to create a variable capacitor that registered the desired height of the pitch.

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<sup>17</sup> Laurendeau (2017), p. 69.



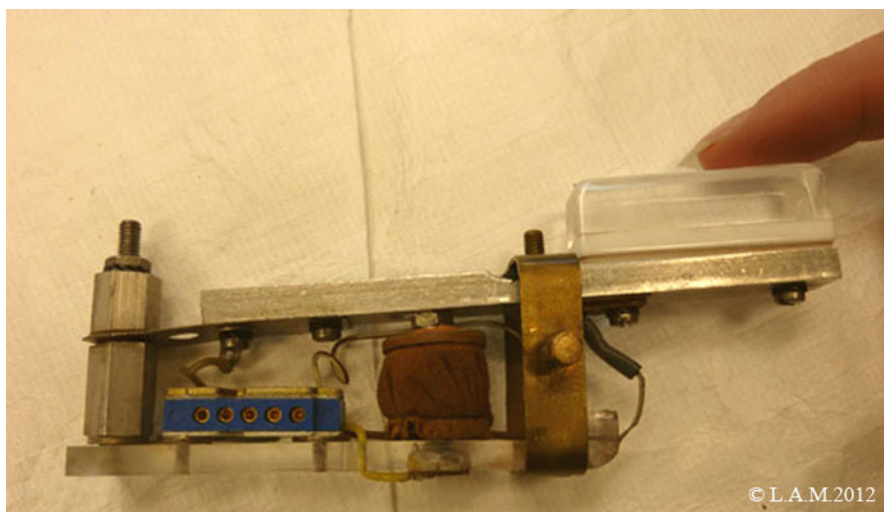
*Fig. 3: Maurice Martenot plays the first official Ondes Martenot model*

The left hand controlled the volume button. Although the button was inspired by Morse code transmitters, it required more sensitivity to gradually increase and decrease the volume. To this end, Martenot used mercury, a small piece of frosted glass, and a lead pencil. A few lines of pencil were drawn on the glass, and it was attached to the underside of the button, above a cup of mercury. Depressing the button increased the conductivity between the lead and the mercury, gradually strengthening the electronic signal. It is probable that this design was already present in the first model, but sources only go into detail about the volume control from the second model onwards.

The button provided a significant challenge for the player. In most acoustic instruments, the pressure of the player's hand(s) determines the volume, be it by direct contact with the vibrating material (such as a conga skin, or plucking a string for a *pizzicato* effect) or mediated through an object (such as keys, a bow or a plectrum). The range of pressure between silence and the loudest possible sound translates into a gestural range. For the piano, the player may use their entire weight to bear down on the keys to create a thunderous chord, and barely move a finger to play a triple *piano* note. The Ondes Martenot has a button that only depresses a short distance. Therefore, the range between silence and the loudest possible sound is not more than an inch of movement, and all dynamics, be it *piano*, *mezzoforte* or triple *forte*, lie in between. Compared to a drum, violin or piano, the expressive gesture of volume control is extremely small, which is one of the reasons why the instrument is found to be so sensitive. When it comes to continuous volume, then, it means that to



shape the note — to allow it to start at a certain volume, perhaps even change in volume during its duration, and stop — requires a great amount of control over this button, and thus over the hand. Aside from volume, the button, as it shapes the note, is also in charge of the attack, decay, sustain and release of that note. For a player, this means that any score markings related to not just dynamics, but also accents, such as *staccato*, *tenuto* and *legato*, are executed with the button. This highlights that the Ondes Martenot provided tactile as well as auditory feedback for its players in relation to volume, which is useful, but that doesn't mean it was automatically easier to learn to play.



*Fig. 4: The button mechanism, with the leather pouch clearly visible*

The Ondes Martenot made its first official appearance at the Paris opera on 3 May 1928.<sup>18</sup> Although it had been in existence for years in varying forms, and would continue to change over the next several decades, this concert would in history come to be interpreted as the 'birth' of the instrument. As is very common practice when introducing new instruments to the public, Martenot started by playing a well-known melody that would help the audience adjust to the novelty of its sound and appearance, the famous Bach chorale *I Greet Thee, Who My Sure Redeemer Art*. On the day of the concert, the instrument, not made for the alternate current (AC) the building was running on, refused to co-operate during the soundcheck. Only moments before the concert was to start, the electrician managed to switch it to DC, and the instrument worked properly. Despite the technical issue, which had a lasting

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<sup>18</sup> Laurendeau (2017), p. 76

effect on Martenot's confidence. The demonstration was a great success, however, and the first composition for the instrument was completed that same year: *Poème Électronique*, by Dimitri Levidis.<sup>19</sup> Compared to Theremin's instrument, the Ondes Martenot was a significant step forward for many critics present in the audience. Laurendeau, in his book, lists a great number of headlines of newspapers at the time praising Martenot for inventing such a sophisticated electronic instrument. The French newspaper *Le Figaro*, for example, printed that 'this instrument is the most perfected (...) far ahead of the attempts of the Russian professor'.<sup>20 21</sup>

Almost immediately after its demonstration, Gaveau, a well-known instrument manufacturer, showed an interest. Martenot's son Jean-Louis Martenot recalls:

They ended up producing a good twenty-something instruments with a great outer frame, but the instrument didn't work, because they were good piano manufacturers, but they had electricians — experts in electronics didn't exist yet — and there was a number of errors. My father withdrew his rights and repaired every single instrument Gaveau had sold, in France and abroad. For him, it was a painful experience, because he always wanted to achieve a simplification, and he greatly hoped for manufacture, but after the war he no longer wanted to talk about it.<sup>22</sup>

Rather soon after the instrument's first public presentation at the Paris opera, Martenot presented a third model. The most noticeable change was that the '*jeu à distance*' was replaced by a '*jeu à la bague*', the 'ring' technique. The player now sat down in front of a much wider cabinet, put the ring on their right index finger and dragged the attached wire, spun across a depiction of a keyboard, from left to right. This liberated the player's eye to a certain extent, so that they could focus more on the score. It also allowed for easier vibrato, reminiscent of a string player's back-and-forth wrist movement on a string. It also had the added benefit of looking more

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<sup>19</sup> Not to be confused with composer Edgard Varèse's famous piece *Poème électronique*, which premiered in 1958.

<sup>20</sup> 'Cet instrument est le plus perfectionné [...] bien loin des essais du professeur russe'. N.N., *Le Figaro*, 5 May 1928, quoted in Laurendeau (2017), p. 81.

<sup>21</sup> All translations from French are my own, and the original quote is provided in a footnote for reference.

<sup>22</sup> 'Et puis il était fabriqué, je ne sais pas, sûrement une bonne vingtaine d'instruments de très bon meuble, mais l'instrument ne marchait pas. Parce qu'ils étaient de bons facteurs de pianos, mais ils avaient des électriciens – des électroniciens ça n'existait pas encore, et il y avait un quantité d'erreurs, et mon père a repris ses droits, a réparé dans toute la France et à l'étranger les instruments que Gaveau avait vendus. Et ça était pour lui une expérience douloureuse, parce qu'il voulait toujours arriver à une simplification, et il a beaucoup espéré de la fabrication, mais après la guerre il ne voulait plus en entendre de parler.' - Jean-Louis Martenot, interview, 22 May 2012.

like a conventional instrument.

The button, in earlier designs still in a detached box on the left, was soon integrated into the left side of the cabinet, in a drawer beside the player's left hand. Different timbral options were now offered, each with their own switch situated left of the button, so that they could be operated by the fingers not in charge of playing the button. Additionally, due to the technology of the wire, six pins added to the mechanism allowed for rapid transposition of the pitch, from just one tone to an entire octave. In an effort to further increase the player's volume control and improve the quality of the sound (and likely also to avoid the use of mercury), Martenot developed a system that involved a leather pouch of powder placed under the button, very similar to the mechanism used in the pedals of sewing machines at the time. On the top and bottom of the pouch, he placed electrodes, both connected through the powder. The powder itself, ingeniously, was a mixture of conducting graphite and non-conducting mica, so that when the button was pressed down, the graphite molecules were brought closer together, creating more connections and thereby sending an increasingly stronger signal from electrode to electrode. The nature and ratio of the powder remained a mystery until long after Martenot's death, and the 'trade secret', as it is called in Martel's documentary, has only recently been revealed in a study carried out by the research lab of the Music Museum (Musée de la musique) in Paris.<sup>23</sup> It must be noted that the ratio was not fixed, and often differed according to the wishes of the player. This is an example of the reciprocal relationship between maker and players: players were able to customise the 'feel' of the button. Where some users preferred a direct response when pressing down lightly, others felt the button gave them more control over quieter notes if the volume increased more gradually when pressing down harder. In other words, the curve of the ratio between pressure and resulting volume could be modified by the mixing of the powder: less graphite meant having to press harder to achieve the same volume.

During this time, Martenot's younger sister Ginette was in regular contact with composers of the time. She would write to Milhaud, Honegger and Jolivet to ask if they could compose for the instrument, and she took responsibility for seeking permission to transcribe existing scores for Ondes Martenot. Honegger used the

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<sup>23</sup> Stéphane Vaiedelich, personal communication, 13 September 2017.

instrument in a film score he was composing, for the animated film *L'Idée* (The Idea, 1932) by Bartosch. Milhaud completed his *Suite pour ondes Musicales et piano* in 1933. Among other composers were Pierre Vellonès, Joseph Canteloube and Jacques Ibert.

A particular early moment of visibility for the Ondes Martenot was the Ondes Martenot performance at the Paris Exposition in 1937. The repertoire was varied, consisting of classical and popular pieces. One of the highlights was Messiaen's *Fête des belles eaux*, which was commissioned to be tailored to the precise timings of a water and fireworks display.



*Fig.5: The Ondes Martenot octet at the World Expo 1937 in Paris*

During the Second World War, it was again Ginette who kept the Ondes Martenot's musical activity afloat. After the war, she resumed her studies, and converted a good number of students to the instrument, in collaboration with composition teacher Messiaen. Thanks to her, Martenot received more orders, and eventually found himself lobbying for Ondes Martenot classes at the Paris conservatory. By the end of the decade, Messiaen had completed what would become his most well-known composition including Ondes Martenot: the *Turangalila* symphony. Serge Koussevitzky, music director of the Boston Symphony Orchestra, had given Messiaen carte blanche, and the result was 'an immensely bold

and optimistic work that celebrates both human and divine existence'.<sup>24</sup>

Not everyone was as full of praise for the work. Renowned French composer Pierre Boulez, an early adopter of the Ondes Martenot, openly dismissed the work, and the Ondes Martenot with it, sending a shock wave through the instrument's network. In the 1930s, Boulez had learned to play the Ondes Martenot with Maurice Martenot. He ended up earning a living playing the Ondes Martenot at the Folies-Bergère in Paris in the early 1940s. After being introduced to celebrated theater actor-cum-director Jean-Louis Barrault by composer Arthur Honegger (husband of his counterpoint teacher Andrée Vaurabourg), he joined Barrault and his wife Madeleine Renaud's new theatre company in 1946, and quickly became the music director. Influenced by Honegger and Jolivet, the young composer wrote a quartet for four Ondes Martenots (1945-6), and included the instrument in his first orchestration of *Notations* (1945). In 1944, Messiaen, his music teacher at the time, invited him to join a private study group for young talent, where he introduced Boulez to a range of avant-garde music including music by Schönberg. More drawn towards modernism and serialism, Boulez also asked René Leibowitz to tutor him in 1945. He was subsequently introduced to more Schönberg, as well as Webern and Berg. His correspondence with Cage from 1949 to 1954 cemented his modernist vision for the future of music.<sup>25</sup> By the time his tutor Messiaen had written the *Turangalîla* symphony, in 1949, Boulez publicly rejected it: the Ondes Martenot was in his eyes 'too sentimental, the vibrato unbearable, and the music written for it ugly'.<sup>26</sup> Rumour has it he used the words 'brothel music' ('musique de bordelles'). He even turned his back on his own works for Ondes Martenot, including the quartet he wrote, of which he 'said it shouldn't be played. [Boulez] renounced it.'<sup>27</sup> The Ondes Martenot's association with Messiaen's compositions was, in the grand scheme of things, an immense step forward, but in this instance, it prevented the modernists from seeing its full potential. Ratsimandresy states:

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<sup>24</sup> Caroline Rae and Caroline Potter, 'Turangalîla-Symphonie', *Philharmonia* (2014) <<https://www.philharmonia.co.uk/paris/essays/50/turangalila-symphonie>> [last accessed 15 December 2018].

<sup>25</sup> *The Boulez-Cage correspondence* ed. by Jean-Jacques Nattiez (Cambridge: Cambridge University Press, 1993).

<sup>26</sup> '[...] trop sentimentale, le vibrato est insupportable, et la musique écrit est moche' Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>27</sup> 'Il a écrit un quatuor mais il a dit qu'il fallait pas le jouer. Il le renit.' Pascale Rousse-Lacordaire, interview, 8 September 2017.

People were a little bit afraid to touch the instrument, because of Messiaen. They wanted to kill the fad, in a way, I don't know, to say 'I'm not like Messiaen so I don't choose the instrument', something like that — or Jolivet. And it was also we had a lot of religious music, Messiaen but also Jolivet in a way also full of religiosity. Lots of composers felt that they wanted to break with that, with that kind of conservative.<sup>28</sup>

Due to this backlash, interest in the Ondes Martenot waned. Despite this, the following two decades would be a very productive time for Martenot. He started a number of creative projects, such as a smaller student model that only had four octaves, and even an Ondes Martenot with radio and gramophone attached.<sup>29</sup> Production of these models did not go far beyond a few prototypes, although Martenot would remain interested in creating student models. More significant to the further development of the Ondes Martenot was that Martenot finally managed in 1953 what he had tried to achieve since 1937: to shorten the instrument. The sixth model was born: it had six octaves, but included a lever that transposed the entire keyboard one octave. Essentially, it contained all seven octaves from before, but in a smaller, lighter instrument.<sup>30</sup> He also included a knee lever, reminiscent of some types of organs. Rather than switching out timbres using the switches in the drawer, it allowed the player to gradually introduce harmonics to the sound.

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<sup>28</sup> Nadia Ratsimandresy, interview, 13 September 2017.

<sup>29</sup> Laurendeau (2017), p. 196.

<sup>30</sup> Laurendeau (2017), p. 198.



*Fig. 6: Ondes Martenot model 6 with the first volume of Loriod's treatise on the instrument on the music stand*

When Laurendeau returned to Montreal with his instrument in 1965, Martenot's assistant Mr Manière, who had been helping Martenot since 1951, wrote down instructions to maintain and repair the instrument. Laurendeau recalls: 'how to solder, what to do when the pulleys squeak, ribbon tension... Artisanal. That word sums up the Martenot endeavour. Both as a strength and a weakness.'<sup>31</sup> This quote highlights the challenges players faced as a direct consequence of the intricate handiwork of the designer. Already an advocate of the Ondes Martenot, Laurendeau made it his mission to spread awareness about the instrument in Canada. By 1970, in the conservatory in Montreal, the first Ondes Martenot course in Canada was established.

The 1970s era of spectralism was particularly suited to the Ondes Martenot, which could have had a hand in the rediscovery of the instrument by avant-garde composers. Spectralism, or spectral music, was a term given to music that 'uses the acoustic properties of sound itself (or sound spectra) as the basis of its compositional

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<sup>31</sup> Jean Laurendeau, in: Caroline Martel, *Le Chant des Ondes*, [3:11].

material'.<sup>32</sup> Spectralism, and in particular the generation of composers who wrote for the Ensemble l'itinéraire, was all about electronic sounds and timbral possibilities, of which the Ondes Martenot had plenty.



*Fig. 7: The drawer, or tiroir, of a model 7 Ondes Martenot, with the ten switches for timbre and diffusers to the left of the volume button*

The composers knew the instrument very well, having studied with Martenot and Loriod, and were able to exploit the possibilities it afforded them. Binet-Audet recalls:

That was truly a new way of writing for the Ondes. Yes, [Murail] was ondiste himself, so, at the start of the 1970s they really wrote in a different way for the Ondes. There was the whole area of experimental music that was also translated via the Ondes Martenot, in the way you had Scelsi with the cello. You had equivalent sonic research like there had been in compositions from that era.<sup>33</sup>

<sup>32</sup> Julian Anderson, 'Spectral Music', *Grove Music Online* (2001)

<<https://doi.org/10.1093/gmo/9781561592630.article.50982>> [last accessed 8 October 2018).

<sup>33</sup> 'Ça c'était vraiment une nouvelle écriture pour les ondes. Ouais, ça c'était, il était ondiste lui même, puis, à partir des années 70 vraiment on a écrit d'une autre façon pour les ondes. Il y avait tout le côté musique expérimentale qui était traduit aussi via les Ondes Martenot, comme on avait Scelsi avec le violoncelle, tu avais l'équivalent des recherches sonores comme il y en a eu dans les compositions de cette époque-là' - Suzanne Binet-Audet, interview, 27 May 2014.



One could argue that there is a possibility that the Ondes Martenot had a hand in the birth of spectralism. Whether this is true or not, the simultaneity of composers familiar with the Ondes Martenot and their ventures into timbral experimentation is interesting, to say the least. Alongside this new generation of composers, the Ondes Martenot started its path of recovery from the modernists' rejection. Even Messiaen returned to the Ondes Martenot when he started working on his new opera *Saint François d'Assise* in 1975. The piece premiered in 1983.

The absence of the Ondes Martenot in avant-garde circles until the advent of spectralism does not mean that the Ondes Martenot lay dormant throughout the 1960s. In fact, it had found a new audience in a different circle: film and television. The instrument had previously been used in a variety of films in the 1930s, such as the aforementioned *L'Idée*, but when Briton Barry Gray became the main composer for Gerry Anderson's TV series, the Ondes Martenot, for a short while, became a staple sound in the British living room. Shortly after discovering the instrument, he had travelled to Paris to buy his own and study the technique with Martenot. Notably, the instrument was used among other, newer electronic instruments to create not just music but also sound effects for Anderson's science fiction series.

Maurice Jarre had also studied the Ondes Martenot with Martenot himself, and in fact became the Ondes Martenot player (and percussion player) in Jean-Louis Barrault's theatre orchestra as Boulez's successor. He had written just a few film scores in France when in 1961 he was asked to compose the soundtrack to Sam Spiegel's Hollywood film *Lawrence of Arabia* (1962). The score, featuring the Ondes Martenot, won him an Oscar.

Likewise, the 1970s were a time that saw the instrument's first major success in popular music — discounting Belgian Jacques Brel's hit single 'Ne Me Quitte Pas' in 1959.<sup>34</sup> In Quebec, Canada, two bands that used the Ondes Martenot rose to prominence: Beau Dommage and Harmonium. Their live performances would be among the first instances people could see an Ondes Martenot on stage at a rock concert, played by Marie Bernard.

By the early 1970s, Martenot had finally been convinced to create a transistor

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<sup>34</sup> Although the original single included an Ondes Martenot intro, the vast majority of the numerous subsequent covers — which greatly contributed to the song's success — did not. Jacques Brel, 'Ne Me Quitte Pas', *La Valse à Mille Temps* (Philips, 1959) [LP].

instrument, allegedly by Mr Manière. The circuit was outsourced to an electronics company, and the instrument was to be completed around 1971. Correspondence with Jean Laurendeau, whom Martenot sent updates, shows that the project was delayed a number of times, for a few months each time. By 1974, the first generation of transistor Ondes Martenots was finished.<sup>35</sup> It caused a slight panic among players, as the tone of the lamp instrument could only be approximated, but many were soon won over by the myriad advantages: the instruments were more stable, lighter and thus easier to carry, housed more timbres than ever, and were easier to repair. Martenot continued to work on the transistorised instruments, and according to repairer Jean Landry, went through four different generations.<sup>36</sup> The last generation had successfully solved the issue of the *claquement*, the clicking sound the circuit made when closed by a key. No longer was it the player's responsibility to press the key early and only then let the volume come in. This had an effect on the playing technique similar to that of the automatic gear shift in modern cars: players only familiar with this model were not taught to play around the *claquement*, meaning they were unable to properly play instruments with *claquement*. Interestingly, some pieces use it as a musical feature, demonstrating the flexibility with which a feature can be interpreted: for some, or in some circumstances, it is a problem, and for others, or in other circumstances, it is a desired effect.

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<sup>35</sup> Laurendeau (2017), p. 231.

<sup>36</sup> Jean Landry, interview, 23 May 2014.



*Fig. 8: The setup of the Ondes Martenot model 7: main instrument with 6-octave keyboard, résonance diffusor with palme diffusor on top, and the métallique to the right*

On 8 October 1980, Maurice Martenot died suddenly in a traffic accident. It came as a shock to those around him, and the network was not prepared for his untimely demise. Marcel Manière continued to finish and repair instruments throughout the 1980s, along with Jean-Louis Martenot. Jean-Louis later collaborated with the French Ministry of Cultural Affairs on new instruments, but the Ministry demanded they were to be digital. Jean-Louis recalls that it was a challenging endeavour, ‘with people who said “it’s very simple, we’re going to do it” and demanded a contract, and the result was unacceptable’.<sup>37</sup> The Ondes Martenots here mentioned are further discussed in Martel’s film, where Jonny Greenwood, who for a long time only had Jean-Louis Martenot’s model, shows Suzanne Binet-Audet how jarring the instrument’s *onde* timbre is. Production stopped after a few years.

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<sup>37</sup> Jean-Louis Martenot, interview, 22 May 2012.



*Fig. 9: Jonny Greenwood and Suzanne Binet-Audet discuss the digital Ondes Martenot built by Jean-Louis Martenot*

Another initiative to build new Ondes Martenots after Martenot's death came from an unexpected corner: Ambro Oliva, an engineer with an interest in the instrument, started designing a new model in 1997 based on Martenot's Ondes Martenot, calling it the Ondéa. Oliva was the first to successfully create an instrument that approximated the original to the point where it could be used by professional players. Two of my participants in this study, Nadia Ratsimandresy and Nathalie Forget, still use an Ondéa as their main instrument.



*Fig. 10: Nadia Ratsimandresy and her black Ondéa — an unusual colour*

In 2011, Oliva was forced to put a stop to the project due to bankruptcy. Issues regarding the rights to the Ondes Martenot name had delayed the already far too costly — and mismanaged — endeavour to the point where financial viability was no longer a possibility. Forget remembers taking the unfinished Ondéa she had ordered (and paid for) out of Oliva's workshop mere days before the bailiffs arrived to clear it out: 'that one has many problems, because it has never been finished.'<sup>38</sup> It was lucky, then, that a Parisian repairer of electronic instruments called Jean-Loup Dierstein had become the go-to repairer for Ondes Martenot maintenance. His story is included in chapter 5.

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<sup>38</sup> Nathalie Forget, interview, 12 September 2017.

During the time Mr Oliva was working on his design, another significant actor joined the network: Jonny Greenwood. The British musician and composer, known for his role as multi-instrumentalist in the rock band Radiohead, became the owner of one of Jean-Louis Martenot's instrument's in the late 1990s, and included it on their next album, the critically acclaimed *Kid A*.<sup>39</sup> Around the same time, the internet developed into a global communication network. The simultaneity of these two occurrences brought new levels of visibility to the Ondes Martenot in the area of international popular music. Greenwood, who had caught the bug, proceeded to use the instrument in his subsequent film scores and classical compositions alongside later Radiohead albums. The effects of Greenwood's efforts will be discussed in chapter 5.<sup>40</sup>

A few things to take away from this brief, illustrative history are, firstly, that the Ondes Martenot's journey has been impacted by many people, often behind the scenes, such as Martenot's family, who supported him. Secondly, not all impact was positive, as we can see in Boulez's rejection of the instrument. Thirdly, not all impact came from people: the great success of the revolutionary transistor meant that eventually, Martenot agreed to incorporate it into his design. Fourthly, the Ondes Martenot's journey is decidedly non-linear, as it has known successes as well as failures; brief mainstream popularity followed by times of relative obscurity. This chapter aimed to provide an introduction to the instrument and its context pre-2000, so that the recent developments and their significance for the network, as will be discussed in chapter 5, become clear. In demonstrating the 'messy' history of the instrument, I have also provided a response to trends in electronic instrument historiography — an argument that will be explored in the next chapter: a critical review of existing sources that discuss the Ondes Martenot.

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<sup>39</sup> Radiohead, *Kid A* (Parlophone, 2000).

<sup>40</sup> Unfortunately for the project, Jonny Greenwood declined my request to be interviewed in person.

### 3. Review of existing literature on the Ondes

#### Martenot

##### 3.1 Introduction

Throughout the twentieth century, the Ondes Martenot has on occasion been a topic of study for academics. A handful of sources in languages such as English, French, Italian and German can be found scattered across the decade, with some as old as the 1930s.<sup>41</sup> Martenot himself has on occasion contributed to the body of literature, such as in Werner Meyer-Eppler's edited volume in *Musik–Raumgestaltung–Elektroakustik* from 1955, or a year earlier in the *cahiers* of the Barrault company, where his instrument was often used in the theatre's house orchestra.<sup>42</sup> More common is the mention in passing of the name Ondes Martenot in writings on electronic music, often alongside contemporaries such as the Telharmonium, the Theremin and the Hammond organ.<sup>43</sup>

I have narrowed the scope of this review to academic sources in English for two reasons. Firstly, English is currently the dominant language in academic fields. Many French sources, on the Ondes Martenot or electronic instrument history more generally, cite English academic literature, and a considerable amount of French and French-Canadian academics publish in English. Related to this point, information that does not exist in English fails to reach a considerable section of the academic population. Therefore, reviewing English sources reveals the information available not just to native speakers, but also those whose second or third language is English.

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<sup>41</sup> Benvenuto Disertori, 'Le onde Martenot: lo strumento nuovo d'una nuova era', *RMI*, 43 (1939), 383–92; Fred K. Prieberg, *Musica ex machina: über das Verhältnis von Musik und Technik* (Berlin: Ullstein, 1960), 214–22; Thomas L. Rhea, *The Evolution of Electronic Musical Instruments in the United States*, diss. (Nashville, TN: George Peabody College, 1972), 62–7; Silvester Vicić, *The Ondes Martenot: a Survey of its Use in Selected French Compositions 1928–1950*, diss. (London, ON: U. of Western Ontario, 1984).

<sup>42</sup> Maurice Martenot, 'Künstlerische und technische Merkmale des elektronischen Musikinstruments: Zukunftsperspektiven', *Musik–Raumgestaltung–Elektroakustik*, ed. W. Meyer-Eppler (Mainz: Ars Viva-Verlag, 1955), 72–7; Maurice Martenot, 'Lutherie électronique: La musique et ses problèmes contemporains', *Cahiers de la Compagnie Madeleine Renaud – Jean-Louis Barrault*, 3 (Paris: Éditions Julliard, 1954), 69–75.

<sup>43</sup> Umberto Eco, 'La Musique et la Machine', *Communications*, 6 (1965), 10–19; Bastien Gallet, 'Techniques électroniques et art musical: son, geste, écriture', *Volume!*, 1.1 (2002), 17–28;

Secondly, English sources align with my perspective as a researcher in England. It is evident from my travels that the Ondes Martenot is more embedded in daily musical culture in France, but this stops rather abruptly at the border. The extent to which its coverage in French academic literature is average, or exceptional, is thus difficult to gauge, let alone how it compares to English sources. I therefore approach the instrument from my position outside of France, and in doing so, evaluate to what extent the Ondes Martenot's story has been disseminated on an international level. French sources that I do cover fall under the category of 'sources produced by users'. This category consists of different types of sources, such as Loriod's treatise, Laurendeau's biography, Martel's documentary, and a book on Messiaen with a chapter on his use of the Ondes Martenot.<sup>44</sup> They are all created by those who are somehow professionally involved with the instrument, be it as a player, teacher, composer, repairer, maker, or researcher. More importantly, they are created in collaboration with other users. Although some users are also academics, and their sources are academic sources, there are noticeable differences in the information presented, which is why they are discussed separately. The following section, then, is split into two: the Ondes Martenot in academic literature (3.2), and the Ondes Martenot in sources produced by users (3.3). Due to the fact that some users are also academics, there exists a small amount of overlap between these categories. As their sources clearly bear the characteristics of those written by users, however, I have categorised them as such.

### 3.2 The Ondes Martenot in Academic Literature

The field of organology has traditionally occupied itself with studying acoustic instruments used in Western art music, and 'the academic study of musical instruments appears to stop as the era of electricity begins'.<sup>45</sup> Academic studies dedicated to specific electronic instruments are largely absent. Only in academic sources on the field of electronic/electroacoustic music can we find mentions of

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<sup>44</sup> Christopher Dingle and Nigel Simeone, eds., *Olivier Messiaen: Music, Art and Literature* (Aldershot: Ashgate, 2007), pp. 63-78.

<sup>45</sup> Paul Harkins, *Following the Instruments and Users: The Mutual Shaping of Digital Sampling Technologies*, [doctoral thesis] (Edinburgh: University of Edinburgh, 2016), p. 3.



electronic instruments. Bosma observes the split approach between general music sources and electronic music histories:

These electronic music histories have a different focus from the more general music history books: they deal not only with the music, but also, to a great extent, with the electronic music technology. Electronic music history is to a large extent structured according to technological developments, whereas general music history books (such as Burkholder/Grout) are mainly structured according to time periods, geographical areas and musical styles, forms, traditions and developments, rather than, for example, dealing extensively with the technical aspects of musical instruments.<sup>46</sup>

This structuring of history according to technological developments that is so particular to electronic music instruments creates a narrative that is reductionist and deterministic in nature; reductionist, because it reduces musical instruments to their technical features, and deterministic, because it presents electronic instrument history as a linear progression from one technological innovation to the next, ‘better’ one.

Studying the Ondes Martenot through existing literature is a challenge. The instrument seems to have been largely omitted from music history. The majority of the very few mentions of the Ondes Martenot in academic literature can be found in histories of electronic music. They, as Bosma predicts, are indeed to a large extent technology-focused. Looking at some of the most widely cited sources, five recurring approaches to the Ondes Martenot’s description can be identified: the Ondes Martenot is repeatedly presented as a) a technical novelty, b) a finished product; c) a historical precursor; d) a debatably successful instrument; and e) removed from its context of use. I will below unpack the problematic aspects of these approaches, and the consequences they could have for the Ondes Martenot.

### 3.2.1 Technical Novelty

As with most historical overviews, histories of electronic music are written with a particular emphasis on chronology. They attempt to give an overview of events that

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<sup>46</sup> Hannah Bosma, ‘Canonisation and Documentation of Interdisciplinary Electroacoustic Music, Exemplified by Three Cases from the Netherlands: Dick Raaijmakers, Michel Waisvisz and Huba de Graaff’, *Organised Sound*, 22.2 (2017), 228-237 (p. 229).

had certain significance for the evolution of electronic music, and sometimes instruments have their own chapter. The Ondes Martenot, if it is mentioned at all, is positioned in this chronology in 1928, the year it was presented to the public by Martenot.<sup>47</sup> This approach reduces the historical value of the instrument to its technological components and their assimilation into future instruments, and disregards its value as a tool for expression in the context of music-making beyond those first two decades.

Where the Ondes Martenot is featured in electronic music histories, the descriptions are largely of a technical nature. The instrument, as most others in the line-up, is described as a sum of components. Most often mentioned are the volume button, the keyboard and the ribbon, as they each have characteristics unique to the instrument. It is rare for sources to describe the instrument's sound, playing technique, or users. Within the last category, users, Messiaen is typically mentioned, which can be seen as a continuation of the traditional musicological narrative of the great composers, rather than a conscious broadening of the topic area to include the instrument's context of use.<sup>48</sup>

Ernst declares that Martenot 'introduced various methods for controlling timbre in 1928'.<sup>49</sup> Manning groups several instruments with electronic sound generation together, describing them as follows: 'most were keyboard-oriented, providing a single melodic output and an ancillary means of controlling volume, usually taking the form of a hand-operated lever or a foot-pedal'.<sup>50</sup> Keislar presents his interpretation of developments in music technology in a table, and under 'Electronic musical instruments', he describes them as providing an abstraction from acoustic musical instruments, a disjunction from sound generator (due to the control mechanism), and a proliferation of timbres, of possible controllers and of increased

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<sup>47</sup> The Ondes Martenot is included in the timeline in Ernst (1977), Manning (1985), Théberge (1997), Chadabe (1997), Holmes (2002), Collins, Schedel and Wilson (2013). The Ondes Martenot is omitted from the timeline in Braun (2000) and Keislar (2011). David Ernst, *The Evolution of Electronic Music* (New York, NY: Schirmer Books, 1977); Peter Manning, *Electronic and Computer Music*, 2nd ed. (New York, NY: Oxford University Press, 2004); Paul Théberge, *Any Sound You Can Imagine: Making Music/Consuming Technology* (Hanover, NH: University Press of New England, 1997); *Electronic Music*, ed. by Nick Collins, Margaret Schedel and Scott Wilson (Cambridge: Cambridge University Press, 2013); *Music and Technology in the Twentieth Century*, ed. by Hans-Joachim Braun (London: Johns Hopkins University Press, 2000); Douglas Keislar, 'A Historical View of Computer Music Technology', in: *The Oxford Handbook of Computer Music*, ed. by Roger T. Dean (Oxford: Oxford University Press, 2009), pp. 11-43.

<sup>48</sup> Vincent Duckles et al, 'Musicology', in *Grove Dictionary of Music* (2001)

<<https://doi.org/10.1093/gmo/9781561592630.article.46710>> [last accessed 25 November 2018]

<sup>49</sup> Ernst, p. xxxviii.

<sup>50</sup> Manning, p. 4-5.

ranges of all musical parameters.<sup>51</sup> Braun also describes electronic instruments — not the Ondes Martenot, but the Theremin and Hammond organ — leading with their sound generation characteristics and playing features.<sup>52</sup> The instruments as presented by these sources are thus mainly seen as a set of features. In reading this, these accounts could almost be forgiven for forgetting that these are musical instruments, tools of music-making, played by instrumentalists and composed for by composers. The instruments' context of use is absent.

### 3.2.2 Finished Product

Another recurring approach to the description of the Ondes Martenot is its presentation as a finished product in 1928. Many sources assign the year 1928 to the instrument as its birth year, the year of its invention. They then briefly describe the Ondes Martenot's features, before moving on to the next instrument in the chronology (often the Hammond organ, sometimes the Trautonium). This approach not only erases decades of experimentation and modification beyond 1928, it also technically presents false information. In 1928, the Ondes Martenot looked like this:

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<sup>51</sup> Keislar, p. 14-15.

<sup>52</sup> Braun, p. 11-12.



*Fig. 11: Maurice Martenot plays the Ondes Martenot in 1928*

This model did not have a keyboard or ribbon, nor options to change the timbre. Additionally, it was played standing up, rather than sat down, by pulling a wire away from the wooden box it was attached to. The date 1928 so often associated with the Ondes Martenot, stems from its first public appearance at the Paris opera. The instrument used was in fact Martenot's second model (the first being very similar to the Theremin). Compared to the instruments used today, the only feature that has remained more or less the same (on the outside, at least) is that of the volume button, the *touche d'expression*. The other features said to be part of the 1928 model, such as the movable keyboard, the ribbon controller and the various timbres, were yet to be invented.

The Ondes Martenot is almost exclusively seen as a finished product, a set of technologies of a definitive shape. We can, perhaps, compare it to the shape and features of the violin – its form has solidified, and has been in this state for a long time. The technical term that describes this phenomenon in Science and Technology Studies is ‘stabilisation’, as will be discussed further in the methodology. Contrary to the violin, the Ondes Martenot in 1928 was yet to undergo many changes to its design, both in outer appearance and in features. The Ondes Martenot was not a finished product, and in fact is still undergoing changes today. Today, the stabilisation (or lack thereof) of the Ondes Martenot is contested even by its users,

and their views will be further discussed in chapter 5. Of the sources reviewed in this chapter, the only ones that acknowledge the instrument as a design in progress are Chadabe (although his history of the instrument ends in 1960) and more recent ones, such as Théberge, Holmes and Collins et al.<sup>53</sup>

### 3.2.3 Historical Precursor

The Ondes Martenot, if featured, is repeatedly found in introductory sections, and more specifically within a brief timeline of events spanning the first few decades of the twentieth century. The Ondes Martenot's history is, in these sources, seen as pre-1940s 'background' to other instruments and music, its status an 'antecedent' and 'early' instrument. Manning situates early electronic instruments under 'The *Background to 1945*'.<sup>54</sup> <sup>55</sup> Collins, Schedel and Wilson place them under 'New sounds and new instruments: Electronic music *up until 1948*'.<sup>56</sup> Ernst titles the chapter 'Chronological list of *pre-1948* events related to electronic music'.<sup>57</sup> Keislar names his chapter *Antecedents: abstraction, disjunction and proliferation in music technology*.<sup>58</sup> Chadabe calls them 'The *Early Instruments*'.<sup>59</sup> <sup>60</sup> To classify the Ondes Martenot under the pre-1945 umbrella means to claim that its most significant and influential period in time was its first two decades of existence, when it was in fact the period just after World War II that would eventually be most significant. Ondiste Cynthia Millar, in Jeanne Loriod's obituary for *The Guardian*, wrote:

By the 1940s, Martenot's instrument had settled into what was to be, with minor variations, its final form - this was the model for which Messiaen wrote the *Trois Petites Liturgies* (1944) and the *Turangalîla-Symphonie* (1949).<sup>61</sup>

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<sup>53</sup> Chadabe, p. 12; Théberge, p. 44-45; Thom Holmes, *Electronic and Experimental Music*, 2<sup>nd</sup> ed. (New York, NY, 2002), p. 66-67; Collins et al., p. 39-40.

<sup>54</sup> Manning, pp. 3-18.

<sup>55</sup> Emphasis added in this and subsequent examples.

<sup>56</sup> Collins, Schedel and Wilson, pp. 25-44.

<sup>57</sup> Ernst, pp. xxxvii-xl.

<sup>58</sup> Keislar, in Dean, pp. 11-43.

<sup>59</sup> Joel Chadabe, *Electric Sound: The Past and Promise of Electronic Music* (Upper Saddle River: Prentice-Hall, 1997), pp. 1-21.

<sup>60</sup> End of emphasis added.

<sup>61</sup> Cynthia Millar, 'Jeanne Loriod', *The Guardian* (6 September 2001)

<[www.theguardian.com/news/2001/sep/06/guardianobituaries](http://www.theguardian.com/news/2001/sep/06/guardianobituaries)> [last accessed 10 December 2018].

The pre-1945 period, for the Ondes Martenot, was one of experimentation. Instruments were built, redesigned, customised. Features were added, removed, reimagined. It is therefore difficult to justify categorising the Ondes Martenot as exclusively a pre-World War II instrument: its life cycle had only just begun. Whether the later changes, such as transistors instead of lamps, are seen as minor variations or new models, tends to depend on the person asked, as will be demonstrated in the interview analysis in chapter 5.

The timeline approach taken by many electronic music historians also runs the danger of painting instruments as precursors only. When placing instruments on a timeline with technological innovation as the main focus, the message that each instrument is an improvement on the earlier one becomes implied. The precursors then become failed experiments that have each led to the success of a future, more important invention. The idea that the Ondes Martenot is a precursor to the synthesizer only makes sense in cultural retrospect. The instrument is in fact, technically, a synthesizer, ‘an electronic musical instrument designed to synthesize sounds’.<sup>62</sup> The Ondes Martenot would, from the 1930s onwards, be rather proficient at sound synthesis: for example, the timbre *Octaviant* (symbol ‘8’) is a filtered sine wave where the bottom section is moved to the top, and the timbre *Creux* (symbol ‘C’) is a squared-off triangle wave.<sup>63</sup> All of these timbres were created using the two basic waves generated by the instrument: the sine wave and the triangle wave. So why is the Ondes Martenot not a fully accepted member of the synthesizer club? One of the possible explanations lies in the fact that the word was popularised in the 1950s by Harry Olson and others at the Princeton RCA laboratories:<sup>64</sup>

They updated Helmholtz’s ideas of synthesis, which had emerged through analogies among waveforms based on graphical methods, to an idea of synthesis suitable for a cybernetic era, where a multiplicity of forms could be expressed as patterns of data on the punched-paper coding system of the RCA synthesizer instruments (Manning 1985, Hayles 1999: 98).<sup>65</sup>

Moog’s adoption of the term for his widely popular series of synthesizers

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<sup>62</sup> Tara Rodgers, ‘Synthesis’, in *Keywords in Sound*, ed. by David Novak and Matt Sakakeeny, (London: Duke University Press, 2015), pp. 208-221 (p. 208).

<sup>63</sup> Jean Landry, interview, 23 May 2018.

<sup>64</sup> Rodgers, ‘Synthesis’, p. 210.

<sup>65</sup> *Ibid.*, p. 210-211.

cemented it in the public consciousness. He used new technologies such as transistors and voltage control to mass-manufacture his synthesizers, with great success. Interestingly, Martenot's transistorised instruments from the 1970s brought the instrument's synthesis design more in line with that of Moog and ARP, something the Ondes Martenot's current repairers are clear on. Dierstein admits that the transistor instrument is 'very similar to the ARP 2600', and Landry calls it a 'synthesizer with a lot more expressive possibilities'. This last comment points to the popular connotation of the word 'synthesizer': the Ondes Martenot is also a synthesizer, but with more expressive possibilities than the type of instrument one would generally think of when hearing the word 'synthesizer'. This again points to brands such as Moog and ARP, who achieved enormous commercial success and cemented the synth as a keyboard instrument with transistors, different waveforms and voltage control. The Ondes Martenot is not a commercial success, so by default is measured against its more successful 'cousin', as Laurendeau describes their relation.<sup>66</sup>

#### 3.2.4 Debatable success

The term 'success' is often used to justify which instruments are precursors of which others, and which are omitted from the timeline entirely. The issue of 'success' is challenging, because it is not a well-defined concept, despite being used often. Although not all authors use the term, the vast majority do distinguish the earlier electronic instruments from the later ones by discussing their lack of widespread use as a musical instrument and/or their lack of commercial success. Widespread use and commercial success are often conflated. Within this disambiguation, the Ondes Martenot's place is unclear.

Braun calls the Hammond organ 'particularly successful', and mentions the reasons for its success (easy to mass-produce, cost efficient and easy to handle), but does not specify what he means by 'success'. He does not mention the Ondes Martenot. Manning states that most 'electronic instruments of this type [...] failed to

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<sup>66</sup> Jean Laurendeau, interview, 24 May 2014.

establish any lasting position of significance'.<sup>67</sup> The Ondes Martenot, he says, is 'the only example of these original designs still encountered on the rare occasion in concert use,' and goes on to assert that its position is 'sustained by works such as Messiaen's *Turangalila* symphony and *Trois Petites Liturgies*'.<sup>68</sup> Although Chadabe does not explicitly equate mainstream status with commercial success, it is clear from his descriptions that the two are connected: based on commercial success, he describes the Ondes Martenot as 'never really achieving mainstream status', despite it being 'interesting and novel for a certain circle of musicians'.<sup>69</sup> Théberge is the only one who attempts to explore the notion of success. He admits that his categories of invention (or 'novelty device') and innovation (an invention with widespread use and commercial success) do not always hold up, and the Ondes Martenot is the chosen example for this. He says:

In this sense, the Ondes Martenot was more than a mere 'invention', a novelty device for the production of strange electronic sounds: its fundamental musical characteristics, expressly designed for performance purposes, allowed it to become an 'innovation' of considerable musical import, if only within a limited sphere.<sup>70</sup>

In contrast, Collins et al. briefly note that 'the [Ondes Martenot] was and remains very popular', citing a number of prominent composers, popular music artists, specialist classes at conservatories, and the Ondéa project<sup>71</sup> as evidence.<sup>72</sup>

Interestingly, authors cannot seem to reach consensus about the Ondes Martenot.

From these sources, it seems that commercial success is the make-or-break factor. That said, we must keep in mind that writing history is an exercise in looking back, and histories of electronic music are still characterised by a false causality due to its deterministic approach. Where are the failed versions of successful instruments, and why did they fail? Should we assume the inventors had their complete, mass-marketable instrument in mind when they started out? Or should we think of the development of technologies as messy, complex interactions, that don't

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<sup>67</sup> Manning, p. 5.

<sup>68</sup> Id.

<sup>69</sup> Chadabe, page 13.

<sup>70</sup> Théberge, p. 45.

<sup>71</sup> The Ondéa project was started by Ambro Oliva in 1997 to build new Ondes Martenot-like instruments. Although at the time it only produced a handful of instruments, most of which professional ondistes still play today, the Ondéa project was revived in recent years, resulting in the new Ondéa being available for purchase directly from the manufacturers since 2017.

<sup>72</sup> Collins, Schedel and Wilson, p. 39-40.



always go as planned? Pinch and Trocco advocate the latter, as evidenced in their study on the Moog synthesizer.<sup>73</sup> Their approach is a social constructivist one, rejecting technologically determinist, linear portrayals of history by following the *user* instead. Their analysis of the Moog's success reveals a particular vision, a number of significant interactions, and a good dose of luck. Using concepts from the social sciences, they label the instrument a 'boundary shifter', and its users 'liminal entities'.<sup>74</sup> The Moog was indeed able to transgress 'various boundaries between science and art, between pop music and classical music, and between music and sound.'<sup>75</sup> Its users, such as players Wendy Carlos and David von Koevering, did take on additional roles to become player-engineer and player-marketer, respectively. Pinch and Trocco in fact mention the Ondes Martenot early on in their book, calling it a 'strikingly innovative keyboard-controlled instrument'.<sup>76</sup> They subsequently refrain from including it in their list of widely accepted instruments (keyboard synthesizer, phaser, fuzz box) nor those that have fallen into obscurity (Trautonium, Hellertion, Crea-tone, Oscillion, Emiriton).<sup>77</sup> Again, the jury is out.

It is difficult to determine what existing academic sources on the Ondes Martenot think of the Ondes Martenot regarding success. It seems that many authors try to avoid making a final judgment on the instrument's success, and those that do seem to contradict each other. What is clear, however, is that although the notion of success has a recurring presence in the narrative of electronic music histories, its definition differs slightly from source to source.

### 3.2.5 Context of Use

The most significant absence in the literature is that of the instrument's context of use. The vast majority of the Ondes Martenot's descriptions in electronic music histories do not mention users or use, bar a few mentions of notable composers.<sup>78</sup> In

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<sup>73</sup> Pinch and Trocco, *Analog Days*.

<sup>74</sup> *Ibid.*, p. 308-314.

<sup>75</sup> Hans-Joachim Braun, review of 'Analog Days: The Invention and Impact of the Moog Synthesizer', *Technology and Culture* 44.3 (2003), 632-634.

<sup>76</sup> Pinch and Trocco, p. vii.

<sup>77</sup> *Ibid.*, p. vii-viii.

<sup>78</sup> Libin sees the focus on the role of composers in the development of instruments, as seen in Manning's assertion that the Ondes Martenot is 'sustained' by Messiaen's *Turangalila-Symphonie*, as

doing so, a century of music-making is neglected, which contributes to the perceived, but inaccurate, obsolescence of the instrument.

We can see a shift in this approach around the new millennium. Post-2000 sources spend more time discussing music practice, and are often better informed than before. This is at least in part because the authors start to lean on Ondes Martenot users for information. Holmes devotes five pages to the history of the instrument, presented as a case study in electronic pioneer Maurice Martenot.<sup>79</sup> The first four pages are dedicated to the instrument's technical development, but Holmes does acknowledge a range of composers, and even mentions a few virtuosi players. Looking at his sources, we can spot the French website of Ondes Martenot player and repairer, Claude-Samuel Levine, as well as personal correspondence with repairer and researcher (and later maker) David Kean in 2001.<sup>80</sup> Collins et al., albeit a briefer contribution, also acknowledge the continued development of the instrument, classical and popular repertoire, and the use of the instrument today. Their entry cites Holmes, but also the website of Ondes Martenot player and teacher Thomas Bloch.<sup>81</sup> At least up until 2010, Bloch's website was one of the only to provide English speakers with reliable and up-to-date information on the instrument and its use.<sup>82</sup>

On a few occasions, the narrative does have a user angle, where emphasis is placed on the inventor, who is hailed as a pioneer.<sup>83</sup> The inventor can be classified as a user, in the role of 'maker'. Although including the maker can be seen as a move away from the deterministic, technical-heavy approach, this form of presenting history has its own issues. The problematic notion of the 'pioneer' narrative has been covered by a number of scholars in electronic music.<sup>84</sup> It promotes the false idea that innovators work in isolation: the lone genius who dreamt up a vision that did not yet exist. In reality, these pioneers are surrounded by others and build on previous

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characteristic of early organologists, who considered composers as the source that fuelled as well as hampered technological development. Laurence Libin, 'Progress, Adaptation, and the Evolution of Musical Instruments', *Journal of the American Musical Instrument Society*, 26 (2000), 187-213.

<sup>79</sup> Holmes, p. 65-69.

<sup>80</sup> *Ibid.*, p. 66-67.

<sup>81</sup> Collins et al., p. 39-40.

<sup>82</sup> Thomas Bloch, 'Ondes Martenot', *thomasbloch.net* <[http://www.thomasbloch.net/en\\_ondes-martenot.html](http://www.thomasbloch.net/en_ondes-martenot.html)> [last accessed 10 December 2018]

<sup>83</sup> Holmes; Chadabe.

<sup>84</sup> Daphne Oram, *An Individual Note of Sound and Music* (London: Galliard, 1972); Tara Rodgers, 'Tinkering With Cultural Memory: Gender and the Politics of Synthesizer Historiography', *Feminist Media Histories*, 1.4 (2015), 5-30; Frances Morgan, 'Pioneer Spirits: New media representations of women in electronic music history', *Organised Sound*, 22.2 (2017), 238-249; Théberge.

inventions. Daphne Oram, in a now famous quote, states:

Do not let us fall into the trap of trying to name one man as the ‘inventor’ of electronic music. As with most inventions, we shall find that [...] many minds were, almost simultaneously, excited into visualising far-reaching possibilities. New developments are rarely, if ever, the complete and singular achievement of one mind... I wonder why we want so much to see one man as the hero of the occasion.<sup>85</sup>

The pioneer narrative, then, can be interpreted as reductionist in a different way: it simplifies the past to the point of misrepresenting it by reducing a complex process to the achievements of just one person. Théberge, in his study of the digital instrument market, writes:

Few of these stories take into account the context of invention, for example, the accumulation of scientific knowledge and engineering expertise in a particular field, which often precedes the invention itself, and the musical, social, economic and institutional forces that help or hinder it.<sup>86</sup>

Théberge here discusses the importance of including the wider context in the story of an instrument’s invention, but this can be further applied to its life beyond the point of invention. For the Ondes Martenot, in particular, we can identify multiple ‘points of invention’, as the instrument has been modified, optimised and reimagined several times over the past 100 years. Even during moments in between, there are musical, social, economic and institutional forces at work that shape the instrument's trajectory. The pioneer narrative, although certainly an attractive formula, is ultimately an inaccurate depiction of reality.

Another aspect of the Ondes Martenot story is not reflected: the women. Even though the majority of players have always been women — particularly in the early twentieth century, as is the focus of most of the sources — women are hardly ever mentioned. This is not entirely surprising, as this omission of women from narratives of electronic music history is all too common. Tara Rodgers states:

Despite the presence of women in analog technocultures, synthesizer histories tend to locate innovations in electronic music and musical instrument development as originating from male homosocial audio engineering and

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<sup>85</sup> Oram, p. 111.

<sup>86</sup> Théberge, p. 43.

electronics tinkering cultures.<sup>87</sup>

Frances Morgan, acknowledging that the lack of women has started to be addressed in recent years, warns of a new pitfall:

While much of this work seeks to challenge dominant narratives, redress a historical imbalance and forefront the work of important composers, musicians and technologists, it risks perpetuating another dominant narrative, that of the lone, exceptional female ‘pioneer’, which casts figures such as Oram in the heroic role that she warned against in 1972; this narrative serves to elevate a small number of women to the same stature as their male counterparts.<sup>88</sup>

Morgan states that historiographers must not fall into the trap of perpetuating harmful narratives that skew history even when they do try to address the gender balance. The pioneer narrative, as discussed above, is not the answer. The context of use must be considered as a whole. For the Ondes Martenot, this context includes a large number of women, which should be reflected in historical accounts.

The appearance of the Ondes Martenot in histories of electronic music is thus predominantly of a reductionist and deterministic nature. Due to the strong focus on technical features, the Ondes Martenot is often cast as a technical novelty, finished instrument and historical precursor, which ignores a rich musical context of use that continues today. To some extent, this focus is justified; the instrument is simply seen in its relationship with the main topic of the source (e.g. computer music), and does not require a detailed overview. We do know, however, that the Ondes Martenot had a significant impact on Pierre Boulez in the 1950s, albeit a mostly negative one. This impact had long-lasting consequences not only for the instrument, but also for Messiaen’s work and its reception, which is certainly relevant to the history of electronic music.

The portrayal of the instrument is particularly problematic because hardly any other sources on the instrument are available, and the English-speaking world is only exposed to these texts. (In contrast, other early electronic instruments, such as the Telharmonium<sup>89</sup>, the Theremin<sup>90</sup> and the Hammond organ<sup>91</sup> do have topic-specific

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<sup>87</sup> Rodgers, ‘Synthesis’, p. 21.

<sup>88</sup> Morgan, p. 238.

<sup>89</sup> Reynold Weidenaar, *Magic Music From the Telharmonium* (New York, NY: Scarecrow Press, 1995).

<sup>90</sup> Glinsky.

<sup>91</sup> Mark Vail, *The Hammond Organ: Beauty in the B*, 2nd ed. (San Francisco, CA: Backbeat Books,

sources that go deeper into the history and development of the instrument in its context of use, although the Vail book is not an academic source.) If we only see the Ondes Martenot as important at the time of invention, and don't talk about the impact and relevance it still has today, the instrument can easily appear obsolescent. For an instrument that is still finding its footing and relies on visibility to grow, these accounts can be damaging. The effects of this can be seen in a number of areas. One example is that Owen Chapman, one of the instrument's researchers, applied for a grant to create a research project on the Ondes Martenot in 2008.<sup>92</sup> Only the second version of the application was accepted: it no longer focused solely on the Ondes Martenot, but also the Theremin and Hammond organ, giving it an historical angle. The Ondes Martenot's active context of use, as demonstrated in chapter 2 and upcoming chapter 5, is currently not reflected in our histories of electronic music. The instrument and its users have continued to make waves beyond 1945, and their history is one we can learn from.

### 3.3 The Ondes Martenot in Sources Produced by Users

Ondes Martenot users have been producing their own resources for as long as the instrument has existed. Some of these are directed just at other users, but most have a wider scope. They vary in format: there exists, for example, a three-part treatise on playing technique<sup>93</sup>, a biography of the inventor<sup>94</sup>, a documentary<sup>95</sup>, a book on Messiaen including a chapter on his use of the instrument<sup>96</sup>, an obituary of another *ondiste*<sup>97</sup>, and a paper on conservation<sup>98</sup>. Some sources are in French, some in

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2002).

<sup>92</sup> Owen Chapman, interview, 26 May 2014.

<sup>93</sup> Loriod, Jeanne, *Technique de l'onde électronique type Martenot, vol. I: Jeu de clavier* (Paris: Alphonse Leduc, 1987); Loriod, Jeanne, *Technique de l'onde électronique type Martenot, vol. II: Le ruban et l'oeuvre éditée* (Paris: Alphonse Leduc, 1993); Loriod, Jeanne, *Répertoire de l'oeuvre écrite, vol. III: Piano or keyboard* (Paris: Alphonse Leduc, 1999).

<sup>94</sup> Laurendeau (2017).

<sup>95</sup> Martel, *Le Chant des Ondes*.

<sup>96</sup> Jacques Tchamkerten, 'From *Fête des belles eaux* to *St François d'Assise*: The Evolution of the Writing for the Ondes Martenot' in: Christopher Dingle and Nigel Simeone, eds., *Olivier Messiaen: Music, Art and Literature* (Aldershot: Ashgate, 2007), pp. 63-78.

<sup>97</sup> Cynthia Millar, *Jeanne Loriod: The leading player and tireless champion of a unique instrument*, *The Guardian* (6 September 2001)

<<https://www.theguardian.com/news/2001/sep/06/guardianobituaries>> [last accessed 16 October 2018].

English, and just one — Loriod’s treatise — is completely French-English bilingual. The writers are people who are close to the instrument: they own or work with it in varying capacities (performers, teachers, repairers, composers, researchers, documenters), or are otherwise actively involved in its existence and therefore have an inside perspective into the workings as well as the social network around it.

These sources give us a much more *modern* view of the Ondes Martenot than the mentions in electronic music histories. They provide considerably more accurate information, and by default embed the instrument in its context of use. Descriptions of features are linked to repertoire, sound and performance, users are mentioned by name, repertoire is discussed in detail, women are present. Whereas other sources remained vague on these issues, sources written by users show a keenness to provide detailed accounts of the activity surrounding the Ondes Martenot, as if to say, ‘yes, we do exist’. They show activity that is much more recent, or even current, rather than just highlighting repertoire from decades ago. Accounts written by users do run the risk of inserting bias into the reporting. This is the nature of primary sources, however, and all must be considered with attention to bias.

The information presented in user-driven sources is internally consistent. Models and dates are very rarely confused. This could be because many have personal connections to Martenot’s family and his contemporaries and thus access to detailed information. It could also be thanks to Loriod’s Ondes Martenot treatise and Laurendeau’s Martenot biography, which both detail the timeline of seven models. The two sources are considered bibles among users. The sources all discuss the instrument’s use and users, no matter the focus of the work. Descriptions of features are not the sole purpose, but the start of a discussion on sound, composition or performance. Loriod, in her treatise on Ondes Martenot technique, provides a brief history in which she discusses significant events alongside audience reception and impressions of notable composers. She also attaches an extensive list of existing players, composers and compositions, a practice Laurendeau repeats in his biography of Martenot. Tchamkerten’s chapter on Messiaen’s use of the Ondes Martenot is another example: his descriptions of the instrument’s features are interwoven with often lyrical descriptions of the sounds they allow the player to

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<sup>98</sup> David Madden, ‘Advocating Sonic Restoration: Les Ondes Martenot in Practice’, *Wi Journal of Mobile Media* 7.1 (2013) <<http://wi.mobilities.ca/advocating-sonic-restoration-les-ondes-martenot-in-practice>> [last accessed 10 December 2018]

produce, and to which end the composer chose them. Martel's 2012 documentary on the Ondes Martenot follows the current users as they rehearse, perform, record, research and repair their instruments. Owen Chapman's paper on the Ondes Martenot, Theremin and Hammond organ looks at genealogical resemblances between the instruments, and emphasises 'how the socio-cultural environments into which "new" technologies are introduced dramatically affect what they end up being used to "do"'.<sup>99</sup> It analyses the technologies from the angle of musical practices such as sound synthesis, and surfaces the Ondes Martenot's users by quoting Jeanne Loriod alongside anecdotes from Laurendeau's book. David Madden's paper on restoration practices for the Ondes Martenot provides a brief overview of the instrument's history and development before delving into museum practices and challenges. He, too, paints a dense network of instruments, users and institutions, providing twenty-first century examples along more well-known earlier ones. The twenty-first century sources, such as Madden, Chapman and Martel, also bring in more examples from popular music, film and tv, showing the ubiquity and varied nature of Ondes Martenot repertoire.

It is clear that users of the Ondes Martenot are dedicated to documenting their and other users' practice, perhaps for visibility and posterity. Their accounts of the Ondes Martenot are rich narratives that bring the instrument to life. It is no longer an isolated technological object, but a fully-fledged tool of music-making embedded in its musical context. The pre-1945 narrative is nowhere to be seen, the Ondes Martenot-as-precursor narrative is completely absent. The inventor-as-lone-pioneer narrative is entirely debunked thanks to Laurendeau's biography and its documentation of the early days of the Ondes Martenot. Recent developments regarding the Ondes Martenot require us to re-evaluate the ways in which we have in the past depicted and contextualised the instrument. Information on these developments can be found at the source: the users.<sup>100</sup>

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<sup>99</sup> Owen Chapman, 'Radio Activity: Articulating the Theremin, Ondes Martenot and Hammond', in: *Wi Journal of Mobile Media*, 3.1 (Spring 2009) <  
<https://web.archive.org/web/20090421133802/http://wi.hexagram.ca/?p=44>> [last accessed 30 May 2019].

<sup>100</sup> Around the time of this thesis' submission, an article (in English) in a French journal on organology was published that features a chapter on the Ondes Martenot written by British academic Peter Asimov. It is a pioneering study on the early history of the instrument, with a particular focus on the Ondes Martenot concert at the 1937 International Exposition of Art and Technology in Modern Life in Paris. Partly based on archival documents from the early decades of the instrument, it reconstructs the image of the Ondes Martenot from the point of view of the ondistes and the audience.

### 3.4 Conclusion

The Ondes Martenot, along with other early electronic instruments, is predominantly presented in a reductionist and deterministic way. In doing so, the Ondes Martenot's position as an instrument in Western music is misrepresented and its presence underestimated. This can directly and negatively impact the instrument's continued existence, as will be further explored in the following chapters.

Sources created by the instrument's users, on the other hand, contain a wealth of information and insight, and provide an answer to many of the deterministic issues the other sources reveal. They document the current context of use, such as new developments in its design and repertoire. I by no means advocate for all histories of electronic music to be written *solely* by users, as bias and lack of perspective must be considered. To largely ignore users, however, facilitates the production of sources that run the risk of presenting misinformed, or worse, reductionist ideas. Bias and lack of perspective can here, too, play a role.

The next chapter will detail the methodology of this project, starting with an exploration of approaches that actively try to address the issues uncovered above.

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Of note is that Asimov's methodology overlaps significantly with mine, as he too applies theories of Science and Technology Studies and puts users central. As my research is mostly focused on the twenty-first century, I am inclined to suggest that our efforts complement each other nicely. Peter Asimov, 'Une invention "essentiellement française": seeing and hearing the Ondes Martenot in 1937', *Musique, Images, Instruments: Revue française d'organologie et d'iconographie musicale*, 17 (2018), 107-126.



## Chapter 4: Methodology

To conceptualise the development of the Ondes Martenot in its context since 2000, I adopt a Science and Technology Studies approach, borrowing concepts from two particular frameworks, the Social Construction of Technology (SCOT) and Actor-Network Theory (ANT). To gather empirical data, I have conducted semi-structured interviews and performed thematic analysis on the data. This chapter outlines and justifies the chosen approach. In 4.1 Conceptual Frameworks, I will first critically evaluate past approaches to musical instrument studies, from organology to ethnomusicology and Science and Technology Studies (STS). Then follows a more detailed discussion of user studies. Lastly, I will delve deeper into the meaning and value of relevant methodological concepts used in the thesis. In 4.2 Empirical Data Strategy, I will provide an overview of my interview strategy, introduce my participants, and outline my data analysis process.

### 4.1 Conceptual Frameworks

#### 4.1.1 Approaches to Organology

The field of organology has traditionally occupied itself with the study of musical instruments. The classification of instruments, seen as a subfield of organology, has attempted to unify the myriad musical instruments found in cultures around the world in one overarching structure. The 1914 Hornbostel-Sachs classification, a tree structure based on the materiality of sound production, is the most well-known in the Western world.<sup>101</sup> It categorises instruments according to the materials with which their sound is created, such as strings (chordophones), breath (aerophones) and drum skins (membranophones). The proliferation of electronic instruments in the early twentieth century problematised their approach somewhat, as the materials used to produce sound in those instruments were often bits of metal, magnets or silica.

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<sup>101</sup> Erich M. van Hornbostel and Curt Sachs, 'Systematik der Musikinstrumente: Ein Versuch', *Zeitschrift für Ethnologie* 46 (1914), 553-590.

Davies therefore introduced the category of electrophones.<sup>102</sup> This category housed any instrument ‘in which electrical amplification is an essential part of the process of sound production’.<sup>103</sup> The subdivision among electrophones is as follows: if an instrument uses an electric oscillator to create sound, for example a lamp (valve), it is an electronic instrument. If it uses electricity to set in motion a mechanical oscillator, such as a tonewheel, it is an electromechanical instrument. If an instrument has an acoustic oscillator, of which the signal is picked up and amplified, it is an electroacoustic instrument.<sup>104</sup> The tree structure, although practical in its simplicity, proved restrictive in its real-world application, and many scholars have since proposed alternative classification systems.<sup>105</sup>

Although classification was not the only way to study musical instruments, it was long the most visible research area of organology, as studies dedicated to specific instruments were relatively rare:

Musical instruments are always treated by non-specialists as the “poor relation”. Depending on the context, the normal focus is either on what is ultimately the only really important aspect, the sounding of music in performance, or else on the lives of its major composers and, especially in recent years, of its star performers. After these come other considerations, such as music’s written-down notation, the accuracy of surviving manuscripts and the different versions of a composition, the authentic manner of performing earlier music, and so on. Last of all are the sources of all the sounds, the instruments themselves, which are almost always taken for granted, apart from the occasional mention of a Stradivarius violin, a Ruckers harpsichord or a Steinway piano.<sup>106</sup>

In this quote, Davies laments an overall lack of priority given to instruments by Western music studies, which is true for electronic instruments also, as evidenced in the previous chapter. He does, however, state that scholars would rather study

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<sup>102</sup> Hugh Davies, ‘Electronic Instruments’ and ‘Electrophones’, in *New Grove Dictionary of Musical Instruments*, ed. by Stanley Sadie (London: Macmillan, 1984) vol. i, pp. 657-690, p. 694-695.

<sup>103</sup> Hugh Davies, ‘Electronic Instruments: Classifications and Mechanisms’, in: Hans-Joachim Braun (2000), p. 44.

<sup>104</sup> *Ibid.*, p. 44-45.

<sup>105</sup> N.N., ‘Revision of the Hornbostel-Sachs Classification of Musical Instruments by the MIMO Consortium’, *Musical Instrument Museums Online* (2011) <<http://mimo-international.com/documents/Hornbostel%20Sachs.pdf>> [last accessed 14 December 2018]; Stephanie Weisser and Maarten Quanten, ‘Rethinking Musical Instrument Classification: Towards a Modular Approach to the Hornbostel-Sachs System’, *Yearbook for Traditional Music* 43 (2011), 122-146; Thor Magnusson, ‘Contextualizing Musical Organics: An Ad-hoc Organological Classification Approach’, *NIME Conference* (2017) [conference paper] <[http://ixi-audio.net/thor/Magnusson\\_NIME2017\\_MusicalOrganics.pdf](http://ixi-audio.net/thor/Magnusson_NIME2017_MusicalOrganics.pdf)> [last accessed 14 December 2018]

<sup>106</sup> Hugh Davies, ‘The Preservation of Electronic Musical Instruments’, *Journal of New Music Research* 30.4 (2001), 295–302 (p. 295).

performance, players and repertoire than focus on the instruments. This observation is in stark contrast with approaches in studying electronic musical instruments, as seen in the previous chapter, which focus much more on technical features than performance, players or repertoire. This could be explained by the habitual ‘othering’ of electronic instruments, as technological feats, from acoustic instruments, which had a rich performance tradition.

In twentieth century ethnomusicology, we do find studies that place more emphasis on music’s socio-cultural context thanks to approaches borrowed from ethnology and anthropology. They often focus on non-Western music, however, and instruments are again not the main priority. Even prominent ethnomusicologist Bruno Nettl, in his seminal work *The Study of Ethnomusicology: Twenty-Nine Issues and Concepts* (1983) notes that he chose not to include ‘aspects of organology’.<sup>107</sup>

In response, Sue DeVale, in her 1990 article ‘Organising Organology’, argues for a multidisciplinary approach, encompassing description and classification (classificatory organology), analysis (analytical organology), and thirdly, creation, use and adaptation (applied organology).<sup>108</sup> DeVale attempts to bring to light the connections between previously separate disciplines, to encourage them to work together and blur the lines. Of note are the closing remarks, where applied organology is defined:

In applied organology, we have come full circle. Instruments in museums are catalogued, restored, reconstructed, and exhibited; makers improve their instruments and production methods; and composers and performers find new uses and sounds for old instruments or, along with makers, invent new acoustical and electronic instruments for us to begin anew classifying, analyzing and applying.<sup>109</sup>

This excerpt encompasses an approach missing from much of the literature on early electronic instruments. Here, instruments are seen as dynamic, evolving objects, shaped by the people using them. Users, in turn, occupy different roles such as performers and composers, and these roles are not static: performers can become makers, for example. Although DeVale promotes collaboration between the various disciplines, she does not go so far as to call for a blurring of the lines to create a

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<sup>107</sup> Bruno Nettl, *The Study of Ethnomusicology: Twenty-Nine Issues and Concepts* (Chicago: University of Illinois Press, 1983), p. ix.

<sup>108</sup> Sue Carole DeVale, ‘Organizing Organology’, *Selected Reports in Musicology* 8 (1990), 1-34.

<sup>109</sup> *Ibid.*, p. 28.

holistic methodology, where organologists become ethnomusicologists and analysts. I argue that, if the end result is expected to be interdisciplinary, then perhaps the entire research area of organology, scholars included, should build this interdisciplinarity into the research approach. If organological studies are supposed to be classificatory, analytic and applied, then perhaps we as scholars should not limit ourselves to just one strand, but consider all simultaneously as they apply to the instrument and its context. Work towards this has already begun.

In a much-cited blog post originally posted on New York University's blog on material culture, Allen Roda writes:

I propose that by studying the intimacy of [musical instruments'] sonic relationships, the physical experience of bodies interacting, and the cultural and intellectual knowledge that musical instruments embody and transfer; the musical instrument – human relationship could be a unique realm of analysis for a new organology that both draws from and contributes to an interdisciplinary approach to the human/non-human relationship. In order to understand the relationship between humans and musical instruments it will be necessary for organologists to use tools and methodologies from other disciplines such as the anthropology of material culture, actor network theory, and phenomenology.<sup>110</sup>

Roda here posits organology as being in a reciprocal relationship with the broader interdisciplinary area of the human/non-human relationship. We can visualise this field as partly overlapping with musical instrument studies, material culture studies and various other areas. In this blurring of disciplinary boundaries, Roda calls for a broadening of the organologist's skillset, so that they can borrow tools and approaches from other relevant non-music areas such as material culture, STS and philosophy. Interdisciplinarity starts not with scholars in separate disciplines collaborating, as DeVale advocated before him, but with each individual organologist's outlook and approach. Roda's post goes on to share relevant insights with regards to the use of ANT in organology studies. He proposes that the tools used in ANT studies can become tools of organology due to the ways in which they attempt to map out and describe the relationship between the instrument and its user, and the meanings created in their interaction. He explores this further in his 2014

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<sup>110</sup> P. Allen Roda, 'Toward a New Organology: Material Culture and the Study of Musical Instruments', *Material World* (21 November 2007) [blog] <<http://www.materialworldblog.com/2007/11/toward-a-new-organology-material-culture-and-the-study-of-musical-instruments/>> [last accessed 14 December 2018]

case study on the tabla.<sup>111</sup> ANT is less of a theory and more of a methodological approach used to study networks. It is a semiotic approach, in that it studies the relationships between actors and the meanings created from this interaction. These actors can be human and non-human, so neither the social nor the technological sphere is the main focus. Instead, phenomena, such as the use of musical instruments, are observed as the result of complex interactions between humans and non-human entities, be it objects, institutions or concepts. More details on this approach in 4.1.2.

A small but growing number of organological studies have since applied ANT, or some of its principles, to musical instruments and their context of use.

Ethnomusicologist Eliot Bates, in ‘The Social Life of Instruments’ (2012) also argues for using ANT tools in organology.<sup>112</sup> Bates argues for considering the *agency* of instruments as objects ‘entangled in webs of complex relationships’.<sup>113</sup> He leans on ANT to map out the network around instruments and investigate examples of instruments’ agency upon other actors in the network. Interestingly, his research into the saz and other instruments with specific roles in religious culture lead him to expand the human-object relationship to include the divine. His application of ANT concepts remains broad; subtle differences in terms or interpretations found among ANT scholars do not interest him.

In ‘Toward a New Organology’ (2013), John Tresch and Emily Dolan translate Foucault’s four dimensions of the self’s relation to the self (ethical substance, mode of subjection, ethical work and telos) into four categories that can be applied to scientific as well as musical instrument studies, so that both areas can benefit from the advancements of the other.<sup>114</sup> The four categories reveal the schools of thought from which they stem. The first, material disposition, has its origins in traditional organology and material culture, examining the parts that form the instrument.<sup>115</sup> The second, mode of mediation, can be seen as examining the agency of the instrument, founded in recent studies on the liveliness of matter, and in ANT, where

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<sup>111</sup> P. Allen Roda, ‘Tabla Tuning on the Workshop Stage: Toward a Materialist Musical Ethnography’, *Ethnomusicology Forum*, 23.3 (2014), 360-382.

<sup>112</sup> Eliot Bates, ‘The Social Life of Musical Instruments’, *Ethnomusicology*, 56.3 (2012) 363-395 (p. 372).

<sup>113</sup> Bates, ‘The Social Life of Instruments’, p. 372.

<sup>114</sup> John Tresch and Emily Dolan, ‘Toward a New Organology: Instruments of Music and Science’, *OSIRIS*, 28 (2013)

<sup>115</sup> See *Handbook of Material Culture*, ed. by Christopher Y. Tilley, Webb Keane, Susanne Küchler, Mike Rowlands and Patricia Spyer (London: Sage Publications, 2006)

agency is attributed both to human and non-human actors — not to mention the reciprocity of agency that can be found in studies on the co-construction of users and technology.<sup>116</sup> The third, map of mediations, describes the instrument and its relation to rules and external obligations, which could be seen as a network of power relations, again reminiscent of the ANT network, which includes human actors, non-human actors, concepts and systems. Lastly, *telos*, the ends to which instruments may be used, is often covered in ethnomusicology, as it often studies the role of an instrument in a particular culture.<sup>117</sup> The effort to combine approaches in scientific instrument studies and musical instrument studies is a useful one, although my view on these categories is that they are not radically different from the concepts in ANT: material disposition could apply to the instrument as actor, mode of mediation could be agency, the map of mediations would be the network, and the *telos* would be the context of use of the instrument. This again points to the usefulness of ANT in the discipline of organology.

Parallel to the branching out of ANT research into the field of organology, or put differently, the incorporation of ANT in organology, another STS approach has become a new organological approach: SCOT. The application to musical instruments of user-led research into the social development of technological innovations has become another way to broaden organology. SCOT broadens the topic area of a technology to its context of use, seeing users as agents of technological change and mapping out the development of said technologies in light of this social factor. These user-led studies rely on interviews with users to gain insight into this contextual factor, often hidden behind the more obvious technical features of the technology. Starting with Pinch and Trocco's 2000 study on the history of the synthesizer, so far only a very small number of studies have used SCOT as a methodology for their studies into musical instruments.<sup>118</sup> Part of the reason for this slow uptake can be the use of the word 'technology', which has

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<sup>116</sup> See William Connolly, 'The New Materialism and the Fragility of Things', *Journal of International Studies*, 41.3 (2013), 399–412; Bruno Latour, *Reassembling the Social* (Oxford: Oxford University Press, 2005); *How Users Matter: The Co-construction of Users and Technology*, ed. by Trevor Pinch and Nelly Oudshoorn (London: The MIT Press, 2003).

<sup>117</sup> See Carole Pegg, 'Ethnomusicology', *Grove Music Online* (2001) <<https://doi.org/10.1093/gmo/9781561592630.article.52178>> [last accessed 16 December 2018]

<sup>118</sup> Pinch and Trocco (2002); Trevor Pinch and Karin Bijsterveld, 'Sound Studies: New Technologies and Music', *Social Studies of Science*, 34.5 (2004), pp. 635–648 (p. 638); Karin Bijsterveld and Marten Schulp, 'Breaking into a World of Perfection: Innovation in Today's Classical Musical Instruments', *Social Studies of Science*, 34.5 (2004), 649–674; Harkins.

stronger connotations to electronic and digital objects than, say, acoustic instruments. Cary and later Chanan specifically make a case for labelling all instruments as technologies.<sup>119</sup> On the topic, Pinch and Bijsterveld argue that ‘thinking of musical instruments as technological artifacts with unique user communities brings sound studies within the domain of technology studies’.<sup>120</sup>

Although the number of SCOT and ANT studies in music is rather low, recent years have seen a number of studies that loosely incorporate some of the principles present in these approaches. Théberge studies the development of consumption habits of music technology as it entered the digital era. In his book, he links the driving forces of this development to histories of musical instrument trade, the music press, and music as a form of artistic practice. Théberge’s semiotic approach of studying a network of relationships can be seen to be similar to that of ANT, while his sociological angle and interview-based approach echoes that of SCOT.<sup>121</sup> In *Instruments of Desire: The Electrical Guitar and the Shaping of Musical Experience* (2000), Waksman assigns agency to the guitar as it shapes the social context of music-making, in a way that is reminiscent of ANT.<sup>122</sup> Also on the guitar, Dawe’s book *The Guitarscape in Critical Theory, Cultural Practice and Musical Performance* attempts to reveal the wide cultural landscape the guitar phenomenon has touched, stating that ‘the study of the guitar must locate its significance in the wider social and cultural contexts’.<sup>123</sup> Dawe, an ethnomusicologist, does not restrict himself to traditional ethnomusicological approaches. His use of the term ‘network’ is reminiscent of ANT in that it incorporates all human and non-human entities involved in the ‘phenomenon’ that is the guitar.

The field of ethnomusicology has traditionally observed music in its socio-cultural context. Even here, however, instruments continued to appear ‘in the margins of ethnomusicological inquiry in the early twenty-first century’<sup>124</sup>, with the exception of a number of works such as those mentioned above.

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<sup>119</sup> Tristram Cary, *Dictionary of Musical Technology* (Westport, CT: Greenwood Press, 1992); Michael Chanan, *Musica practica: the social practice of Western music from Gregorian chant to postmodernism* (London: Verso, 1994).

<sup>120</sup> Pinch and Bijsterveld, p. 638.

<sup>121</sup> Théberge, p. 8-11. See Raymond Williams, *Culture* (1977); Dick Hebdige, ‘Object as Image: The Italian Scooter’ (1981).

<sup>122</sup> Steve Waksman, ‘Reading the Instrument: An Introduction’, *Popular Music and Society*, 26.3 (2003), 251-261.

<sup>123</sup> Kevin Dawe, *The New Guitarscape in Critical Theory, Cultural Practice and Musical Performance* (London: Ashgate, 2010) p. 45.

<sup>124</sup> Bates, ‘The Social Life of Instruments’, p. 367.

#### 4.1.2 STS and User Studies

Technologies are never neutral; they are always embedded in and generated by a cultural context, and the most important cultural context is that of use.<sup>125</sup>

As we have observed in this and the previous chapter, studies into *electronic* music instruments in particular are largely absent, and where they do exist, the approach is predominantly technology-focused. To broaden the scope of the approach to include the context of use, we must also consider the user. As established in the previous chapter, an instrument's users bring key insights to the table. For the purpose of this thesis, which focuses on the recent developments in the history of the Ondes Martenot, it was important that users were consulted. This was firstly because existing sources were often vague, inaccurate and reductive; and secondly because the developments were still unfolding during the time I was doing my research, and some information was not yet disseminated to the wider public. Thirdly, it was important that users were consulted, because their accounts give insight into the forces at play in these developments. They help to find answers to some of my core research questions, such as: how established is the Ondes Martenot as a technology? Who and what impact the continuing existence of the Ondes Martenot? Who are its users, and what is the nature of their roles? How do users impact the instrument, and how does it impact them?

Though not on the Ondes Martenot, the lives of music technologies in their context have been explored through topics such as: digital instruments as consumer products (Théberge, 1997), how digital technology shaped music production, distribution and consumption (Taylor, 2001), the social construction of the synthesizer (Pinch and Trocco, 2002), acoustical technology and the culture of listening in early twentieth century America (Thompson, 2004), the influence of new technologies on music and listeners (Pinch and Bijsterveld, 2004), innovation in classical musical instruments (Bijsterveld and Schulp, 2004), and the mediation of technology in music-making (Tjora, 2009).<sup>126</sup> Every single one of these studies

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<sup>125</sup> Pinch and Trocco, p. 309.

<sup>126</sup> Théberge; Timothy Dean Taylor, *Strange Sounds: Music, Technology and Culture* (New York, NY: Routledge, 2001) ; Pinch and Trocco; Emily Ann Thompson, *The soundscape of modernity: architectural acoustics and the culture of listening in America, 1900-1933* (Cambridge, MA: The



presents the instrument as embedded in its context of use. The relationship between the user and the instrument is therefore central. It is not a coincidence that the studies mentioned here use STS approaches.

STS can be seen as the third generation of constructivist approaches which first emerged in the 1960s as a clear departure from the technologically deterministic idea that technology drives, or shapes, history. Further developed under the name Sociology of Scientific Knowledge (SSK), it then morphed into the sociology of technology in the 1980s.<sup>127</sup> It concerns itself with the study of science and technology as embedded in its context, as well as the social construction of scientific knowledge.

Although ANT and SCOT have a great number of things in common as STS approaches, they differ on a number of levels. ANT is, despite the name, not a theory but an ontology. It provides tools and concepts with which to observe the world in its complexity. It applies semiotics to technologies and knowledge, aiming to observe how these are constructed, or *performed*<sup>128</sup>, by tracing translations of meaning between the actors involved, be it human or non-human. It is broadly anti-essentialist but does acknowledge non-human entities' potential to have agency. ANT terminology is vague on purpose, as it aims to let actors describe their own space, with their own words, rather than letting sociologists superimpose their *a priori* frameworks on their participants' reality.<sup>129</sup> Allen Roda's 2014 study on the tabla applies the flat ontology principle from ANT to the instrument and its workshop environment.<sup>130</sup> In placing both human and non-human actors in a 'flat' hierarchy, he reveals the instrument as a 'composite network of actors', or 'various forces [playing] against one another'.<sup>131</sup> With a particular narrow focus on the workshop stage, where the tabla is repaired and tuned, among other things, Roda

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MIT Press, 2004); Pinch and Bijsterveld; Bijsterveld and Schulp; Aksel Tjora, 'The Groove in the Box: technologically mediated inspiration in electronic dance music', *Popular Music*, 28.2 (2000), 161-177.

<sup>127</sup> Trevor Pinch, 'Technology and Institutions', *Theory and Society*, 37 (2008), 461-483 (p. 469).

<sup>128</sup> Performed, here in the sense of performativity, i.e. socially constructed through actions. Not to be confused with musical performance. A theory originally developed by Judith Butler in her 1990 book *Gender Trouble*; a brief synopsis of performativity can be found in the second edition. Judith Butler, *Gender Trouble* (New York, NY: Routledge, 1990); Judith Butler, *Gender Trouble*, 2<sup>nd</sup> edn (New York, NY: Routledge, 2007), p. xv-xvii.

<sup>129</sup> On this topic, Latour has defended himself from critique regarding the awkward ANT vocabulary by saying it 'does not mean, however, that our vocabulary was too poor, but that, on the contrary, it was not poor enough'. Bruno Latour, 'On Recalling ANT' in: *Actor Network Theory and After*, ed. by John Law and Hassard (Oxford: Blackwell, 1999) pp. 15-25 (p. 20).

<sup>130</sup> Roda, 'Tabla Tuning on the Workshop Stage'.

<sup>131</sup> *Ibid.*, p. 380.

addresses the material aspects of the instruments, showing the affordances and constraints of the instrument as exerting agency upon the network. His paper is for this reason called a ‘materialist’ musical ethnography.<sup>132</sup> Compared to the current project, Roda’s paper covers just one particular area of the instrument’s network, and importantly, a snapshot in time rather than an evolution. For this purpose, it makes sense to bring in the discipline of materialism. The current project has a wider scope, however, and although an ethnography of the repair stage of the Ondes Martenot would be a fascinating study, it would not provide the insights this study seeks to address.

The Social Construction of Technology (SCOT) is a social constructivist theory that sees technology as constructed, or shaped, by humans. To study the invention, development and eventual success or failure of a technology, we must study the people who were involved. The theory was modelled after approaches in the Sociology of Science and Technology (SSK), the precursor to STS, which aimed to study how scientific knowledge is socially constructed. SCOT proponents argue that, as technology does not exist in nature, it is man-made, and its creation and development can be traced back to human involvement.<sup>133</sup> SCOT studies analyse the innovation and development of technologies by studying their ‘relevant social groups’, and the meaning they share of what the technology is to them.<sup>134</sup> ‘Interpretive flexibility’ is the stage where different relevant social groups disagree on what a technology is meant to be, do or look like. ‘Stabilisation’ of the technology is characterised by the gradual reduction of interpretive flexibility, where more and more people agree on one shared meaning, until one meaning becomes the dominant version. This stage is called ‘closure’, as the technology has reached its final form in the development stage.<sup>135</sup> SCOT has, since its birth in the late 1980s, received criticism mainly in three areas: one, technologies can reach the closure stage but be repurposed by a different group later on; two, SCOT does not account for power relations, for example the political oppression of a relevant social group;

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<sup>132</sup> Ibid.

<sup>133</sup> Sergio Sismondo, *An Introduction to Science and Technology Studies*, 2nd edn. (Oxford: Wiley-Blackwell, 2010), p. 98-99.

<sup>134</sup> Trevor Pinch and Wiebe Bijker, ‘The Social Construction of Facts and Artefacts: or How the Sociology of Science and the Sociology of Technology might Benefit Each Other’, *Social Studies of Science* 14 (1984), 399-441 (p. 414).

<sup>135</sup> Ibid., p. 419.

three, not only humans have agency, and this should be acknowledged.<sup>136</sup> Partly in response, SCOT has incorporated concepts such as the ‘agents of technological change’ who reappropriate technologies, and ‘non-relevant social groups’ who are invisible actors and groups.<sup>137</sup> The most well-known application of SCOT to the field of music is Pinch and Trocco's 2002 book *Analog Days*.<sup>138</sup> The book investigates the development over time and eventual commercial success of the Moog synthesizer over its contemporary competitor, the Buchla. Through interviews with users such as makers, players and sellers, Pinch and Trocco reveal a non-linear non-deterministic history of a technology over time, where failure and coincidence, and social agency in particular, play a role.

The broad methodological differences between SCOT and ANT approaches lie mainly in three characteristics: ANT studies are predominantly descriptions of moments in time, whereas SCOT studies tend to examine changes and developments over time; ANT posits that both human and non-human entities involved have equal potential for agency, whereas SCOT largely dismisses the importance of non-human agency due to the non-humans’ lack of intentionality; ANT studies adopt an ethnographical approach, whereas SCOT studies adopt an interview-based approach. Both approaches differ more greatly in their theoretical nuances, but for the purpose of this study, the similarities between the methodological approaches in the field are more relevant.<sup>139</sup>

In the overview below, I outline a number of studies that have contributed specifically to the area of user studies. Some on electronic musical instruments, some on computers, but each propose useful terms and concepts to use when discussing the relationship between technologies and their users. It shows that, when

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<sup>136</sup> Mackay and Gillespie criticised the idea of closure without acknowledgment of users’ potential to reconfigure technologies (1992); Langdon Winner criticised SCOT’s reliance on relevant social groups without investigating power relations (Langdon Winner etc, 1993); Callon criticised social constructivism for dismissing non-human actors and their agency (1987). Hughie Mackay and Gareth Gillespie, ‘Extending the Social Shaping of Technology Approach: Ideology and Appropriation’, *Social Studies of Science* 22.4 (1992), 685-716; Langdon Winner, ‘Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology’, *Science, Technology, & Human Values*, 18.3 (1993), 362-378; Michel Callon, ‘Society in the making: The study of technology as a tool for sociological analysis’, in: *The Social Construction of Technological Systems*, ed. by Wiebe Bijker, Thomas Hughes and Trevor Pinch (Cambridge, MA: The MIT Press, 1987), pp. 83-103.

<sup>137</sup> Pinch and Oudshoorn, p. 4.

<sup>138</sup> Pinch and Trocco, *Analog Days*.

<sup>139</sup> For more info on these theoretical nuances, see Trevor Pinch in conversation with Simone Tosoni, in: Simone Tosoni, *Entanglements: Conversations on the Human Traces of Science, Technology and Sound* (Cambridge, MA: MIT Press, 2016); Sisonondo.

it comes to user studies, SCOT and ANT approaches become progressively blended over time.

As stated above, Pinch and Trocco's *Analog Days* introduces two useful concepts: that of the *boundary shifter* and that of the *liminal entity*. The concept of boundary shifter means that the Moog is a technology that defies categorisation. Pinch and Trocco, informed by their interviews with users, see the instrument as occupying a space in between common dichotomies such as instrument vs machine, classical vs pop music, emulating old sounds vs exploring new ones.<sup>140</sup> They also explain that, rather than seeing Moog's decision to use a keyboard for his synthesizer as a 'sensible, technical standard', it can be interpreted as a conscious decision to 'embed into his technology a piece of existing culture — the idea that music is about intervals'.<sup>141</sup> Liminal entities are those users whose roles have shifted over time. They don't just fit one label, for example 'player', but take on new or additional roles to become 'player-marketer'. The book gives the example of David van Koevering, a Minimoog player who took on the role of salesman. Pinch and Trocco see this merging of roles as a crucial step towards the Minimoog's eventual success.

Woolgar's 1990 study of computer programme usability testing argues that the design of the technology, in this case the computer, enables only a particular kind of user to operate it.<sup>142</sup> He argues that technology *configures the user*, or in other words, the computer 'does what it does only in the context of an appropriate set of users'.<sup>143</sup>

Following on from this, Akrich develops the concept of the *script*. The maker or designer envisions a particular type of user for their technology, which is then built into the technology as a script for the user to decode.<sup>144</sup> It must be pointed out that the script approach in STS is predominantly featured in ANT studies, due to the agency ascribed to the technology in embodying the script for the user to decode.

In response to Woolgar, Mackay et al. explore the designer-user configuration of

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<sup>140</sup> Pinch and Trocco, p. 308

<sup>141</sup> Ibid., p. 309.

<sup>142</sup> Steve Woolgar, 'Configuring the User: Inventing New Technologies', in: *The Machine at Work: Technology, Work and Organization*, ed. by Keith Grint and Steve Woolgar (Cambridge: Polity Press, 1997), pp. 65-94.

<sup>143</sup> Sismondo, p. 101.

<sup>144</sup> Madeleine Akrich, 'The De-Description of Technical Objects', in *Shaping Technology / Building Society: Studies in Sociotechnical Change*, ed. by Wiebe Bijker and John Law (Cambridge, MA: The MIT Press, 1992).

computer system development and find this configuration to be reciprocal in nature: designers configure users, but are configured, firstly by their organisational context, and then also by users in return.<sup>145</sup>

Lindsay takes this argument even further, in her study on the TRS-80, a personal computer that went out of production, but was subsequently sustained by users who proceeded to hack and update it.<sup>146</sup> Lindsay not only examines the configuration between designers and users, but also that of user representation: users' identities in relation to the technology changed as they took on the role of maker, and in doing so, distinguished themselves from earlier users. User representations, such as that of the self-proclaimed 'hacker' in contrast with earlier passive users, are thus 'dynamically constructed by different groups'.<sup>147</sup>

Lindsay's chapter can also be linked to the concept of 'liminal entity', coined by Pinch and Trocco as inspired by Pickering.<sup>148</sup> Pinch and Trocco's liminal entities are users who take on different or additional roles. As seen in Lindsay's work, the users of the TRS-80, abandoned by their manufacturer, cross the boundary of user to become maker and repairer. Tjora, in 2009, expands the concept of the user script, introducing the notion of 'user trajectory', which may 'tie various scripts together over time for each technology user'.<sup>149</sup> Tjora, in line with Lindsay, uses ANT concepts, but applies the SCOT approach to examine the concept of user script over time, demonstrating 'how users' interpretations of limited technical possibilities can change during longterm usage'.<sup>150</sup>

Lastly, a recent study by Harkins on the Fairlight CMI, the first digital sampler, applies the SCOT method to explore the co-construction of user and technology.<sup>151</sup> In it, Harkins interviews the instrument's designers and users to explore the discrepancy between the designers' intended use of the instrument as a digital

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<sup>145</sup> Hughie Mackay et al., 'Reconfiguring the User: Using Rapid Application Development', *Social Studies of Science*, 30.5 (2000), pp. 737-757

<sup>146</sup> Christina Lindsay, 'From the Shadows: Users as Designers, Producers, Marketers, Distributors, and Technical Support', in: Pinch and Oudshoorn, pp. 29-50.

<sup>147</sup> Ibid., p. 50.

<sup>148</sup> Andrew Pickering, *The Mangle of Practice: Time, Agency and Science* (London: University of Chicago Press, 1995).

<sup>149</sup> Tjora, p. 164.

<sup>150</sup> Ibid., p. 175. Tjora's notion of the user trajectory finds a detailed case study in Tchamkerten's chapter on Messiaen's use of the Ondes Martenot. Tchamkerten not only outlines the changing use of the instrument throughout Messiaen's works, but also finds explanations for these changes in the instrument's immediate context, for example the new transistorised model and the influence of spectralism composers and their exploration of the Ondes Martenot's timbres. Tchamkerten, in: Dingle and Simeone, p. 72-73.

<sup>151</sup> Harkins.

synthesizer, and the eventual adoption of it by users as a digital sampler. The SCOT concept of interpretive flexibility, where users re-interpret an existing technology, provides a theoretical framework within which the participants' views can be understood.

#### 4.1.3 Concepts Used

In this thesis, an approach that borrows from SCOT and ANT will be used, and this is for a number of reasons. Below is a description of the chosen approach. I will briefly outline the various concepts, before delving deeper into each one.

Firstly, the thesis is longitudinal in focus; in its entirety, the work explores the development of the Ondes Martenot in its context of use, with a particular focus on the twenty-first century. For this reason, the SCOT methodology of user interviews is more appropriate than ethnography, which generally only describes a moment in time. The focus on trajectory rather than moment also means that ANT's focus on materiality is too narrow and detailed. Although materiality certainly features when instrument components are discussed, the idea that the context of use of the instrument can be characterised in terms of relational materiality is thus not a useful representation of the approach. When it comes to describing the instrument and its context, the ANT term of 'network' is applied in favour of 'relevant social groups', as the latter implies human actors only. The concept of the network as a flat ontology fits the non-hierarchical positioning of human and non-human actors with regards to agency. The network also has no centre; instead, pockets of the network are brought into focus as they are studied, and artificial boundaries are set to facilitate this. Actors are part of the network through the two-way agency that exists between them and the instrument. This is different from the 'relevant social group' because shared meaning of the technology is not the condition on which the actors are part of the network (that is agency); shared meaning is the *result* of the network. To describe the behaviour of the network over time, as is largely lacking in ANT studies, the SCOT concept of stabilisation is useful. It describes the strengthening of the network over time, as characterised by more actors, more established relationships, and a more unified shared meaning of the technology. Lastly, interpretive flexibility is

borrowed from SCOT to indicate differences in shared meanings by different groups, be it due to the relative youth of the network, or later on, due to new developments that change the network.

- **Actors, agency and co-construction**

The term ‘actor’ is used across STS studies, and is no longer particular to ANT. It denotes an entity from which agency is detected, or upon which agency is detected. Latour, who prefers to use ‘actant’ to move away from the human connotation of ‘actor’, describes it as ‘something that acts or to which activity is granted by others’.<sup>152</sup> Agency, or actantiality in Latour’s words, is ‘not what an actor does [...] but what provides actants with their actions, with their subjectivity, with their intentionality, with their morality’.<sup>153</sup> We can see evidence of actors’ agency in their actions, or in their level of impact over other actors or the network, but agency is present even when actors are not doing anything — the term refers to the potential for action. Both human and non-human actors have agency, which can be seen in the ways they constrain the actions of other actors; an instrument exerts agency upon its maker as they do upon it. Bates notes:

Translating this to the world of organology, it’s not sufficient (nor particularly helpful) just to say that instruments have agency; we have to understand how people, interacting with instruments (and perhaps at the same time with other objects) within particular spaces and places, are in a continuous and ever-shifting process of give-and-take, ceding control to the instruments, seizing control from them.<sup>154</sup>

Agency is thus more than a vector, a force from one actor to another; it is, in a way, the sum of the affordances and constraints two actors grant each other.<sup>155</sup> For this reason, user studies tend to speak of a ‘co-construction’ or ‘mutual shaping’ of two

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<sup>152</sup> Bruno Latour, ‘On actor-network theory: A few clarifications plus more than a few complications’, *Soziale Welt*, 47 (1996), 369-381 (p. 375). Original version in Danish in *Philosophia*, 25.3-4 (1990), 47-64).

<sup>153</sup> Latour, in: *Actor-Network Theory and After*, John Law and John Hassard, eds (Oxford: Blackwell, 1999), p. 18.

<sup>154</sup> Eliot Bates, ‘Actor-Network Theory and Organology’, *Journal of the American Musical Instrument Society*, 44 (2018, forthcoming).

<sup>155</sup> For more on affordances and constraints, see James Mooney, ‘Frameworks and Affordances: Understanding the Tools of Music-Making’, *Journal of Music, Technology & Education*, 3.2-3 (2010), 141-154.

(types of) actors.<sup>156</sup> As Roda puts it:

The relationship between player and instrument is so intimate that both are physically altered in the process – a topic that has sparked debate in organology with reference to methods of collections conservation (Fisher 2007), but needs to be addressed with regard to the effects instruments have on players. Learning to play a musical instrument shapes the player's body through the development of certain types of dexterity and the strengthening of particular muscles in a way that resembles the active relationship humans have with sports equipment as opposed to the passive bodily shaping of desk chairs.<sup>157</sup>

Organology, in Roda's view, should pay more attention to this phenomenon. STS concepts of agency and mutual shaping, or co-construction, are just one of many ways to start the discussion.

The idea that both humans and non-humans can have agency is more widely accepted than ever, and is no longer just a characteristic of technological determinism or ANT.<sup>158</sup> SCOT proponents do maintain that although both can be said to have agency, this is distributed unevenly in favour of humans, due to the fact that non-humans lack intentionality.<sup>159</sup> In reality, however, ANT analyses seem to acknowledge that 'humans appear to have richer repertoires of strategies and interests than do non-humans, and so tend to make more fruitful subjects of study', which illustrates that both approaches are closer together than they might seem.<sup>160</sup> For this study, the agency of humans and non-humans is assumed.

It is theoretically impossible to count the actors in a network. The exercise to study one entity or phenomenon simply means to bring into focus that area of the network which is most active in constructing its meaning. As actors are so intertwined, all we can do is try to describe those relations between actors that have the highest impact on its construction. For this thesis, although amateur users certainly play a role in the construction of the Ondes Martenot, I choose to focus only on professional users. Artificial boundaries imposed on the otherwise endless network, such as the choice to only interview professional users, allow me to narrow the scope of the project, so I can delve deeper into the nature of the inter-actor relationships responsible for the meaning-creation explored in this thesis.

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<sup>156</sup> Pinch and Oudshoorn; Harkins, *Following the User*.

<sup>157</sup> Roda, 'Toward a New Organology'.

<sup>158</sup> Trevor Pinch in Tosoni, p. 83.

<sup>159</sup> Sismondo, p. 90.

<sup>160</sup> Id.



- **Network**

Musical instruments constitute a fruitful site for ANT-style approaches, as they are intertwined in myriad forms of social relations, and instrumentalists and audiences often have distinctively intimate affective relations with them.<sup>161</sup>

These words by Bates indicate not just that ANT-style approaches can be applied to musical instruments, but that it is particularly useful due to the nature of musical instruments and their networks.

Although the term ‘network’ implicates ANT, the concept of a web of entities creating meaning can be found in numerous other theories. Hebdige calls them ‘moments’, Deleuze and Guattari ‘assemblages’, Bronfenbrenner ‘ecological systems’, Pinch and Bijker call them ‘relevant social groups’, Tresch and Dolan the ‘map of mediations’.<sup>162</sup> The definitions vary slightly<sup>163</sup>, but the overall principle remains the same: the entities are interconnected, and the nature of these relationships shapes the network. Changes in these relationships affect the network in real time. The entities, in ANT called actors or actants, are elsewhere called agents, objects or vital matter. I join Eliot Bates in pointing out that minor differences between scholars’ terms and interpretations thereof are not of significance to this project, which is more interested in the application of the concept to the Ondes Martenot. The relationality of the actors is at times called sociality or semiotics, but ultimately points to the relationship between two actors, which is where meaning is created.<sup>164</sup> Each actor has a certain agency over the actors it is connected to. Here, I prefer the ANT term ‘network’ over the SCOT term ‘relevant social group’, as the network contains human as well as non-human entities, whereas ‘social group’ points to humans only. The term also helps to picture the complexity of the relationships between different entities.

For this thesis, the term network is not only a useful theoretical concept, but also

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<sup>161</sup> Bates, ‘The Social Life of Musical Instruments’, p. 374.

<sup>162</sup> Dick Hebdige, ‘Object as Image: The Italian Scooter Cycle’, *Block*, 5 (1981), 44-64; Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (London: The Athlone Press, 1988); Urie Bronfenbrenner, *The Ecology of Human Development: Experiments by nature and design* (Cambridge, MA: Harvard University Press, 1979); Pinch and Bijker; Tresch and Dolan.

<sup>163</sup> Assemblage theory, for example, does not ascribe to the idea that actors have no agency outside of the network. See Martin Müller, ‘Assemblages and Actor-networks: Rethinking Socio-material Power, Politics and Space’, *Geography Compass* 9.1 (2015), 27–41.

<sup>164</sup> Bates, ‘The Social Life of Instruments’, p. 372.

a preferred term to ‘community’ when talking about users. As several of my participants have pointed out, the term ‘community’ implies a certain camaraderie or connection between users that would not be an accurate reflection of reality. Being professionals, they are often in natural competition with each other, for example for recordings and performances, for students, or for instrument repairs and sales. They do share a common goal — to expand the network and secure the instrument's future — but not everyone agrees on the best way to do so, and conflict does happen.<sup>165</sup> It is clear from my interviews, however, that the latest generation of users is more connected and collaborative than ever before, and they see this trend continuing in the coming years.

The ‘Ondes Martenot network’, for this thesis, encompasses all actors, human and non-human, that somehow have agency over the Ondes Martenot and its lifespan and development.<sup>166</sup> The network includes non-human actors and positions them on the same level as human actors, producing a non-hierarchical ‘flat’ ontology of relationships.<sup>167</sup> The network shifts over time, with relationships being built and broken, and actors appearing and disappearing, all influencing the stability of the network, be it positively or negatively. An example of a change in the network that positively influenced the future stability of the network was the addition of the ‘human actor’ Jonny Greenwood in the 1990s, whose interest in the instrument resulted in new repertoire in popular and film music, a spin-off synth controller called the French Connection, and a significant increase in the visibility of the instrument, which in turn added numerous more actors to the network.

An example of a change that negatively impacted the future stability of the network was a lack of agreement between Martenot’s son Jean-Louis and Mr Oliva, which was a contributing factor in the failure of the Ondéa project in the early 2000s. Oliva, at that point, was the network’s only hope in building new instruments, as discussed in chapter 2.

Whereas most other theories see the instrument as an actor in the network, I posit that the instrument is in fact the *result* of the network, based on the presumption that ‘the’ Ondes Martenot as an essential object does not exist. We cannot physically

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<sup>165</sup> I was asked by the participants who discussed areas of conflict with me, not to include details of this. They felt it was not constructive to do so, since these things are all in the past now.

<sup>166</sup> Agency as in effect, not intention.

<sup>167</sup> ‘Non-hierarchical’ only in the sense that societal hierarchies, such as that of the government vs a citizen, do not automatically translate into more vs less agency. It is, in this sense, a flat ontology.

touch ‘the’ Ondes Martenot, in the same way we cannot touch ‘the’ violin. We can only touch ‘a’ violin, a physical manifestation of ‘the’ violin, which may or may not deviate slightly from the shared meaning of what ‘the’ violin’ is. In ANT, this is framed in its semiotic approach: all entities ‘are produced in relations’<sup>168</sup> and have ‘no inherent qualities’<sup>169</sup>. Instead, the instrument as a concept is created out of several physical instruments, different instrument models, individual components, and also different types of users, institutions and concepts. We can more clearly conceptualise ‘the’ Ondes Martenot as the result of an active network of interconnected actors, continually ‘shaping’ its definition and meaning as changes in the network happen over time. The use of performativity in ANT can be useful here: relations are performed, and as a consequence, ‘everything is uncertain and reversible’.<sup>170</sup> We can visualise this by thinking of the brain, creating consciousness through the connection of neurons. Every second of a person’s life, the network is maintained by these connections between neurons. The network changes over time, as new connections are formed, or later in life, certain connections break off. This alters the person’s consciousness. Without the connections, the neurons alone fail to maintain the consciousness. In the same vein, the actors in the Ondes Martenot network actively maintain ‘the’ Ondes Martenot as a concept, just by continually influencing other actors (the continued availability of small electronic components to repairers, for example), connecting to new actors (such as the addition of Jonny Greenwood to the network), and managing the loss of other actors (such as the cut in funding for Montreal’s Ondes Martenot course in 1997). Due to these changes within the network, the concept, what the Ondes Martenot *is*, changes over time. This user-driven *shared meaning* determines, among its users, what an Ondes Martenot is and what it is not. This question of definition, this set of boundaries, will be explored in chapter 5.

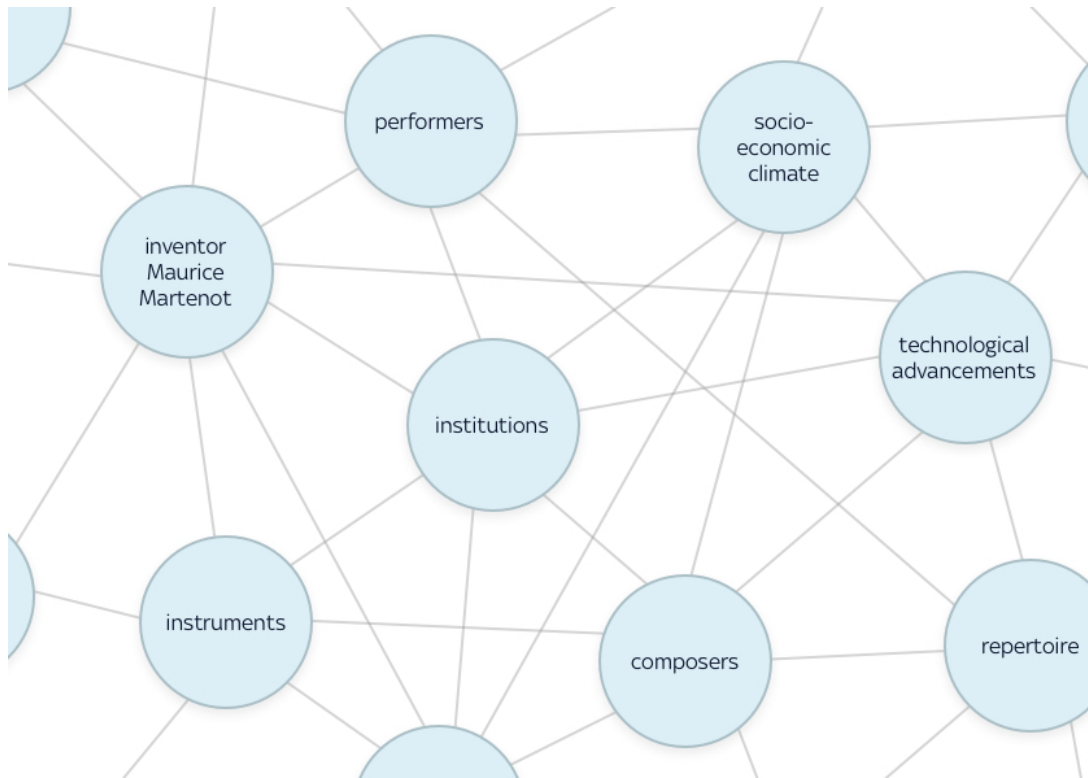
Figure 12 below shows a simplified graphic of different types of actors and their interconnectedness, although in reality they are not grouped together.

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<sup>168</sup> John Law in: Law and Hassard. p. 4.

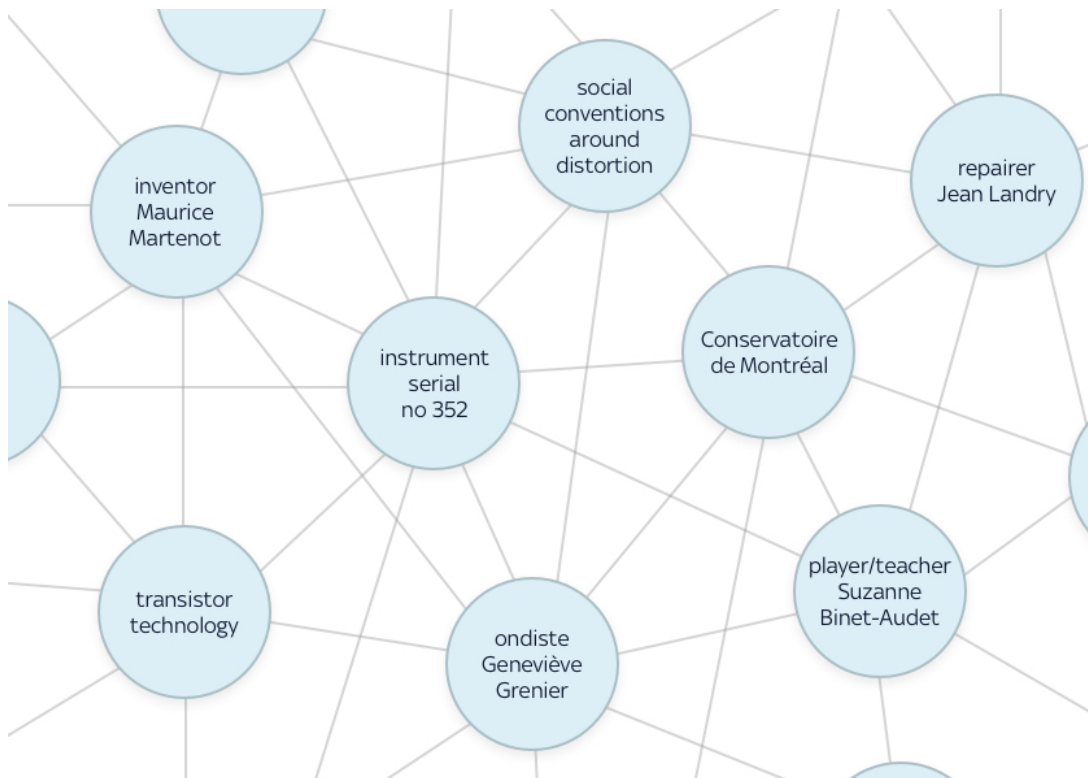
<sup>169</sup> Ibid., p. 3

<sup>170</sup> Ibid., p. 4



*Fig. 12: Actor groups in the Ondes Martenot network*

More accurate would be the image below, showing individual actors and their relationships.



*Fig. 13: Actors in the Ondes Martenot network*

Each connection is a story of agency. Geneviève Grenier's specific instrument exerts agency upon her, as its affordances allow her to play certain types of sound, and obstruct her from playing other types. In a broader sense, it allows her to continue her career, and shapes her role as player and teacher. She in turn has agency over the instrument, using its mechanics to create music, slowly producing wear and tear, but also sending it to Jean Landry for repairs. Jean Landry, the Ondes Martenot repairman in Quebec, has agency over Grenier as he is in control of whether her instrument is fixed or not, and how soon. She has agency over him through offering him paid work.

Other, more conceptual actors, can also have agency. 'Social conventions around distortion' are conceptually embedded in music practice.<sup>171</sup> They have agency because they define whether an instrument making a strange sound needs to be fixed, or whether the sound is acceptable and can be used as an effect. Grenier could have a certain agency over the meaning of the concept by using traditionally 'unacceptable' sounds in her work, playing her part in pushing the boundaries of the concept.

- **Stabilisation and interpretive flexibility**

In early publications on SCOT, such as the work on the social construction of the bicycle by Wiebe Bijker (1995), a concept called closure was applied, which indicated when a technology had reached its final form, i.e. when the relevant social groups are in full agreement and there are no more conflicts.<sup>172</sup> Later studies criticised this concept, showing examples of users reappropriating technologies, such as that of the PC by Mackay and Gillespie.<sup>173</sup> In 2016, Pinch, in conversation with Tosoni, agrees that 'rather than this rigid closure, which perhaps we overemphasized in the earlier days, I'd see it more as a stabilization process:

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<sup>171</sup> Rebecca McSwain, in Braun (2000), applies Hughes' concept of the 'reverse salient' to the development of the electric guitar, demonstrating the reconceptualisation of distortion and feedback as music due to varying conceptions of reality. In doing so, she demonstrates that whether or not sounds are unwanted relies on social convention, and musical practice can change these conventions. Rebecca McSwain, 'The Social Reconstruction of a Reverse Salient in Electric Guitar Technology: Noise, the Solid Body, and Jimi Hendrix', in: Hans-Joachim Braun (2000), pp. 186-198.

<sup>172</sup> Wiebe Bijker, *Of Bicycles, Bakelite and Bulbs* (Cambridge, MA: MIT Press, 1995).

<sup>173</sup> Mackay and Gillespie.

stabilization may be a better term than closure.<sup>174</sup> In the ANT camp, Bates explains a parallel phenomenon in the nature and evolution of the network:

An ANT or vibrant matter approach also raises important issues about how to analyze the temporality of networks, and more broadly how to theorize culture, context or community. ANT scholars write of the durability of networks—the tendency for some networks to stay similar in form over long periods of time, and durability is a key issue in the analysis of musical instruments that seemingly have produced similar effects for hundreds of years. Yet, we must always be attentive to differently structured networks around the same instrument type, and the multiplicity of networks that may include even one particular instrument.<sup>175</sup>

ANT has been criticised for lacking a temporal dimension — with networks seen simply as snapshots in time — and this concept of durability, closely resembling the stabilisation factor, assesses this change of the network over time. Here, Bates notes that we tend to perceive many instruments — orchestral instruments, for example — as not changing over time, even though an analysis of their networks may show us otherwise.

This concept, be it stabilisation or durability, is useful to this project in that it can assess not just the strength of the network, but also its trajectory: is it becoming more or less stable/durable over time, and why? I have chosen to use the term ‘stabilisation’ in favour of ‘durability’, as it conveys a sense of direction towards higher stability, where ‘durability’ conveys a sense of protection from lower stability. Since both terms overlap significantly, I have chosen the term that best aids the description of the Ondes Martenot’s trajectory.

The term ‘stabilisation’ in SCOT is limited to the materiality of the technology. Closure has nothing to do with the continuation or success of the technology. A technology can become stable when the shared meaning of its form is no longer questioned, and all issues, as perceived by the dominant group at least, have been solved. This does not mean that it is safe from obsolescence, however, as we can see in Lindsay’s study of the TRS-80. This computer, in its stable, unchanged form, was about to disappear. It was only when users began to modify it and repurpose it, that it continued to exist. How, then, can we study a technology’s path towards a secure continued existence? How can we explore the work that goes into *that* form of

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<sup>174</sup> Pinch in Tosoni, p. 91.

<sup>175</sup> Bates, ‘The Social Life of Instruments’, p. 373.

stabilisation?

To conceptualise this, I propose to study the stabilisation of the technology's *network*. If the network is the collective of actors, human and non-human, involved in constructing a technology's shared meaning, or concept, then the stabilisation of the network is the gradual progression towards a strengthened, more mature, more durable network. In other words, rather than studying a snapshot of the network, as ANT is wont to do, we study the network as it changes over time. For the Ondes Martenot, this means we can study the evolution of the network of the instrument as it continually constructs the concept of 'the' Ondes Martenot.

The stability of musical instruments has been discussed previously. Davies comments on perceived stability in light of conservation:

The general impression of Western musical instruments based on those that participate in the modern symphony orchestra (plus the piano, pipe organ, acoustic guitar and occasionally the saxophone) is that these are completely standardized and interchangeable. But this is by no means the case, and never has been; every museum collection of instruments demonstrates this. Many instruments have been prominent for a time and then became unfashionable and soon forgotten.<sup>176</sup>

Achieving a higher level of stabilisation is often seen as a need or desire by users, but here, Davies argues that perceived stability could give a false sense of security. Even instruments that seem stable and standardised are not immune to changes in their environment. The progression of an instrument's network over time is not always one of increased stability; it can also show a decrease. Take away one key factor, such as funding, or a particular material needed for production — or, in the case of the Ondes Martenot, the support of Boulez and other prominent composers of the time — and the network wobbles. Also worth noting is that a high level of stabilisation in the network can have detrimental effects on the innovation process, as evidenced in Bijsterveld and Schulp's SCOT study on classical musical instruments.<sup>177</sup> The study shows how the long, rich history of well-known orchestral instruments can become a hindrance to further innovation and to the acceptance of new designs that solve important problems. In this light, the makers of orchestral instruments have what I would call the opposite problem of Ondes Martenot makers

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<sup>176</sup> Hugh Davies, 'The Preservation of Electronic Musical Instruments', p. 295.

<sup>177</sup> Bijsterveld and Schulp.

and repairers:

It is, indeed, ‘history’, in many forms, that today’s musical instrument makers have to cope with when seeking to innovate with classical musical instruments, notably those of the symphony orchestra. Such histories encompass orchestral culture, including its visual icons and ‘frozen’ ideals of sound, the patents of times past, the longstanding master-apprenticeship model of teaching, the individual histories of time-consuming practice leading to tacit knowledge; and the engaging character of the musical instruments, partly constituted by their wear and tear.<sup>178</sup>

Whereas the Ondes Martenot is still stabilising, the instruments in the symphony orchestra are here closed off to innovation due to ‘frozen’ ideas surrounding them. History, or perhaps more accurately, *tradition*, although providing stability for the instrument, becomes oppressive due to its resistance to change. The issue of stabilisation, whether it is desired or required, and if so in which form, is addressed in my interviews with users, as detailed in chapter 5.

## 4.2 Empirical Data Strategy

For this project, empirical data were crucial. In order to gain insight into the Ondes Martenot’s context of use, I spoke with those who are closest to the instrument: the users. Interviews became the primary data gathering method, as is often the case in SCOT projects mapping out the trajectory of a technology over time.<sup>179</sup> Data captured are users’ knowledge, insights and experiences of participating in this context of use. In ANT, too, actors (here human or non-human) are regarded as crucial sources of information:

Actors know what they do and we have to learn from them not only what they do, but how and why they do it. It is us, the social scientists, who lack the knowledge of what they do.<sup>180</sup>

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<sup>178</sup> Bijsterveld and Schulp, p. 669.

<sup>179</sup> Ethical approval for the project was granted on 4 September 2012, ref. PVAR 11-099. See appendix D.

<sup>180</sup> Bruno Latour, *Pandora’s Hope* (Cambridge, MA: Harvard University Press, 1999), p. 128.



For this study, only professional users were selected for interviews to set reasonable boundaries with regards to the scope of the project.

#### 4.2.1 Gathering Data

It was important to me to allow users to define their instrument as well as themselves, and relay their motivations and challenges with regards to using the Ondes Martenot, as their voices had not been heard enough in the creation of sources on the instrument. I was privileged to be able to reach current users of the instrument, and their expertise and viewpoints would prove invaluable to this project. As the aims of the study did not call for it, I refrained from devising a full ethnographic project. The interview data, rather than empirical observations on my trip, drive the findings of the study. Out of more than 25 Ondes Martenot users I have been in personal contact with over the last ten years, a total of ten participants were selected for semi-structured interviews. Participants were selected via my existing contacts in combination with the snowballing method. Snowball sampling is a method of participant recruitment used in instances where, for example, ‘the population under investigation is “hidden” [...] due to low numbers’.<sup>181</sup> In this method, participants who agree to take part in the study suggest other participants they know. Bijker, in his SCOT study on bicycles, advocates this method to identify actors in the network.<sup>182</sup> In a niche area where many of the target participants know each other, this is an effective method, as it allows the researcher to be introduced by an acquaintance. Among the potential candidates made available through the snowballing method, participants were chosen on the basis of their role, their position in the Ondes Martenot network, and their availability during my field trip. The table below gives an indication of each participant’s profile and brief background.

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<sup>181</sup> Kath Browne, ‘Snowball Sampling: Using Social Networks to Research Non-heterosexual Women’, *Social Research Methodology* 8.1 (2005), 47-60 (p. 47).

<sup>182</sup> Wiebe E. Bijker, ‘King of the Road: The Social Construction of the Safety Bicycle’, in: Bijker, p. 47.

Name	Age bracket	Location	Role(s)	Bio
Suzanne Binet-Audet	70-80	Montreal	Player, teacher	Binet-Audet studied Ondes Martenot in Paris with Martenot and Loriod, and became a professional player and teacher in Montreal.
Jean Laurendeau	80-90	Montreal	Player, teacher, researcher	Laurendeau studied Ondes Martenot with Martenot and Loriod and became a professional player and teacher in Montreal.
Geneviève Grenier	40-50	Montreal	Player, teacher	Grenier studied Ondes Martenot privately with Binet-Audet and later with Laurendeau at the conservatory in Montreal. She teaches students privately.
Caroline Martel	30-40	Montreal	Researcher	Martel is a researcher and documentary filmmaker in Montreal. She made a documentary on the Ondes Martenot in 2012.
Owen Chapman	40-50	Montreal	Researcher	Chapman is Associate Professor of Sound Production and Scholarship at Concordia University in Montreal. He is an interdisciplinary researcher and a turntablist.
Jean Landry	70-80	Sutton	Repairer, maker	Landry is a technician and repairer of electronic instruments. He is the Ondes Martenot repairman for Montreal, and researched and built new components.
Pascale Rouse-Lacordaire	60-70	Paris	Player, teacher	Rouse-Lacordaire studied Ondes Martenot with Martenot and Loriod. She became a

				professional performer and led the Ondes Martenot course in Billancourt before Ratsimandresy.
Nathalie Forget	30-40	Paris	Player, teacher	Forget studied Ondes Martenot with Valerie Hartmann-Claverie. She has played in a variety of musical contexts, including rock. She currently leads the Ondes Martenot course in the Paris conservatory.
Nadia Ratsimandresy	30-40	Paris	Player, teacher	Ratsimandresy studied Ondes Martenot with Françoise Pellié. She is known for her contemporary music projects. She currently leads the after-school Ondes Martenot course in the conservatory of Boulogne-Billancourt in Paris.
Jean-Loup Dierstein	70-80	Paris	Repairer, maker	Dierstein is a technician and repairer and maker of electronic instruments. He became the repairman for Ondes Martenots in Paris, and builds replicas of Martenot's latest model under the name Ondes Musicales Dierstein.

*Table 1: an overview of the participants and their roles*

I introduce the participants in more detail at the start of chapter 5. In order to capture insights into the network, semi-structured interviews were used. Semi-structured interviews allow for the flexibility necessary for my project, as they investigate what users ‘know, what they do, and what they think or feel.’<sup>183</sup> Advantages of the semi-structured interview method are that they ‘offer the possibility of modifying one’s line of enquiry, following up interesting responses and investigating underlying

<sup>183</sup> Colin Robson, *Real World Research*, 3rd edn (Chichester: Wiley, 2011), p. 280.

motives in a way that postal and other self-administered questionnaires cannot.<sup>184</sup> Additionally, non-verbal cues can help to make sense of responses.<sup>185</sup> Disadvantages of the method are the lack of standardisation and the concerns it raises about reliability, and the difficulty in ruling out bias.<sup>186</sup> Despite these concerns, semi-standard interviews provide the type of data required with regards to the research questions: users' personal insights and experiences.

I asked participants a range of questions about their experiences with, and relationship to, the instrument and other users. A list of indicative questions can be found in appendix A. As dictated by the semi-structured interview approach, I largely let the user guide the way, only steering the discussion with follow-up questions and prompts from my prepared questions. Each interview was different according to the participant's background, role and expertise, but together they dealt with similar themes. The participants were interviewed during two field trips: one in Montréal in May 2015, and one in Paris in September 2017. Some interviews were held in coffee shops, some at conservatories, and most in the participants' homes. The interviews lasted between 01:03 and 02:43 hours, with a total of 17:06:54 hours of data and an average of ca. 01:40 hours per interview. Concerning the length of interviews, Robson indicates that interviews under half an hour are 'unlikely to be valuable', whereas interviews well over an hour may put off participants.<sup>187</sup> In this case, the users' willingness to speak with me for such a long time was likely aided by the fact that the research project aligns with their goals to increase the instrument's visibility. The interviews were recorded using an iPhone. Four interviews were conducted in English, five in French (which is my second language) and one in a mixture of French and English. I had French native speakers transcribe the French interviews for me, and I transcribed the English interviews myself.<sup>188</sup> Any quotes from the French interviews featured in the thesis have been translated by me. Where possible, I translated word for word, rather than adapting the quote to suit the English grammar of the translated sentence. This has at times resulted in quotes with language errors. However, in doing so, I have kept my involvement in the interpretation of the original quotes to a minimum, which is of higher priority to

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<sup>184</sup> Id.

<sup>185</sup> Ibid., p. 281.

<sup>186</sup> Id.

<sup>187</sup> Id.

<sup>188</sup> Transcripts are available upon request.

me: the voice of the participant comes through. Where I have quoted from a French interview, I have embedded the translated English and provided a footnote of the original French quote, to provide full transparency around my interpretation of the participant's words.

#### 4.2.2 Analysing Data

After the transcription, I used thematic analysis to uncover the common themes addressed in the interviews. Braun and Clarke identify six phases of thematic analysis:<sup>189</sup>

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

*Table 2: Braun and Clarke's six phases of thematic analysis*

Examples of the initial codes generated in phase 2 are: names; places; pedagogy; definitions; issues; community; repertoire; reception. The data from this analysis is used in chapter 5 to provide an initial structure in which to highlight common knowledge and concerns regarding the user-technology relationship. Here, the primary data guides the thinking process. Examples of themes that emerged in

<sup>189</sup> Virginia Braun and Victoria Clarke, 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology* 3.2 (2006), 77-101.

phases 3 to 5 are: the electronic vs acoustic debate; users' resilience; travel issues; scarcity of instruments; the role of repertoire; users' duty towards visibility; humility. In chapter 5, the data is first categorised in seven main sections: users defining the Ondes Martenot, instruments and repairs, performances and players, institutions and teachers, repertoire and composers, documentation and researchers, and the future. Within each section, the data are presented according to the themes that emerged in the interviews. The data is then contextualised in the wider academic framework, assessing its value and contribution.

#### 4.2.3 Limitations

There are a number of limitations to the above STS approach that should be acknowledged. To study the network of the Ondes Martenot, interviewing professional players, teachers, repairer-makers, composers and researchers is only a starting point. Amateur users, popular music artists, museum directors, recording engineers, roadies, as well as various forms of non-users, can be given a voice, too. Additionally, participants from more geographically diverse areas would have enriched the study, but also enlarged its scope significantly. The participants selected, due to their professional relationship with the instrument, are predominantly attached to large, established classical institutions such as conservatories, which could skew their answers in favour of the continuation of the use of the Ondes Martenot in these circles, and the related dismissal of any use that would bring them in danger. These views can indeed be found in the data, although they are mostly well-justified, and all participants are also in favour of use outside of these institutions and practices. Most participants in fact do also operate outside of said institutions, for example through working with popular music groups, or as private teachers.

STS methods in general are often criticised for remaining largely descriptive. This is particularly true for ANT. SCOT, with its close ties to innovation studies, does have more of an explanatory nature. Another criticism of STS is that the approach is not conducive to revealing power structures, particularly in political

cases.<sup>190</sup> The ease with which studies have overlooked or refrained from commenting on forces of oppression is indeed worrying. For the Ondes Martenot, the power dynamics between those users operating in professional circles and those outside of this, are not addressed in this study, since only professional users were surveyed. It would make an interesting further study.

As my approach is a blend of two existing approaches, it could be criticised for being neither here nor there. I do believe, however, that the blend of SCOT and ANT selects many of the strongest and most widely accepted STS concepts. Each approach separately would have limited the project significantly; ANT, for not being conducive to a long-term trajectory, and SCOT, for favouring human agency and not fully accepting the flat ontology of the network.

#### 4.2.4 Reflexivity

ANT perspectives, as Latour states, ‘solve the problem of reflexivity’ because fundamentally the distinction between describing and interpreting falls away, as there is only describing the relations between actors that create meaning:

The observer — whatever it is — finds itself at par with all the other frames of reference.<sup>191</sup>

By ‘the problem of reflexivity’ Latour does not refer to the illusion that is the objective researcher, but the illusion that the researcher who is an outsider to the network has a privileged status which grants them and their interpretation a level of objectivity. As the network is non-hierarchical, all actors are on the same level. As there is no interpretation, only observation, each actor translates meaning through their own frame of reference. Although Latour has a point, my research does not strictly apply ANT tools only. As my method includes semi-structured interviews, it is worth situating myself and my viewpoints with regards to the research and the participants.

By studying the Ondes Martenot, I have taken on the role of researcher and

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<sup>190</sup> Winner.

<sup>191</sup> Latour, ‘On Actor-Network Theory’, p. 13.

become an Ondes Martenot user myself. Over the last thirteen years I have made connections, produced information and spread awareness about the Ondes Martenot, which has changed the nature of the network. Although I do not have a personal bond with any of my participants, I do share with other users the wish for the instrument to continue to exist. However, my investment in its continuation is not in any way linked to my career, unlike many other users, predominantly players and teachers. This, alongside my unfamiliarity with the participants before the start of the project, affords me a certain level of distance that sets this research somewhat apart from the sources produced by users mentioned in the literature review. My methodology and academic rigour ensure that the interpretation of the literature and the data does not favour one outcome over another.



## Chapter 5: A User Perspective

For a long time I have wondered why the Ondes Martenot has found itself in its particular position: not quite mainstream, not quite forgotten. The previous chapters have gone a certain way towards answering this question from the angle of outward status and representation. We have explored its past history, academic literature, and relevant theories to start to make sense of the Ondes Martenot and the way it is currently understood.

It is now time to delve into the instrument's present inner circle. This chapter contains the findings of my qualitative research into the current context of use of the Ondes Martenot. By interviewing users, I have aimed to answer many of my core research questions, such as: What is the Ondes Martenot? How established is the Ondes Martenot as a technology? Has a core instrument been established, or is it still being redefined? These questions around the instrument's identity will be handled in 5.1. Who are its users, and what is the nature of their roles? What are their experiences, motivations and frustrations? How are the users influenced by the instrument, and how do they, in turn, shape it? What are the reasons behind the recent changes in the network of the Ondes Martenot? These questions will be handled throughout the next five sections, which each cover a specific topic and user role: instruments and repairers (5.2), performances and players (5.3), institutions and teachers (5.4), repertoire and composers (5.5), and documentation and researchers (5.6). Section 5.7 deals specifically with the future of the Ondes Martenot, considering questions such as: How do users see the instrument's future, and their own? Who and what impacts the continuing existence of the instrument? Lastly, 5.8 provides an overview of the findings regarding the network and its characteristics, evaluating the insights this particular STS approach has facilitated.

Out of the ten users interviewed, six live in and around Montreal, and four live in Paris. Of the six in Montreal, Jean Laurendeau and Suzanne Binet-Audet met while studying with Maurice Martenot and Jeanne Loriod.<sup>192</sup> They later became professional ondistes, as well as teachers at the conservatory in Montreal.

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<sup>192</sup> The interview transcript for Suzanne Binet-Audet can be found in appendix E; the interview transcript for Jean Laurendeau can be found in appendix K.

Laurendeau, who wrote the biography of Martenot, kept in regular contact with him through letters and visits, which informed most of the book. Geneviève Grenier is of a younger generation, having been a student of both Laurendeau and Binet-Audet.<sup>193</sup> She is widely known for her virtuosic ribbon technique. She regularly releases albums with her own music, and teaches students privately. Jean Landry was an electronics technician with a background in audio recording and sound reinforcement, and was hired to do the Montreal conservatory's instrument maintenance in 1987.<sup>194</sup> He gradually became interested not just in maintaining the Ondes Martenot, but also optimising it, and in recent years, he completed a funded project to create new digital components. He is now retired, but has started to pass his work onto a younger couple in the area. Owen Chapman is Associate Professor in Communication Studies as well as in Sound Production and Scholarship, at the university of Concordia in Montreal.<sup>195</sup> His research projects span across multimedia, music and performance, and he is also a turntablist. He gained a special interest in the Ondes Martenot after connecting with several users in the city, and has completed a research project featuring the Ondes Martenot. Caroline Martel is a Montreal-based documentary artist. She studied Communications and Media Studies at Concordia University, where she met Chapman.<sup>196</sup> Her first feature-length production, *Le fantôme de l'opératrice* (*The Phantom of the Operator*, 2004) included an Ondes Martenot soundtrack, after which she decided to create a documentary on the instrument, *Le chant des ondes* (*Wavemakers*, 2012). She has written articles on the Ondes Martenot to increase visibility and understanding of the instrument.

The four participants in Paris include three player-teachers and one repairer. Pascale Rousse-Lacordaire is of the generation of Laurendeau and Binet-Audet, and also studied under Martenot in the 1960s, and later Loriod.<sup>197</sup><sup>198</sup> She became a professional performer and taught Ondes Martenot to children at the conservatory of Boulogne-Billancourt. She has now retired and passed on the baton to Nadia

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<sup>193</sup> The interview transcript for Geneviève Grenier can be found in Appendix I.

<sup>194</sup> The interview transcript for Jean Landry can be found in appendix J.

<sup>195</sup> The interview transcript for Owen Chapman can be found in appendix F.

<sup>196</sup> The interview transcript for Caroline Martel can be found in appendix L.

<sup>197</sup> It must be noted at this point that not many players have had the privilege of studying the Ondes Martenot with Maurice Martenot. Of the six participants who are Ondes Martenot players, three have studied with Martenot, which is not an accurate reflection of the wider group of players, particularly the current cohort. It is an exception rather than the rule.

<sup>198</sup> The interview transcript for Pascale Rousse-Lacordaire can be made available upon request.

Ratsimandresy. Ratsimandresy studied the Ondes Martenot in the conservatory of Évry in Paris since she was nine years old, which is unusual among players.<sup>199</sup> She studied with Françoise Pellié Murail, wife of Tristan Murail. She is best known for her contemporary music projects, and teaches Ondes Martenot to children at Boulogne. Nathalie Forget had a background in visual arts and performance, before studying the Ondes Martenot with Valérie Hartmann-Claverie.<sup>200</sup> Aside from performing the classical repertoire, she regularly works in improvisation and rock music. She took over from Hartmann as teacher at the conservatory of Paris in 2016. Jean-Loup Dierstein has a lifelong background in electronics, and has been repairing and maintaining electronic instruments for decades.<sup>201</sup> In recent years, he has also become the main repairer of Ondes Martenots in the Paris area. Since 2011, he builds replicas of Martenot's last model under the name Ondes Musicales Dierstein.

Also featured in this chapter is Jean-Louis Martenot, who I had the privilege of briefly interviewing in 2012. He is not categorised as one of the main participants due to the fact that my project had only just started, and the range of questions does not line up with those in later interviews. Although this interview was thus not systematically analysed among the others, I have included his insights throughout the thesis, as they provide a valuable perspective of someone close to Martenot during his life, and someone equally invested in the continuation of his father's legacy. He can be categorised as a maker, due to his involvement in the build of the first digital Ondes Martenot after his father's passing.

The aim of this chapter is not to come to a final definition of the Ondes Martenot, nor a final description of its context of use, as this would negate the continuous and ever-morphing performance of the Ondes Martenot as a concept, a shared meaning. Rather, it aims to reveal the process of creating meaning, which goes beyond listing technical features, as the academic literature on the instrument is wont to do. Musical practice, including performance, composition, pedagogy and instrument building and repair, are crucial factors in this creation. The users of the Ondes Martenot are important actors, not just in creating this shared meaning, but in performing it daily, and in this work, helping to expose it. Our understanding of the Ondes Martenot is enriched by their perspective. It must be reiterated that the users

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<sup>199</sup> The interview transcript for Nadia Ratsimandresy can be found in appendix M.

<sup>200</sup> The interview transcript for Nathalie Forget can be found in appendix H.

<sup>201</sup> The interview transcript for Jean-Loup Dierstein can be found in appendix G.

consulted are, at least in part, if not wholly, the product of institutions embedded in the Western classical music tradition, and — to varying degrees — their livelihood depends on the continuation of said institutions. Therefore, their views may not reflect those of users more at home in popular music and /or DIY culture, of which there is a growing number.

## 5.1 Users Define the Ondes Martenot

### 5.1.1 Introduction

As explored in chapter 3, the definition of the Ondes Martenot is not as widely agreed upon as other more commonly used instruments. I asked the users of the instrument to define it themselves, by posing the question: ‘when is an instrument an Ondes Martenot?’ To answer this question, participants discussed the instrument in three different ways: they talked about the technical components, playing technique, and repertoire. Users discussed the features of the Ondes Martenot, such as the volume button, they discussed the practical issue of transferring playing skills onto a new instrument, and they stressed the importance of the repertoire in defining when an instrument is an Ondes Martenot. While the first, a focus on specific technical features, is an approach that mirrors that of academic literature on the Ondes Martenot, the latter two are issues around *activity*, around user-instrument interaction: users defining instruments based on their practice.

Through exploring users’ definitions of the instrument, a number of observations are made: users overwhelmingly reject the Hornbostel-Sachs classification of ‘electronic instrument’, and instead many opt for ‘electro-acoustic’; users see the volume button as the core of the Ondes Martenot; the Ondes Martenot is defined in part by the playing technique learned and taught by professionals; the Ondes Martenot is defined in part by the repertoire for which it is written; instruments that do not allow for the latter two are generally rejected as being Ondes Martenots. These findings help to understand why in recent years, certain initiatives to build new Ondes Martenots have been met with resistance from the users, while others are taking off.

In this section, the Ondes Martenot’s current users define the instrument, not just on a technical level, but on a practice-based level, rooted in the *use* of the instrument: through discussing playing technique and repertoire. These two factors, firmly rooted in musical practice, are used as benchmarks against which new instruments are judged. Focusing on musical practice alongside technical elements can stretch the definition of an instrument to accommodate (or exclude) variations in

instrument build, and allows for a more human-driven, non-deterministic understanding of technology as embedded in society. Additionally, it can give a more nuanced understanding of the evolution of the instrument and its trajectory as a technology. Descriptions of the Ondes Martenot in academic writing are usually limited to a list of important features with the implied understanding that the instrument was invented as a finished artefact and left unchanged. Users' accounts show that their musical practice strongly informs the continual construction of a shared meaning of the 'Ondes Martenot' concept: an *instrument de base*. Without this shared meaning, the physical instruments discussed would have overlapping characteristics, but no further connection to each other. A definition of this *instrument de base* can be useful in the context of the work users do to increase visibility of the Ondes Martenot. Compared to the confusing message coming from academic literature — conflicting descriptions, language mired in obsolescence — a strong identity grounded in current musical practice is far more effective in captivating the audience.

### 5.1.2 Electronic or Acoustic?

As a relatively young instrument that has not seen mass manufacture, the Ondes Martenot exists in various models and variations, which can make defining the instrument a challenge. Throughout the available literature, the Ondes Martenot has continually been defined by referring to technical components of the instrument and by positioning it within the Hornbostel-Sachs classification: as an electronic instrument. These often brief mentions have pointed to 1928 as the year of invention, but described features from much later models, effectively erasing or ignoring the continual development of the instrument across the twentieth century. One could say they imply that the instrument was introduced to the public as a finished product, when this could not be further from the truth. Definitions collated from users of the Ondes Martenot reveal a rather different picture.

One observation to come out of discussions of playing technique is around the common categorisation of the Ondes Martenot as an electronic instrument.

Participants rejected this categorisation based on their experience as users. Suzanne Binet-Audet describes the Ondes Martenot as ‘an electronic instrument... but it’s an acoustic sound’.<sup>202</sup> She remembers once asking her teacher Jeanne Loriod, ‘did you change the timbre?’, when in fact Loriod was playing with tiny nuances in the dynamics, which, in Binet-Audet’s words, ‘made it so that things start to respond differently, and the harmonics are set off’.<sup>203</sup> She speaks of the richness in the tone itself, variables, things that happen in the vibrato, that all point to an acoustic sound. Geneviève Grenier agrees that it is more of an acoustic instrument, but with an extra possibility, namely the duration of the sound. Pascale Rousse-Lacordaire also points towards acoustic:

It is completely an acoustic instrument that is so subtle that automatically, the smallest movement is detrimental, that’s for sure.<sup>204</sup>

Jean Laurendeau has an interesting take on the matter: upon hearing the Ondes Martenot for the first time, his clarinet player ears interpreted the sound as ‘une sublimation du son acoustique’, an ‘improvement or refinement of acoustic sound’. As a young boy in 1956, his musical background was likely entirely acoustic, so his ears tried to place this new sound in this context. In this context, we can interpret the word ‘sublimation’ as meaning ‘enhanced’, in the sense that the sound is *like* an acoustic sound, but better. In which way is it better? Laurendeau stresses at several points in the interview that the sensitivity of the instrument is the most important aspect of all, giving the example of dynamics: the Ondes Martenot can be as quiet as a flute in a quiet room, and can hold its own in an entire orchestra. Additionally, he states that the Ondes Martenot uses a traditional approach to sound that is not out of place in an orchestra.<sup>205</sup>

The users’ emphasis on the instrument's acoustic nature is in stark contrast with Brian Eno's view on electronic sound:

This music is different [from acoustic sound] in every sense except for the fact

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<sup>202</sup> ‘[...] un instrument électronique...mais c’est un son acoustique’ - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>203</sup> ‘[...] qui vont faire que les choses vont répondre autrement et les harmoniques vont se dégager’ - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>204</sup> ‘C’est complètement un instrument acoustique, qui est tellement subtile, que forcément le moindre défaut est préjudiciable, c’est sûr.’ - Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>205</sup> ‘[...] vraiment l’approche du son traditionnel’ - Jean Laurendeau, interview, 24 May 2014.

that it enters your sensorium via your ears. It is made differently, from different materials in different ways, by different people, to be heard in different places in different ways and at different times. It is arguably further from its “live” ancestor than cinema is from theater.<sup>206</sup>

Eno uses the analogy of theatre and cinema to describe the difference between acoustic and electronic instruments. He goes even further to argue that electronic sound can go beyond just mimicking existing acoustic sounds to create new sounds, likening this new medium to animated film: ‘frame-by-frame constructions with sound, rather than image, as the material.’<sup>207</sup> Eno was here not thinking specifically of the Ondes Martenot, but of later synthesizers, where timbre is generally not influenced by integral amps and speakers. For the Ondes Martenot’s users, part of the creative process of making sound lies in the selection of diffusors, each with their own unique *acoustic* sound colouring properties. It would be interesting to hear Eno’s thoughts on its position with regards to electronic music. Perhaps a suitable analogy for the Ondes Martenot would be a live screening of the film *Rocky Horror Picture Show* (1975), where local performance groups still regularly perform on stage in front of the projection as a ‘shadow cast’.<sup>208</sup> The blend of ‘electronic’ signal (the film) and ‘acoustic’ signal (cast) is thus represented. Or, to give an example in animated film, a performance of *The Wall* by Pink Floyd would embody the electronic-acoustic blend users insist makes the Ondes Martenot an instrument that defies mainstream categorisation.<sup>209</sup>

### 5.1.3 Technical

On the level of the instrument’s technical components, the players agree that the button, the *touche*, is the most essential feature. Its importance is expressed in a number of different ways. Binet-Audet compares it to the breath required to play a wind instrument. Laurendeau says it is the bow of a string instrument.

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<sup>206</sup> Brian Eno, ‘Foreword’, in *Material Culture and Electronic Sound*, ed. by Frode Weium and Tim Boon, (Washington, DC: Smithsonian Institution Scholarly Press, 2013), pp. ix-x (p. ix).

<sup>207</sup> *Ibid.*, p. x.

<sup>208</sup> Kristopher Bolz, ‘Rocky Horror Picture Show - Plaza Theatre in ATL’, *YouTube* (27 August 2016) <<https://www.youtube.com/watch?v=Ffn12mun1HM>> [last accessed 16 December 2018]

<sup>209</sup> Pink Floyd, ‘Pink Floyd - Empty Spaces - What Shall We Do Now? - Young Lust (The Wall Live 80/81)’, *YouTube* [uploaded by Riccardo Caiati] (15 September 2016) <[https://www.youtube.com/watch?v=a\\_vv1XSS\\_kc](https://www.youtube.com/watch?v=a_vv1XSS_kc)> [last accessed 16 December 2018]



Ratsimandresy simply says ‘because it is *you*’. This could refer to adding humanity (as in error) into the sound, but also to the idea of controlling, or sculpting, the sound with the button. The button controls the dynamics (volume), articulation (envelope) and phrasing of the music. Without it, there is indeed no sound. But how indispensable is the button in this specific form? As detailed in chapter 2, the volume button is remarkably sensitive. Taking away this level of sensitivity, for example by simplifying the button mechanism, creates an entirely different playing technique. The French Connection, Analogue Systems’ spin-off synth controller, also has a volume button, but the experience of using it is much less refined due to the lack of sophistication in the mechanism. This is most noticeable in the quiet notes: it is near impossible to hear the difference between complete silence (or open circuit) of the Ondes Martenot, and the instrument's quietest note.<sup>210</sup> In the quietest notes on the French Connection, one can hear the instrument start abruptly — there are not enough 'data points' in between. Due to this jarring difference in sensitivity, the French Connection is mostly rejected by the participants as an Ondes Martenot.

Binet-Audet stresses that the vibrato keyboard and the ribbon need to be included, also, with particular emphasis on the vibrato of the keyboard: ‘it would not be the same without.’<sup>211</sup> Martel, researcher and filmmaker, also puts the *touche* first, alongside the vibrating keyboard and the loudspeakers. She sees the ribbon as an afterthought. Jean Laurendeau argues that without the basic timbre ('O' or Onde), the instrument is not the same. Both he and Binet-Audet comment on the jarring, unrefined sound Jean-Louis Martenot’s instrument makes, as detailed in chapter 2. Binet-Audet, however, sees the French Connection as approximating the Ondes Martenot spirit. Turning the static keyboard into a moving one would help. Although the instruments have the official Martenot name, they are seen as further removed from the Ondes Martenot concept. Laurendeau does admit that timbre is not the most important part of the Ondes Martenot, and the playing technique is part of the reason why.

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<sup>210</sup> This was demonstrated to me by both Jean Laurendeau and Nathalie Forget during my visit.

<sup>211</sup> ‘[...] parce que le clavier sans vibrato se serait pas... alors faut qu’il y ait ça aussi’ - Suzanne Binet-Audet, interview, 27 May 2014.



Fig. 14: *The French Connection*, by Analogue Systems.

#### 5.1.4 Playing Technique

Several participants, when asked about the Ondes Martenot's essential features, steer the conversation towards playing technique. Not the sound generation, but the manipulation of that sound, is what stands out. Words such as 'control', 'construction', 'modelling' and 'sculpting' are used to describe this action. Ratsimandresy elaborates, saying that you don't hear the electricity, you hear the performer. Binet-Audet concurs, saying that 'every personality will express something different'. An anecdote that illustrates this comes from an encounter between Naoyuki Omo (maker of the Ondomo) and Nadia Ratsimandresy. She recalls him commenting on her playing, saying 'that's funny, it sounds different, it never sounds like that'. In reality, she was using the same timbre, but what he was hearing was her personal technique: 'he was hearing *me*'.<sup>212</sup> It all comes back to one word: sensitivity. A sound, a timbre can resemble the Ondes Martenot, but if it does not allow for the high level of sensitivity it could be any instrument: 'the basic characteristic of the Ondes Martenot is the electronic linked with the sensitivity.'<sup>213</sup> The Minimoog, for example, uses similar waveforms to the Ondes Martenot, but the closing of the circuit is much more abrupt, similar to an organ. The difference in attack is a key distinguishing feature, despite the similarity in timbre. In other words, the sound generation is far from the most important aspect to Ondes Martenot users — it is what you do with it that counts. This user-led way of thinking directly contradicts the Hornbostel and Sachs approach to classifying and defining

<sup>212</sup> Nadia Ratsimandresy, interview, 13 September 2017.

<sup>213</sup> 'La caractéristique de base des Ondes Martenot c'est l'électronique liée à la sensibilité' - Jean Laurendeau, interview, 24 May 2014.

instruments.

On the topic of playing technique, multiple participants stress the issue of transferable skills. Ratsimandresy states that she ‘will call any instrument Ondes that won’t hurt my technique.’<sup>214</sup> Many who attempt to recreate the Ondes Martenot do not, in the first instance, consider the skills of the performer. When professional players are presented with an instrument that has the same features, but in a different place, or with a different feel, their skills may not easily be transferred onto the new model. It might as well be a different instrument altogether. In the same way that organs and pianos and harpsichords require a different technique, and clarinets and saxophones do, there is a limit to the changes one can make to an Ondes Martenot for it to still be considered the same instrument. For this reason, the skills of the player are a not unimportant factor in the identification and even definition of the Ondes Martenot. Jean-Loup Dierstein, when working on his own version of the Ondes Martenot, recalls Valérie Hartmann-Claverie’s worry about the layout. He explains that ‘the distances between features were of the utmost importance: if you move the arch of a violin by a hair, for a repairer it won’t be a big deal, but for a musician that’s very, very important.’<sup>215</sup> On this topic, Ratsimandresy does think favourably of the Ondomo, which, although being a drastically reduced version of the Ondes Martenot, has a rather good approximation of the button technology:

If my skills are not denied, if I can use them, this is an Ondes. For me the Ondomo is an Ondes as well. [...] The fact that you can control the sound very precisely, with your inner flame, transmitting through the touche — this is the key of it, this is my technique, this is what I’ve learned throughout all those years.<sup>216</sup>

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<sup>214</sup> Nadia Ratsimandresy, interview, 13 September 2017.

<sup>215</sup> ‘C’est comme les violonistes, l’archet: vous mettez un grain de plus, pour un musicien c’est très très important.’ - Jean-Loup Dierstein, interview, 14 September 2017.

<sup>216</sup> Nadia Ratsimandresy, interview, 13 September 2017.



*Fig. 15: The Ondomo, made by Naoyuki Omo, has four octaves; its portability is emphasized by the handle on the front of the case.*

Playing technique is a combination of mental and physical skills, where over time thinking is replaced by bodily automation. For this reason, changes to the instrument result in a jarring experience, where automated gestures such as reaching out to push a button, flick a switch or press a key no longer respond to the desired sound. Much like driving a car made for the side of the road opposite to the one you were taught, the modified instrument forces the player to adapt their existing skills. These changes lie on a spectrum specific to the instrument and performer. One cannot simply state that moving a button by two millimetres is a smaller change than moving a switch by two centimetres: it very much depends on the player and which feature is affected. The button, known for its sensitivity, is one of the hardest features to ‘get right’ for an instrument builder. According to Dierstein, it has three functions: voltage controlled amplification or VCA, closing the circuit, and providing a specific playing sensation. Changes to the button are akin to changes in the reed of a wind instrument, bow of a string instrument or skin of a percussive instrument. To a professional player, the effect on the playing technique can be substantial, and even insurmountable. The digital version of the button is therefore required to, as much as possible, replicate the sensation of compressing the original leather pouch containing the powder mix.

For these reasons, users of the instrument define the Ondes Martenot as an

instrument on which their learned playing technique can be transferred to a reasonable degree. Herein lies the subjectivity: all performers acknowledge that each instrument requires a unique playing technique, therefore each new instrument needs to be relearned to some degree. Where one draws the line between reasonable and unacceptable is different to each performer. An illustration of this subjectivity can be found in the contrasting responses of two participants: Ratsimandresy, as discussed above, claims that the Ondomo is an Ondes Martenot. Forget has a different view:

This is the problem of the Ondomo for example, because you make everything a little bit smaller. For me it's not a problem if you don't play the classical score, but it would be a problem if I first would teach on this instrument and then after to a big one you have to change everything, it's not easy. [...] It's even difficult to change of the instrument the sound, and if you change the size it's just for every instrument it's like, it's too difficult.<sup>217</sup>

Despite the drastic difference in size, Ratsimandresy does not see it as an insurmountable problem. To her, the Ondomo's button technology is of an acceptable sensitivity, which is the most important aspect, and the much smaller size of the keyboard can be overcome with practice. Forget, although essentially agreeing that the change in size *can* be overcome, chooses to phrase it as a problem (too difficult), hereby revealing a different viewpoint. It can be said that on this topic, Ratsimandresy is simply more optimistic than Forget.

Forget recalls another time when playing technique stood in the way of changes to the design's lay-out: Jean-Louis Martenot, the son of the inventor, changed the height of the keyboard in his own design, and moved the drawer further to the right, which Forget claims would make it impossible to play certain pieces due to the way the right hand crosses over the left in the lower register:

So you have to keep the size. The timbre, the pedals, everything. You can change the size of the loudspeakers, though.<sup>218</sup>

Landry agrees that the controls need to be in the same area, so that the player won't be completely 'lost' trying to find them with their fingers:

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<sup>217</sup> Nathalie Forget, interview, 12 September 2017.

<sup>218</sup> Jean Landry, interview, 23 May 2014.

It's a matter of readjusting a number of reflexes, of course, but that person won't be lost.<sup>219</sup>

In reference to new instruments, he adds that the outer shell and circuitry, areas the player does not directly interact with, need to be standardised in order for the instrument to be commercially viable: a second purpose of standardisation.

These examples show that performers are used to a degree of standardisation they are loathe to give up. Does this mean that Jean-Louis Martenot's design was not an Ondes Martenot? In contrast to other efforts, this design did legally carry the Ondes Martenot name, but his instruments were categorically rejected by the performers, partly due to the layout changes, partly due to the jarring, unrefined sound the digital sound card produced.

What it does mean, is that the users' shared meaning of 'the Ondes Martenot' includes a certain degree of standardisation, dictated by decades of performance practice as well as an elaborate teaching method, initiated by Maurice Martenot and further developed by Jeanne Loriod as detailed in her treatise. Changes to the layout could mean that the teaching method would no longer apply, and Ondes Martenot teachers across the globe would need to adapt their method to each new instrument that deviates from the standard.

On the topic of standardisation, Jean Landry provides a different angle. Since Martenot was always eager to personalise his instruments to the needs of the purchaser, no instrument was ever the same. This became fairly problematic in certain circumstances, and simplification of the Ondéa design was necessary: standardisation of the outer shell (the legs, for example) was needed to make it more viable for manufacturing. The standardisation of the cables also made the instrument safer to set up.

At this point in time, the Ondes Martenot comes in different shapes and forms. The line between an Ondes Martenot and an instrument that approximates the Ondes Martenot is blurry, and players' opinions differ according to their own experience. Their opinions as frequent users of the instrument are important, as they feed back into the making process. They don't have total control over it, however, and due to the lack of instruments and the uncertain future of the Ondes Martenot, players are regularly forced to adjust their technique to changes in design. Some of these

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<sup>219</sup> Id.

changes, particularly those to do with the standardisation of the production process, could ultimately help the network to continue. Even those introduced by new makers, such as the size of Mr Omo's Ondomo, can solve important problems. The Ondomo, after all, is lighter, easier to travel with, and much cheaper. The changes can, however, just as easily create other problems, such as that of the difficulty in transferring Ondes Martenot playing skills due to layout changes. The playing technique, therefore, becomes a factor in determining whether an instrument is accepted as an Ondes Martenot.

### 5.1.5 Repertoire

As seen in Forget's example above, the definition of the Ondes Martenot, for many participants, is also closely linked with the instrument's existing repertoire: changing the size of the instrument is 'only not a problem if you don't play the classical score'.<sup>220</sup> Ratsimandresy says:

I will call any instrument that gives me the possibility to play a piece right for Ondes Martenot, an Ondes.<sup>221</sup>

Laurendeau concurs. He explains that it is very difficult to create new Ondes Martenot models that ensure that the Ondes Martenot parts in the existing repertoire can be played to a degree where the instrument is recognised as being an Ondes Martenot, and not any other instrument. Laurendeau here emphasises the features that manipulate the sound, rather than the sound generation or timbral options. He refers to the ever-important degree of sensitivity that makes the Ondes Martenot a unique instrument. Interestingly, Laurendeau is the only one who brings in the audience as an active participant in defining the instrument: the sound should be *recognisable* as an Ondes Martenot. This implies that Laurendeau identifies a shared meaning of what 'the Ondes Martenot' should sound like, and a (by definition subjective) opinion on when that sound is sufficiently approximated. The listener's spectrum he creates, between the untrained ear and the professional *ondiste*, is a

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<sup>220</sup> Nathalie Forget, interview, 12 September 2017.

<sup>221</sup> Nadia Ratsimandresy, interview, 13 September 2017.

problematic one in the quest to define the Ondes Martenot. Perhaps he simply meant to state that the outcome, the performed piece, is the most important defining moment. Laurendeau does use the repertoire to explain that there is a shared idea of what the Ondes Martenot sounds like, but does not identify who is qualified to distinguish between Ondes Martenot and non-Ondes Martenot.

Forget adds a complication to the mix: she explains that composers tend to write for the instrument they have access to, through the performers they collaborate with. Sometimes this means that parts can only be played by that specific instrument or model (in her case, her first generation Ondéa), due to different models having differing affordance sets.<sup>222</sup> The variations between instruments are a well-known issue among players. She therefore actively asks composers to compose for what she calls the '*instrument de base*' — the common denominator, as it were — so she can pass on the piece and use it in teaching. Forget's term '*instrument de base*' is a useful one here. Its French meaning is not just a basis, but a fundamental root. Instead of calling it the 'original' instrument, she does not point at one single instrument but a shared set of features found in many instruments, alongside each model's unique variations. Most composers write for the general Ondes Martenot as indicated on scores by 'O.M.', and whichever instrument is used in the performance (Ondéa, Dierstein, original Martenot), it should be able to play the 'O.M.' repertoire.

This all implies that there exists a shared meaning within the Ondes Martenot milieu of what 'the Ondes Martenot' is, and it is perpetuated (or *performed*, in the sense that it is socially constructed through actions) in part through the repertoire.<sup>223</sup> Not only does the existing repertoire (which provides paid work for Ondes Martenot users) demand a specific combination of affordances, new compositions have to adhere to this blueprint. Currently, this blueprint is dictated almost exclusively by professional users. The power to dictate what is important and what is not seems to lie mostly in the hands of those users who are affiliated with institutions: conservatories, orchestras, venues, organisations commissioning pieces. Money is not an unimportant factor here, as many users' livelihood depends on the Ondes Martenot. Variations in instrument build could destabilise the harmony between playing technique, pedagogy and repertoire, whereas standardisation would aid it.

There seems to exist a certain level of 'gatekeeping', where only a particular

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<sup>222</sup> Mooney, 'Frameworks & Affordances'.

<sup>223</sup> Butler (2007), p. xv-xvii.



type of user has input in the future form of the Ondes Martenot. This type of user is firmly embedded in classical institutions, which has implications for further development. In the example of repertoire, it could be argued that the importance of being able to play the repertoire on new Ondes Martenot models is stressed by these users due to the fact that their career in many ways depends on the repertoire.

## 5.2 Instruments and Repairers

### 5.2.1 Introduction

Instruments are central in maintaining the network. Original Ondes Martenots are rare, with Martel reporting that fewer than 300 were made over Maurice Martenot's lifetime.<sup>224</sup> As time goes by, increasing numbers fall into disrepair, and many are simply beyond help. The total number of playable instruments today is unknown, but is certain to be lower than 100. For this reason, the role of the repairer is crucial.

Ondes Martenot repairers are typically not performers or teachers, and tend to have a broad knowledge of multiple electronic instruments. They can be found nearby a hub of Ondes Martenot activity, such as Paris or Montreal. They are the first line of contact for the professional Ondes Martenot performers and teachers, with whom they often have a good relationship.

By examining repairers' roles and perspectives, we can detect a number of forces that enact agency upon the Ondes Martenot network. The instruments themselves, to outsiders, embody the Ondes Martenot meaning, although some physical instruments differ from this conceptual shared meaning. Their presence ensures that the Ondes Martenot network can continue: players can play, teachers can teach, repertoire can be performed. When these instruments, of which there are relatively few, break down, the entire network takes a much bigger hit than if, say, a trumpet player's trumpet is damaged, as there exist countless more trumpets, trumpet makers and trumpet repairers.

The repair and upkeep of the existing, playable instruments is crucial. Repairers are, in many ways, a necessary mediator between the instruments and their players. The repairers' role is shaped and reshaped by the instruments. The intricacy of the design creates the demand for specialist repairers who have a particular skillset. Their expertise is required thanks to the failing of the instruments. Repairers have been known to create replacement components of their own design, blurring the lines between repairer and maker. Some repairers, such as Jean-Loup Dierstein,

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<sup>224</sup> Martel, p. 40. This number has recently been disputed by David Kean, who posted the serial numbers of two instruments at the Montreal conservatory on Facebook: 509 and 525.

eventually started building new instruments, becoming full-blown repairer-makers. Repairers can therefore be seen as ‘liminal entities’.<sup>225</sup> Building the Dierstein does not, at first glance, seem to be a lucrative business, as the repairer's main clients, performers and conservatories, don’t often have a large budget. However, thanks to the recent increase in visibility of, and subsequent attention to, the instrument, newcomers have become the main purchasers of the model. The instruments can be seen to create a new type of user: the amateur. Where before, nearly all instruments were in the hands of the professional Ondes Martenot community, the new instruments allow newcomers to own an instrument themselves, even if they don’t have access to teachers. Their presence will, in time, change the face of the Ondes Martenot. As we will see in the subsequent chapters, instruments alone are not enough to stabilise the network.

### 5.2.2 Repairing the Ondes Martenot

The Ondes Martenot’s most unique feature is its sensitivity, and this can be a challenge to maintain. The circuits of even the most recent instruments from Marteno’s hand are decades old. Mechanical parts, once loose, will bump against other fragile components. Materials erode over time. The instruments are constantly on the move, from rehearsal space to performance venue to teaching space to home. As they are so heavy, they cannot just be slung across the shoulder: they are therefore dragged in and out of the car boot on a regular basis. Flight travel is a challenge on a whole other level, as will be discussed in the next section. The Ondes Martenot’s delicate mechanical components have to endure a fair amount of handling.

The Ondes Martenot is also challenging to repair. Martenot was known to finetune each instrument to the tastes of the buyer. Many original components are now obsolete or replaced by more efficient components due to industry advancements: the advent of the transistor is an example. This makes repairing instruments with older parts more challenging. There are times, however, when the newest components are the problem: digital parts require a very different skill set.

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<sup>225</sup> Pinch and Trocco.

This challenge is reminiscent of modern car repair, which these days requires software skills, as illustrated by the fact that in the UK ‘in 2003 all AA patrols were issued with laptop computers that could be plugged into the car’s electronics to diagnose the cause of a breakdown.’<sup>226</sup> The repair difficulty has immediate effects on the players: their instrument could be in the shop for weeks and require expensive treatment. For this reason, some owners send their instruments off for regularly scheduled servicing.<sup>227</sup> The Ondes Martenot, in other words, takes a considerable amount of effort to maintain. This challenge affects the entire network very directly: there is a veritable scarcity of working instruments, such that there is no market for them. (As some serial numbers are still unaccounted for, every once in a while an instrument is discovered, for example in a Parisian attic, where Jonny Greenwood’s instrument was discovered, and immediately resold.) Those that are repairable require a mountain of upkeep; not just the instruments, but also the diffusors, as Binet-Audet notes:

The *palme* is constantly broken, and there is no one to repair it. It’s very fragile.<sup>228 229</sup>

The issues affect not only performers, but also teachers:

Even to teach the Ondes, there has to be a technician beside you as a teacher, because you can no longer teach as soon as there’s a problem. We are not technicians.<sup>230</sup>

Due to the lack of instruments for students, more than one student usually depends on the instruments available in the conservatories. When there is a technical issue that requires repairing, it directly impacts the teaching experience. The intricate design prevents teachers from doing quick repairs, and the scarcity of repairers only

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<sup>226</sup> Stephen Graham and Nigel Thrift, ‘Out of Order: Understanding Repair and Maintenance’, *Theory, Culture and Society* 24.3 (2007), 1-25 (p. 16).

<sup>227</sup> Geneviève Grenier, interview, 27 May 2014; Nathalie Forget, interview, 12 September 2017.

<sup>228</sup> ‘La palme, elle est tout le temps brisée, donc il y a une personne pour la réparer. C’est très fragile.’ - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>229</sup> David Kean is in the process of finalising the design for a new *palme* that addresses the challenges the *ondistes* have faced with the original models, of which fragility was one of the biggest ones. David Kean, personal correspondence, 30 May 2019.

<sup>230</sup> ‘Même pour enseigner les ondes il faut qu’il y ait un technicien à côté de toi comme prof parce que, tu pourras plus enseigner, dès qu’il y a un problème. On n’est pas des techniciens, nous.’ - Suzanne Binet-Audet, interview, 27 May 2014.

adds to the problem.

As mentioned above, repairers are not performers. The two are not mutually exclusive in theory, but none of the repairers I interviewed play the Ondes Martenot to even a semi-professional level. To repair an instrument means to understand the demands on the performers, hence why each repairer works closely together with the performers of the instruments they repair. Although there are several Ondes Martenot players in and around Paris, work for Jean-Loup Dierstein is slow; he says ‘there aren’t many clients’.<sup>231</sup> He attributes it partly to the underfunded conservatories. Budget restrictions prevent broken instruments from being repaired. Ratsimandresy is of the firm belief that users should not focus too much on the Ondes Martenot’s technical difficulties, as it sends the wrong message.

I have 5 instruments here, this one is broken. I can’t have a quartet with my students. But if I start thinking ‘oh and then this one will die’ I should just stop playing and teaching. [...] Why should my producer commission a piece? What if the instrument is dying? If you think positively, they just say ‘man, it’s not working. What can we do?’ and then the solution comes out of your own small world.<sup>232</sup>

She explains that, if the players are not optimistic, it might deter other potential users such as makers and composers from investing time and money into the Ondes Martenot.

### 5.2.3 Repair Knowledge

If something happened to the few people who understand how the instrument works, it could have disastrous consequences for the performers. This was already a contentious issue when Martenot was still alive. Pascale Rousse-Lacordaire, who was a student of his, and later of Jeanne Loriod, says:

Martenot didn’t want to trust anyone else to make instruments. My entire youth I heard Jeanne Loriod say to him ‘you should train someone who can become your successor’, but Martenot would say ‘oh no, I don’t have the time, it’s too much

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<sup>231</sup> ‘Il n’y a pas beaucoup de clients.’ - Jean-Loup Dierstein, interview, 14 September 2017.

<sup>232</sup> Nadia Ratsimandresy, interview, 13 September 2017.

work'.<sup>233</sup>

Martenot ended up passing away very suddenly in 1980.<sup>234</sup> Mr Manière, his assistant, continued to repair existing Ondes Martenots, but did not become Martenot's successor as a maker of new instruments. Martenot's son Jean-Louis, with help from the government, tried to continue his father's legacy, but the result was below par.<sup>235</sup> The person who proposed to work on it made a number of promises about algorithms he could not keep, he said.<sup>236</sup> For players and teachers, securing a successor is a pressing matter. After my interview with Jean-Loup Dierstein, his soldering assistant joins us, who brings up the same concern: who will continue his work after him? He doesn't have a clear answer. Grenier also expresses her concern about Jean Landry's eventual retirement:

He's been working with us for 20, 25 years, at some point in time he might get bored, he might get tired of doing that. The other day I was at his, so I said to him, 'are you going to train someone?' I do think he'll train someone in Montreal, because [the village 1.5 hours outside of Montreal, where Landry lives] is far. I believe I've been to [said village] 5 or 6 times last autumn.<sup>237</sup>

Grenier mentions having had to visit Landry for repairs several times the previous autumn alone, which gives an indication of the amount of repairwork the instrument requires. Her hunch about a successor seems to be correct. Landry mentions he has been in contact with a couple that repairs electronic instruments, and he says:

As soon as [his project to replace old components with digital versions] is done and I know that everything is working correctly, I'm going to be moving things over to them. Time to pass the flag.<sup>238</sup>

Ratsimandresy used to play a transistorised Ondes Martenot previously owned by

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<sup>233</sup> Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>234</sup> Laurendeau (2017), p. 302-303.

<sup>235</sup> Jean-Louis Martenot, interview, 22 May 2012.

<sup>236</sup> Id.

<sup>237</sup> 'Ça fait 20 ans, 25 ans qu'il travaille avec nous, à un moment donné peut-être qu'il [Jean Landry] va se tanner [nag himself: get annoyed/bored with it], peut-être qu'il va être fatigué de faire ça. L'autre jour j'étais chez lui, puis, je lui disais mais, "est-ce que tu vas former quelqu'un?" Oui, je pense qu'il va former quelqu'un à Montréal, parce que Sutton [the village 1.5 hours outside of Montréal where Landry lives], c'est loin. Je crois que je suis allé 5 ou 6 fois à Sutton depuis l'automne.' - Geneviève Grenier, interview, 27 May 2014.

<sup>238</sup> Jean Landry, interview, 23 May 2014.

Jeanne Loriod, but since 2010, she plays an original Ondéa made by Ambro Oliva. It requires specialist repairs from a man called Rousselle, who works at a company affiliated with Oliva about 30 miles north of Paris. She says:

I go there every four months for my own instrument, but for the Ondea for the class I send it in once a year for maintenance.<sup>239</sup>

While the instrument used by Ratsimandresy's students in class has an annual maintenance appointment, her own instrument requires servicing three times per year. She, like Grenier, has to travel a fair distance each time.

Although it is far from the norm, sometimes performers take up the role of repairer by necessity. Most can troubleshoot only the basic issues, but Grenier seems to be good at it, according to Binet-Audet:

Geneviève is capable of repairing serious breakdowns, you know, not all of them, but she's very very good at the big ones.<sup>240</sup>

She tells the story of a time when she and Grenier arrived in Victoria, near Vancouver, Canada, only to discover that her instrument was 'completely broken, they [airport baggage handling] must've really thrown it to the side'.<sup>241</sup> Instead of the three planned rehearsal days, Grenier spent the entire time repairing the instrument. On the day of the concert it finally worked again, and they ended up doing a great performance despite the lack of rehearsals.

This anecdote shows a notable shift in user roles: the trained performer becomes an amateur repairer. The user representation of the performer is expanded to include advanced technical skills usually associated with that of the repairer.

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<sup>239</sup> Nadia Ratsimandresy, interview, 13 September 2017.

<sup>240</sup> 'Geneviève elle est capable de réparer des grosses pannes tu sais, pas toutes les pannes, mais des grosses, elle est très très bonne.' - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>241</sup> 'tout brisé, vraiment là, ils l'avaient jeté sur le côté' - Suzanne Binet-Audet, interview, 27 May 2014.

## 5.2.4 Repairers Become Makers

For those instruments that are beyond repair, the repairers try to design new components to replace broken ones. For Jean-Loup Dierstein, in Paris, the creation of a new circuit board for an Ondes Martenot at the Paris conservatory was the start of a journey that led him to the design of his very own Ondes Musicales Dierstein. It is essentially a copy of the seventh model.

Jean Landry in Québec created a new digital ribbon system that erodes about 100 times slower than the original system. He has also been working on a new button technology, prompted by a very specific issue. Suzanne Binet-Audet, one of his customers, plays an original Ondes Martenot with a leather pouch underneath the button. As the leather is porous, the pouch starts ‘leaking’ graphite after decades of wear and tear, and the electromagnetic qualities of the powder mix decrease as the graphite-to-mica ratio changes. To play at the same volume, the performer needs to press harder and harder over time. For Binet-Audet, who developed arthritis, it had become painful to play. Landry’s design, a digital technology, should restore the button to its original resistance, relieving some of the pain. Creating a new button is a very difficult challenge, as Dierstein explains:

The person who recreates it has to know their job — they must practically be a player.<sup>242</sup>

A performer’s perspective is essential, because the button, he explains, has three functions: firstly, it closes the circuit; secondly, it is an electronic amplifier that varies its gain using a control voltage (usually called a variable-gain amplifier (VGA) or voltage-controlled amplifier (VCA)); thirdly, it provides a particular physical sensation while playing. One could close the circuit and send the VCA signal without the pressing sensation, and vice versa, but bringing everything together is very challenging.

The anecdotes above show us some examples of the co-construction of technology and users. On the one hand, players are actively involved in the making of new instruments, ‘shaping’ the new technology by setting requirements that are a

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<sup>242</sup> ‘La personne qui le reproduit doit savoir son servir — il faut presque être interprète.’ - Jean-Loup Dierstein, interview, 14 September 2017.



reflection of their knowledge and skills. If the button technology does not live up to adequate standards, the maker must keep working on it. On the other hand, the same technology can have agency over the player, the effect of which can be seen in Binet-Audet's example: the gradual erosion of the technology requires the player to adjust their technique. When this becomes too painful, a solution needs to be found. From a pure technologically deterministic perspective, we could perhaps say that the instrument *secured its own future* through Binet-Audet: it caused her pain, which prompted her and Landry to look into a more durable button technology so she could keep using it. Social constructivists, on the other hand, would reject any claim of agency from an inanimate object, and instead suggest that it was Martenot who created the pouch in the first place, and Suzanne and Landry who instigated the redesign, without whom it would not exist. We could go even further and counterargue that Martenot could hardly be credited for the unintended consequence that is the malfunctioning of his technology, but instead, we can simply acknowledge that the creation of the new button technology was the result of complex interactions between the instrument, its designer, player and repairer-maker, hereby demonstrating the co-construction of technology and users.<sup>243</sup>

An interesting dilemma faced by repairers is that of restoration, reparation or optimisation. Should an instrument undergo conservation, restoration (repair to a playable state) or optimisation? David Madden's 2012 article 'Advocating Sonic Restoration: Les Ondes Martenot in Practice' touches on this, placing the Ondes Martenot within the material versus sonic conservation debate.<sup>244</sup> Dierstein finds that at this point in time, users have a choice. His own repairing practice for players follows the idea that 'we should keep the principle, but we should optimise it'.<sup>245</sup> He regularly replaces original components with technology also found in synthesizers such as the ARP 2600. It is very often a compromise between improving stability and retaining the sound quality. Sometimes a repair causes the sound to change, to the player's horror. An example of this was Dierstein's recent gong loudspeaker (D3 or *métallique*) repair. The motor caused issues, and Dierstein redesigned the

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<sup>243</sup> Bimber suggests the term 'unintended consequence' to describe one of three interpretations of technological determinism. See Bruce Bimber, 'Three Faces of Technological Determinism', in *Does Technology Drive History?: The Dilemma of Technological Determinism*, ed. by Merritt Roe Smith and Leo Marx (Cambridge, MA: The MIT Press, 1994), pp. 79-100.

<sup>244</sup> Madden.

<sup>245</sup> 'il faut garder le principe, mais il faut l'améliorer' - Jean-Loup Dierstein, interview, 14 September 2017.

loudspeaker to fix it, making it easier to transport in the process. The process did affect the sound quality: it now sounds a little bit more *aigu*, higher in pitch.<sup>246</sup>

I ask Dierstein about his feelings towards working on instruments made by other repairers. He explains that, yes, commercially speaking they are competitors, but at his age, he does not mind so much anymore. Even with new instruments on the horizon, he says he'll repair them if he is asked. Twenty years ago, he would have thought differently about it. He changes the topic to discuss the optimisations he has made on his own Dierstein model. In the new design, he has taken out a plank of wood to replace it with aluminium, as it is hidden from view anyway. It will make the instrument lighter, to help with transportation. He has also ensured that the drawer isn't so stiff to pull out. Lastly, he has changed the direction of some of the sliders in the drawer, to make more logical sense.

Dierstein's Ondes Martenot replica plays a significant role in the network's stabilisation. In July 2011, years after Mr Oliva had to stop manufacturing his Ondéa, the number of Ondes Martenot models in existence finally started to rise again. Today, in 2018, it is still in production, generating only a handful of instruments per year, but providing the network with a steady influx of working instruments that allow it to slowly grow and expand. Importantly, the design responds to a number of requirements users identified to secure a future for the instrument. More on this in 5.7.

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<sup>246</sup> Jean-Loup Dierstein, interview, 14 September 2017.



*Fig. 16: Naoyuki Omo and Jean-Loup Dierstein during Omo's visit to Dierstein's workshop in Paris.*

## 5.3 Performances and Players

### 5.3.1 Introduction

Performances are central to the Ondes Martenot network: they showcase the repertoire as well as the instrument, and are a source of joy as well as income for the performers. As with most other instruments, the Ondes Martenot is performed in a variety of settings: among a live orchestra, playing the work of a composer; in the studio recording a film score; in an ensemble with other ondistes; on its own, playing the performer's latest release; on a festival stage with a popular music artist; in a conservatory, in a student's final exam. Many of the playing opportunities are abroad, requiring performers to travel with their instruments. Of these opportunities, the most high-profile must be Messiaen's *Turangalîla-Symphonie*, which is performed regularly around the world. There is a certain amount of competition among performers for these sorts of well-paid jobs. This part of the network, that of performances and performers, gives insight into some of the ways the Ondes Martenot's unique position, as an instrument on the path to stabilisation, shapes the role of player.

As established previously, Ondes Martenot players are boundary shifters. Multiple players have other roles as well, such as teacher. That said, the vast majority of these users, do identify as players first and foremost.<sup>247</sup> Ratsimandresy, for example, says, 'I'm a performer first.' Forget concurs, stating that '*spontanément* I would say I'm a performer.' Only Rousse-Lacordaire firmly states that identifies as both player and teacher in equal measure:

I think that it is both at the same time, both in equal measure, and that is very important. It is very important to be a player on a profound level to be able to teach, to be able to pass on the passion to those who want to play the instrument, because it is difficult — well, for other instruments as well — to turn it into a career.<sup>248</sup>

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<sup>247</sup> Nadia Ratsimandresy, interview, 13 September 2017; Jean Laurendeau, interview, 24 May 2014; Geneviève Grenier, interview, 27 May 2014; Suzanne Binet-Audet, interview, 27 May 2014.

<sup>248</sup> 'Je pense que c'est vraiment les deux en même temps, les deux en pareil, et c'est très important. C'est très important d'être vraiment instrumentiste profondément pour pouvoir enseigner, pour pouvoir donner envie à ceux qui veulent de jouer de cet instrument, parce que c'est quand-meme

For her, the experience of being a player is paramount to the role of teacher, not just because it allows the teacher to perfect and continue to hone their playing technique, but also because it demonstrates to students that there is a future for those who are passionate and dedicated. If a teacher can inspire a student to continue to study the Ondes Martenot at the Conservatoire National Supérieur de Musique et de Danse de Paris, the higher education conservatory, then the more advanced repertoire, such as Messiaen's pieces, can continue to be played for another generation. Ratsimandresy stresses the duty of the player to continue the repertoire:

The main activity as performer is to continue the repertoire. That's the reason why it's so important that you see the instrument as a tool and the musician as a tool, to make the music happen.<sup>249</sup>

Ratsimandresy here reminds us of the function of her role and that of the instrument. In contrast with academic sources on the Ondes Martenot, which focus so heavily on the instrument as a technical innovation, as a stepping stone to other instruments, Ratsimandresy contextualises herself and the instrument in its musical context. Both are merely tools; the end goal is the music itself.

This section highlights the players' insights into their approach to the instrument and their relationship with it, but also the wider performance context, and the professional *ondiste* lifestyle. We can see that the Ondes Martenot, for most, is a blessing and a curse. It gives a tremendous amount of joy, and requires a tremendous amount of effort. It must be pointed out here that many of the challenges the instrumentalists face are particular to the instrument's form as it exists today. There are many future possibilities for instruments to become more stable, easier to travel with, more widely understood by the musical world, without 'the' Ondes Martenot, the *instrument de base*, losing its identity. Therefore, we can say that those challenges are situational rather than inherent in the instrument. As seen in the previous chapter, repairers are continually helping to improve the challenges players face, and advancements in technology create new opportunities every day.

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difficile — enfin même dans tous les instruments de musique — c'est difficile de gagner sa vie.' - Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>249</sup> Nadia Ratsimandresy, interview, 13 September 2017

### 5.3.2 *Coup de foudre*: Playing the Ondes Martenot

I asked players what attracted them to the instrument, and received a wide variety of responses. All players, at some point in the interview, mention the initial *coup de foudre* ('love at first sight') they experienced when introduced to the instrument. Laurendeau said that 'it was the kind of love at first sight that made you sign up there and then. You had to learn the instrument.'<sup>250</sup> Forget likens it to being under the influence of drugs. The first time she played it, she played for 45 minutes, and felt 'completely stoned.'<sup>251</sup> She explains that she was sensitive to the vibrations of the loudspeakers, that they had a particular effect on her, making her feel 'calm, and very sweet and spacey, floating.'<sup>252</sup> She goes on to say that for the first year, she felt like a drug addict, and even now, she still 'needs it'. When I ask her if she was naturally a calm person, she says: 'no, I was very active, and it made me quiet'.<sup>253</sup> The observation that users of the instrument, and players in particular, have such a strong emotional connection with the Ondes Martenot, can be explained by the fact that the instrument presents significant challenges to the player that other, more stable instruments don't deal with in such regularity. Therefore, it can be said that the lifestyle of an Ondes Martenot player is only suited to a particular type of person: the kind of person who is madly in love with it. In the words of Woolgar, the instrument can be said to 'configure' its user, to dictate for whom it will work optimally; not just in terms of playing technique, but in terms of the player's character and resolve.<sup>254</sup> Additionally, like in Forget's case, there could be something about the physical characteristics of the sound that draws players in, whether they are consciously aware of it or not. Sound therapy, and in particular VibroAcoustics, as coined by Olav Skille in 1968, has been used in areas of music therapy.<sup>255</sup> A study published in a peer-reviewed medical journal explored the effectiveness of sound therapy, proposing that 'nitric oxide (NO) is the molecule chiefly responsible for

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<sup>250</sup> 'Ben c'était le coup de foudre qui fait que là tu t'inscris et tu apprends [DS: oui] Tu apprends. Tu apprends l'instrument.' - Jean Laurendeau, interview, 24 May 2014.

<sup>251</sup> Nathalie Forget, interview, 12 September 2017.

<sup>252</sup> Ead.

<sup>253</sup> Ead.

<sup>254</sup> Steve Woolgar, 'Configuring the User: The case of usability trials', *The Sociological Review*, 38.S1 (1990), 58-99.

<sup>255</sup> Olav Skille, 'VibroAcoustic Therapy', *Music Therapy* (1989) 8.1, 61-77.

these physiological and psychological relaxing effects'.<sup>256</sup> The effects of music on the mind and body were of interest to Martenot himself, as Martel writes:

Martenot was more interested in discovering the possibilities for universal, collective, physiopsychological and even biological resonances in our rapport with music. He welcomed the partially uncontrolled and unconscious surges that can imbue a musician's playing with elusive spontaneity and give way to human imperfections that make it all the more authentic. That was part of his inquiry into music production and sensory experience, an exploration into the quasi-philosophical concept of what he called '*les impondérables*'.<sup>257</sup>

The above quote links Forget's sensory experiences to Martenot's own vision of the instrument. It also mentions a word that, for Laurendeau, is at the heart of the instrument's appeal. *Les impondérables* means 'the intangible', 'that which is difficult to grasp'. In his biography, he dedicates a section to it, explaining that for Martenot, it was important that the instrument, in its sensitivity, could express the human subconscious, that which is involuntary: 'inspiration, intuition, a sixth sense, call it what you want.'<sup>258</sup> Binet-Audet also mentions *les impondérables* in our conversation, and explains where to find them:

There are variables within the sound, that is the 'imponderable' that Martenot [spoke of], it wasn't even in the notes, but in the sound itself; when you let it play for a long time, things happen, according to the vibrato you make, or... It's very, very rich to me, that very aspect has attracted me a lot.<sup>259</sup>

Binet-Audet's explanation here makes Martel's quote easier to understand: the player's involuntary movements, for example during a long note, create unplanned sounds that make the human imperfection audible. This phenomenon certainly also happens in acoustic instruments, for example when a note on a wind instrument is held to the end of a player's breath, but in the Ondes Martenot, it takes on a different function. Because the sound *generation* is electronic, it loses the human imperfection usually found in the sounds of other acoustic instruments, such as the

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<sup>256</sup> Elliott Salamon, Minsun Kim, John Beaulieu, George B. Stefano, 'Sound therapy induced relaxation: down regulating stress processes and pathologies', *Medical Science Monitor* (2003) 9.5, 116-121, p. 116.

<sup>257</sup> Martel, 'Wired for the Human Touch', p. 44.

<sup>258</sup> Laurendeau (2017), p. 61

<sup>259</sup> 'Il y a des variables dans ce son là, c'est impondérable comme si Martenot — c'était même pas entre les sons mais dans le son lui-même; quand on le fait durer qu'il se passe des choses selon le vibrato qu'on fait ou... C'est très très riche, moi, cet aspect là m'a beaucoup attiré.' - Suzanne Binet-Audet, interview, 27 May 2014.

breath in a wind instrument, or the arm movements of a string player. Compared to a wind instrument, the duration of the notes is also not dependent on the player's lung capacity, which can result in notes perceived to be 'unnaturally' long. The sensitivity of the instrument, and the unplanned sonorities it creates, adds some of that humanity back in, not in the sound generation stage, but in the sound manipulation. This is part of the attraction to some players.

Interestingly, where unplanned sounds are often interpreted as outside of the designer's intention, and later appropriated by players (feedback is an example), we can see that Martenot himself was in fact very fond of them. There are interesting parallels between Martenot and Don Buchla, whose synthesizers also each had their 'own characteristics, idiosyncrasies and ways to respond to the human touch [...] "the wild and wonderful"'.<sup>260</sup> Like Martenot, Buchla flirted with mass manufacture before turning his back on it, continuing to produce his synthesizers by hand. Both were much more focused on musicality than, say, Hammond and Moog, their respective contemporaries who did achieve commercial success with their inventions.

Binet-Audet describes her role as player as *giving shape to* an existing but immaterial sound, where other players might *extract* sound out of the material their instrument is made of.<sup>261</sup> This makes sense, considering the fact that playing the Ondes Martenot does not require producing sound — the oscillators take care of that. Once turned on, the signal is continuous, ready to be moulded by the player. Binet-Audet uses the analogy of infrared light, invisible to the eye unless we use technology to see with.<sup>262</sup> Infrared light is all around us, but we don't see it because it exists outside of the spectrum our eyes can detect. Mediated by technology (in the form of an infrared detector), for a brief moment, we can get a glimpse of the infrared spectrum. In the same vein, electric current is, for a brief moment, made audible by the Ondes Martenot. The player, to Binet-Audet, 'shapes' an otherwise

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<sup>260</sup> Jon Weiss in Pinch and Bijsterveld, p. 550-551.

<sup>261</sup> 'Puis que on saisit...on a l'impression que l'ondiste il donne une enveloppe tout le temps à quelque chose d'immatériel puis qu'il euh...il donne corps, il donne corps, il donne corps, tout le temps-là, puis c'est...c'est l'inverse du travail d'un instrumentiste, qui a un matériau puis qui essaie de sortir l'essence du son, il y a comme un...il y a quelque chose d'un peu le contraire.' - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>262</sup> 'C'est un peu l'équivalent des infra-rouges puis des ultra-violet, qui existent mais qu'on peut pas voir puis tout d'un coup quand tu mets un appareil pour les voir, tu mets une prothèse, puis tu vois les infra-rouges, tu vois les ultra-violet, qui existent sans que toi tu les voies.' - Suzanne Binet-Audet, interview, 27 May 2014.



inaudible, shapeless stream of electrons into a wave detectable by our ears. This analogy also recalls wind tunnel experiments, where the otherwise invisible air in a tunnel is briefly coloured to study the flow of air as a vehicle passes through. The Ondes Martenot can be seen as briefly adding colour to electricity, for our ears to enjoy.



*Fig. 17: Suzanne Binet-Audet playing the Ondes Martenot in her Montreal home*

Rousse-Lacordaire, however, is not as poetic about the role of performer. She acknowledges that, due to the remarkable sensitivity of the features, the slightest movement is audible, thus ‘the emotion of the player is palpable’,<sup>263</sup> but does not see this as any different than with other instruments. In her point of view, the Canadian players seem to approach the instrument-player relationship in more of a lyrical manner, but she has to admit that allegedly, Martenot was a bit like that himself.<sup>264</sup>

For Ratsimandresy, playing the Ondes Martenot is all about the way you sit down, about being centered, having balance between the shoulders, and no tension.<sup>265</sup> The ultimate goal, as also expressed by Martenot himself, is to make the instrument an extension of you, which takes time. Both Grenier and Forget agree that perfecting their technique allowed them to become more free: ‘ten years of

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<sup>263</sup> ‘Donc forcément, l’émotion de l’instrumentiste est palpable’ - Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>264</sup> ‘Martenot, il était un peu comme ça, hein.’ - Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>265</sup> Nadia Ratsimandresy, interview, 13 September 2017.

work, and then you can feel like, ah, ok, then you are more natural'. This quote demonstrates the importance of continued development of the player's technique in established institutions such as conservatories. If Ondes Martenot classes disappear, teachers disappear, and students will no longer be supported in developing their technique to the level at which they can play without thinking about technique, the level at which they can be 'free'.

That said, through working with beginner players, Forget has seen the childlike freedom they have in exploring the instrument, and they can discover sounds that are new even to her. To detach herself from her own technique, she often practices improvisation, and she has also branched out into rock music, where she feels much more free:

It's not easy, I feel, I keep learning and learning, and when I go out here, it takes years for me to get free from all that learning. And that's why I came to rock music, for example, because it helped me to get free. And I was trying to play some bad sounds. For years and years trying to make the best gestures, sometimes it's good to be free, when you don't know. You can also learn this with improvisation.<sup>266</sup>

This demonstrates that a high level of technique can also bring its own constraints, and freedom sometimes means to detach oneself from the technique. Herein lies the value of the non-institutional context of use: the level of amateurs, the level of children, but also the context of popular music, for example, where technique is generally of less importance. The Ondes Martenot's presence in each of these contexts is valuable; for the player, and for the *playing*.

According to Rouse-Lacordaire, an important part of playing the Ondes Martenot is adapting to your own instrument, aiming to get the best sound out of it. Each instrument has its own unique faults no matter the model or make, and each performer must create a technique for it that produces the best possible sound: 'you must adapt to any defects'.<sup>267</sup> The player, over time, moulds themselves to their instrument. As Forget's instrument first belonged to another ondiste, she has had to learn to play like her to achieve a good sound. She explains all the ways in which it has affected her approach to the instrument. Because it is such a vivid quote, I have copied it in full.

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<sup>266</sup> Nathalie Forget, interview, 12 September 2017.

<sup>267</sup> 'Il faut s'adapter aux défauts' - Pascale Rouse-Lacordaire, interview, 14 September 2017.

Martenot was not so much ingénieur, he was more instinctive. That's what I see when I open the instrument. And he adapted each time, he shuffled things. The ondistes also play, because when you play the instrument, you use it, *comment dire - on l'use* [it wears out], you make some bad things depending on your playing. I have, for example an instrument of Mme Deslogères, that was an ondiste same generation as Jeanne Loriod. And her instrument has some faults depending on her playing. So when I play her instrument I have, in my mind, to imagine and to know how she's playing, and I have to try to play like her if I want this instrument to make a good sound. And first I was like, fighting with her instrument, trying to adapt, and I said, no it's not a good way. This instrument has spent like, forty fifty years with her, so I have to understand how she played and how to play like her. Not exactly, but to go in the way of using the instrument, and now it sounds better. In everything. Vibrato, everything. Also her body. She is smaller than me, so I have to understand how she was playing. And she has another technique, because she's older, so we don't play the same way now than Ginette [Martenot], or... We can't play the same way. And also the tube instruments, they were very different. And she learned first with the tube instruments, so she had a different technique, different heavy... *poids* [weight], to play. Everything different. And I imagine, when I will give my instrument, I will have to give it to an ondiste who will do that work: imagine how I was playing to make it sound good.<sup>268</sup>

Here, we see a clear instance of the mutual shaping of the instrument and the player. Forget's use of the word 'fighting' is telling of the agency she feels the instrument has. The player wears out particular parts of the instrument, which over time become its unique characteristics. The instrument begins to mould the user to these faults; the player has to find a way around them and adjust their technique. Over time, the instrument is reshaped in such a way that it in turn configures its next user: it can now only be played well if approached the same way as the previous player. This demonstrates the mutual shaping of user and instrument; both directions of influence are significant in the life cycle of the Ondes Martenot. Separating out the agency of users and the agency of the instrument, as certain schools of thought in STS have attempted, would merely be a theoretical exercise: in reality, both are intricately intertwined, creating and continuing the existence of the Ondes Martenot.

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<sup>268</sup> Nathalie Forget, interview, 12 September 2017.

### 5.3.3 The Life of a Professional Ondiste

When it comes to performing with the instrument, a number of challenges arise that are specific to the life of a professional Ondes Martenot player. This section outlines three that came up repeatedly during the interviews: the danger of travel, misunderstandings with regards to the instrument's place on the stage, and finding paid work in a competitive field. It also touches on the common practice of demos: introducing the instrument to curious onlookers before or after performances.

#### **Travel**

Travel with any instrument can be a precarious undertaking. The Ondes Martenot is notoriously challenging to travel with. For starters, the instrument is too heavy to be carried alone. Then come the various loudspeaker boxes and cables. The circuits inside have various small components that can be loosened by a bumpy ride, especially during plane travel. Dierstein admits that most people travel with an extra instrument. Valérie Hartmann always travels with two instruments, and so does Forget. Dierstein goes on to add that despite these issues, the performers are still slow to embrace new changes to their instrument, even if they help to reduce the issues mentioned here. Only Rousse-Lacordaire states she travelled with just one instrument. She admitted that 'it's a risk, it's a worry, that an instrument would not start, would not be playable'. She counts herself lucky that she has never had to cancel a performance:

I did have issues with my first Martenot instrument [as opposed to her Ondéa], because I found it lacked power, but it was a fairly robust instrument. With the Ondéa, no, even though I travelled with it a lot. There is always apprehension, of course, that's true, but I've never had anything terrible happen.<sup>269</sup>

To put things in perspective, she goes on to add that she never did play as much as Hartmann, who performs nearly every day. Hartmann has had a few hiccups, but then again, she *has* travelled around the globe with it. After air travel especially, the performers hold their breath to see if their instruments still work. Often they don't.

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<sup>269</sup> 'J'ai eu des difficultés avec le premier instrument de Martenot, parce que je trouvais qu'il manquait de puissance. Mais parcontre, il était assez robuste. Sur l'ondéa, non, parce que j'y avais beaucoup voyagé quand-même avec. Il y a toujours une appréhension, c'est vrai, mais j'ai jamais eu des choses épouvantables.' -Pascale Rousse-Lacordaire, interview, 14 September 2017.

Binet-Audet's story comes to mind, about her instrument arriving unplayable after being manhandled by baggage personnel.

These anecdotes show the resilience needed to continue these roles. Although they are, in isolation, not unique to the Ondes Martenot, the cumulative challenges faced on a continual basis require a strong will and determination to continue.

Due to these issues, performers demonstrate more characteristics of liminal entities by taking on the role of repairer, at least to a certain degree. Some are better at it than others. Binet-Audet points at Grenier as having remarkable repairing skills, but even Grenier says she has had to visit Jean Landry '5 or 6 times last autumn alone', as mentioned before. For some ondistes, it isn't worth the effort:

There is a very very good ondiste who quit because there were too many problems, so she has left, she has done something completely different.<sup>270</sup>

Binet-Audet admits that her dedication and optimism is difficult to explain, comparing her experience to that of trying to cheer up a person who has an illness:

It is like someone who is a bit ill, but who you love. You say, "you're going to take care of yourself, you are," you'd have a crazy hope that yes, we'll find a solution, it is worth continuing. It's a bit crazy.<sup>271</sup>

Grenier, too, is bitter about the impact the technical issues have on her playing:

'It is too artisanal: at a given moment we are no longer playing, making music, we are trying to play and [ensure] that it is not a catastrophe, because there are too many little noises throughout.'<sup>272</sup>

She gives examples of not being able to play too loudly or else her instrument starts to make a noise, or not being able to pull the ribbon too far away for fear of it coming loose. This is clearly in a different category from the previously mentioned *impondérables*. After all, there is nothing human about the rattling noise of

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<sup>270</sup> 'Il y a une très très bonne ondiste qui a arrêté parce qu'il y avait trop de problèmes, puis elle est partie, elle a fait tout à fait autre chose.' Suzanne Binet-Audet, interview, 27 May 2014.

<sup>271</sup> 'C'est comme quelqu'un qui aurait, je sais pas, qui est un peu malade mais que t'aime. Tu sais, 'tu vas te soigner, tu vas', t'auras un espoir fou que oui on va trouver des solutions, que ça mérite de continuer. [...] C'est fou un peu.' -Suzanne Binet-Audet, interview, 27 May 2014.

<sup>272</sup> 'C'est trop artisanal, à un moment donné on est plus en train de jouer, de faire de la musique, on est en train d'essayer de jouer et que ce soit pas la catastrophe parce qu'il y a tellement de petits bruits partout.' Geneviève Grenier, interview, 27 May 2014.

mechanical components. She stresses that many of these tiny noises would not be an issue for recreative players, but in orchestral works, or concertos or ensembles, the players perform alongside others, and far too much time is spent trying to troubleshoot and tune the Ondes Martenot. This at times puts a strain on the working relationship with others, for example when a number of ondistes are trying to tune their instruments for an ensemble performance, admits Grenier. Again, we can see an instance of the instrument exerting agency on the humans in the network: in this case, the instrument's lack of stability puts pressure on the social relations.



*Fig. 17: Geneviève Grenier and her Ondes Martenot*

## Unplanned sounds

On a more positive note, the instruments' technical malfunctions have at times created wonderful sonorities. This, again, is not to be confused with the *impondérables*, which are caused by the player's imperfect movements.

You know, just the spring reverb, when you get to certain frequencies there is like a sympathetic reverb, suddenly you have these *woow*... and there it explodes, and there are composers who have exploited that.<sup>273</sup>

Grenier adds that her new spring reverb is too stable to do this, as hers works well these days. She does admit it used to happen more often than was desirable:

At times it made the lights vibrate, the neons on the ceiling when you are in certain venues, it was crazy.<sup>274</sup>

Rousse-Lacordaire brings up the clicking noise the earlier instruments used to make when closing the circuit. Users named the sound the *claquement* (sometimes *craquement*). To avoid sounding the clicks, the player needs to press the desired key completely before starting to press the volume button. The clicks only happen when the circuit is opened first, and then closed again. This means that in a run of consecutive notes, the click can be avoided, but only if each note is played at exactly the right time. Jeanne Loriod was famous for her playing technique that avoided this *claquement* by stringing the notes together or, as Rousse-Lacordaire calls it, by playing 'in' the instrument. Laurendeau remembers trying to play a concerto written by Jacques Hétu, and finding it impossible to avoid the *claquement* due to the staccato: 'I even made him rewrite a small section, I told him "it's not possible!"'<sup>275</sup> Here, we see another instance of instrumental agency: the instrument shapes the user's technique (Loriod finds a way to avoid the *claquement*), which then shapes the composition through the player's collaboration with the composer (Hétu writes with Loriod in mind). Subsequent players of the repertoire are then forced to change their technique to align more with the original player's (Laurendeau tries to emulate

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<sup>273</sup> 'Tu sais juste la réverbération à ressorts, quand on arrive dans certaines fréquences il y a comme une réverbération par sympathie, tout à coup t'sais on a des *woow*... et là ça explose et il y a des compositeurs qui ont exploité ça.' Geneviève Grenier, interview, 27 May 2014.

<sup>274</sup> 'Des fois ça faisait vibrer les lumières, les néons au plafond quand on est dans certaines salles, c'était fou là.' - Geneviève Grenier, interview, 27 May 2014.

<sup>275</sup> Jean Laurendeau, interview, 24 May 2014.

Loriod's technique). Or, in this case, human agency triumphs: the repertoire is changed instead (Laurendeau does not manage, and asks Hétu to rewrite the composition).

During an earlier visit to Thomas Bloch's studio, Bloch showed me his Ondes Martenot — seventh model, transistorised — which had a small lever that could turn the *claquement* on and off, so that music composed for earlier models could be performed more true to the original sound. The problem was thus solved, but over time it had become more than just a problem, and taking it away would mean both a loss and a relief. The option to keep it in was, in that sense, a very musical one. The story of the *clacquement* is again one of co-construction: players work around an issue caused by the instrument, appropriate it, and redefine the instrument as requiring the feature in subsequent models.

### **Orchestral context**

When the instrument is finally set up and working, a different challenge can occur in orchestral settings. As the Ondes Martenot is such a unique instrument, and due to its monophonic nature often a solo instrument, many composers and conductors want it to have a prominent place on the stage. The loudspeakers, with their intriguing shapes, are often seen at the very edge of the stage in front of the instrument. Certain conductors have mentioned Messiaen himself as inspiration for this setup. From a performer's perspective, however, this is a most undesirable position: it is very difficult to regulate the sound and volume when the speakers are in front, facing the audience, as the player isn't able to hear what they are playing. According to Laurendeau and Grenier, it can cause disastrous performances. Both agree that the best position for the Ondes Martenot's loudspeakers is at the back of the stage, overlooking the orchestra. That way, as Grenier puts it, 'I will probably hear what the people will hear in the room, so I can balance my own sound.'<sup>276</sup> Laurendeau admits that the frustrating exchanges between himself and a few stubborn conductors who refused to listen, contributed to his retirement as performer.

That is a point, I must admit, I must admit, I almost wanted to write a book on,

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<sup>276</sup> 'Moi je vais entendre probablement ce que les gens vont entendre dans la salle, donc moi je peux balancer mon son.' - Geneviève Grenier, interview, 27 May 2014.



because I've had fights with conductors. That may be the reason why — well, it is age, but — why I decided to quit.<sup>277</sup>

This demonstrates that the gap between the user's knowledge of the Ondes Martenot and that of non-users can have significant effects on the network. The frustrations that come with being the user of such a poorly understood instrument played a role in the retirement of a prominent player-teacher. A stronger network with more visibility could mean that more people become aware of the instrument and how it works.

Grenier also recalls an instance where she attended a more intimate performance where the ondiste had chosen to put her loudspeakers in front. The resulting sound was far from ideal. Grenier explains that often, she will ask a colleague-ondiste, such as Suzanne, to attend her performances to help out with sound balance:

If I do something I can tell Suzanne, could you come see me, for the balance [...] They're experiments, you learn eh, when you assist others in their experiments. Sometimes they say, 'ah, not a winner!'<sup>278</sup>

This anecdote reveals the type of support she gets from her colleagues in the small ondiste milieu in Montreal (bearing in mind, of course, that Binet-Audet was Grenier's teacher and is a friend of the family). Although the network does not rely on amical bonds, it is certainly strengthened by them, as demonstrated here in terms of improving the potential quality of a performance, as well as in terms of moral support.

### **Demonstrating the instrument**

One part of the role of performer is rather specific to the Ondes Martenot: due to the novelty that is seeing an Ondes Martenot played live, many performers automatically incorporate a demonstration into the programme. For larger classical performances, this is usually scheduled beforehand, whereas more intimate and popular performances may include a demonstration moment after the show.

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<sup>277</sup> 'Ça c'est un point, je vous avoue, je vous avoue, j'avais presque envie d'écrire un livre juste là dessus, parce que je me suis battu avec des chefs d'orchestre, c'est peut-être la raison pour laquelle j'ai — enfin, c'est l'âge, mais — j'ai décidé que je m'arrêtais.' - Jean Laurendeau, interview, 24 May 2014.

<sup>278</sup> 'Si je fais quelque chose je peux dire à Suzanne, euh, viendrais-tu entendre voir, pour la balance [...] Ce sont des expériences, on apprend, hein, quand on assiste aux expériences des autres. Des fois on se dit, euh, ah, pas gagnant!' Geneviève Grenier, interview, 27 May 2014.

Demonstrations are vital to the visibility of the instrument, which strengthens the network. Spreading awareness of the possibilities of the instrument could convert future Ondes Martenot users, in the same way that the Ondes Martenot was often introduced to the current users via a demonstration. Often, a few notes from a well-known piece are played, to give the attendees a frame of reference in which to place the new sounds, before moving on to a few pieces that show off the various features and timbres. One of these demonstrations by Jean Laurendeau was filmed and put on YouTube 11 years ago. It is the first hit when searching for ‘Ondes Martenot’ and has amassed roughly 650K views.<sup>279</sup> The well-known piece in this demonstration was the theme song to the original Star Trek series, which, despite numerous rumours stating otherwise, did *not* originally feature the Ondes Martenot. Due to the instrument’s novelty status, the role of performer is expanded to include regular demonstrations. These have the potential to bring newcomers into the network, strengthening it.

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<sup>279</sup> Robert Lauver, ‘Jean Laurendeau and the Ondes Martenot’, *YouTube* (31 May 2007) <<https://www.youtube.com/watch?v=Yy9UBjrUjwo>> [last accessed 5 October 2018]

## 5.4 Institutions and Teachers

### 5.4.1 Introduction

Despite its outer resemblance to the more commercially available synthesizer, controlling the instrument requires an intricate technique due to its sensitivity in picking up the movements of the hand. The learning curve of the Ondes Martenot has a lot in common with acoustic instruments: although the signal is electronically generated, the way the player moulds the sound can be perfected. It requires multiple years of practice, and professional ondistes tend to feel fully proficient only after a decade of study. For those interested in the instrument, this can be a significant hurdle. As demonstrated by teachers' anecdotes below, the instrument's exterior invites presumptions and expectations that are promptly shattered upon the first interaction. Piano skills, for example, cannot be simply transferred onto the Ondes Martenot, as volume is not produced by the amount of pressure onto the keys. Learning the Ondes Martenot therefore often requires a period of un-learning, depending on the instrument skills the player has acquired beforehand — for many, this includes piano skills. Children, unsurprisingly, take to the instrument much quicker.

### 5.4.2. Teachers and courses

The participants who are Ondes Martenot teachers, as established in the previous section, see themselves predominantly as performers, first and foremost. Although all broadly teaching Jeanne Loriod's technique, they do have their own styles. Their teaching role provides them with an additional source of income, but also allows them to pass on the tradition, which is of high importance to them. Although courses are rare, they do exist on every level, from after-school music lessons to higher education. Introducing new players to the instrument highlights the preconceptions embedded in some features, such as the keyboard. A ubiquitous staple of synthesizers, it communicates to students that, to learn to play the Ondes Martenot,

one needs to become proficient at keyboard fingering, but nothing is further from the truth. The delegation of volume control to the left hand and pitch to the right is unique for a keyboard instrument. The shaping of the notes with the volume button is, in fact, the biggest challenge. The lack of instruments is an issue for students. To work around the issue, teachers allow them to practise on the instruments at the conservatory. It seems that those enrolled in conservatories often cannot spend the €11.000 necessary to buy a Dierstein, and those who can, as they are often older, cannot access classes.

Compared to other acoustic instruments, accredited courses for Ondes Martenot, such as at conservatories, are rare. Compared to most electronic instruments, however, this number is rather high. A handful can be found in France, Montreal has one, and in Tokyo a few professional performers also run courses. The four most well-known institutions where students can learn the Ondes Martenot are in Boulogne-Billancourt in Paris (FR), central Paris (FR), Strasbourg (FR), and Montreal (CA). The technique taught is broadly that of Jeanne Loriod, who herself studied with Maurice Martenot. She spent her entire life devising a detailed method to study Ondes Martenot and taught many of the current professional performers, or at least their teachers. Her treatise, the *Technique de l'onde électronique type Martenot* vol. 1-3 are widely used to teach students of all ages, and have recently come back into print in bilingual French-English.

In France, students can start Ondes Martenot at the same age as any other instrument: seven years old. Three courses can be found in and around Paris, and the Strasbourg conservatory houses the fourth. Nadia Ratsimandresy is a teacher at the Conservatoire à Rayonnement Régional (CRR) in Boulogne-Billancourt, a suburb of Paris. It is an after-school music academy where children from 7 to 16 can learn an instrument. Nadia, herself a performer, had 13 students under her wing when I visited her at the start of the academic year in 2017. Three cycles form the structure of the Ondes Martenot course: in the first four years students learn the basic technique and some repertoire, alongside a mandatory music theory course. The next four years introduce different techniques and timbres, while the link between score and composer becomes more important. The last two years introduce repertoire from contemporary composers who are still alive.<sup>280</sup> Some choose to continue after the

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<sup>280</sup> Nadia Ratsimandresy, interview, 13 September 2017.

age of sixteen in preparation for Higher Education by doing a ‘professional orientation’ cycle.

The CRR in Strasbourg is, like the conservatory in Boulogne-Billancourt, a music academy where students under 18 study music after school. The Ondes Martenot teachers there are Thomas Bloch and Christine Ott.

Nathalie Forget teaches at the Conservatoire National Supérieur de Musique et de Danse de Paris (CNSMDP). It is an institute for higher education where students from 18 onwards can study their instrument at a higher level. She does not see many students joining from the after-school conservatories, but does accommodate students who want to study the Ondes Martenot as their ‘option’ or second instrument, with no previous experience required. Géraldine Dutroncy teaches here, too. Valérie Hartmann, who is still active as one of the most prominent Ondes Martenot players in the world, taught here until recently. France used to have more official Ondes Martenot courses, such as in Serget and Évry, but those have now closed down. Ratsimandresy agrees that places are few, ‘but at the same time, we are not violinists. We don’t have orchestras where you can hire a thousand ondistes, so I think somehow it organises itself — auto-regulation, in a way, I guess.’

**CONSERVATOIRE  
NATIONAL SUPÉRIEUR  
DE MUSIQUE ET  
DE DANSE DE PARIS**

# AUDITION DE LA CLASSE D'ONDES MARTENOT (cursus et option)

de Nathalie FORGET

Vendredi 14 décembre  
à 15h30 - salon VINTEUIL -

Œuvres de :

MESSIAEN – KOECHLIN – MURAIL – BUSSOTTI – STOCKHAUSEN  
BONDON – LANDOWSKI – TOUCHARD – VARESE  
et plein d'improvisations !!!

Aux ondes :

Imsu CHOI, Aurore DALLAMAGGIORE, Cécile LARTIGAU, Arthur NICOLAS-NAUCHE,  
Kana OTANI, Kevin PLANTE, Haruka TAKIKAWA

*Fig. 19: The poster advertising auditions for Forget's class in the Paris conservatory, 2018. Note the words 'cursus et option', describing the two types of classes offered.*

The participants who are Ondes Martenot players in Canada were trained in Paris in the 1950s and 1960s. In 1970, the Conservatoire de Musique et d'Art Dramatique du Québec à Montréal (Montreal being a department under the Quebec group) opened its own higher education course under the lead of Jean Laurendeau.

In 1997, after just under 30 years, the course was terminated.<sup>281</sup> This is not entirely surprising, seeing as the 1990s were a quiet decade for the Ondes Martenot, both in terms of new instruments and repertoire. Visibility and accessibility dropped, and Laurendeau points the finger at a capitalist system governing arts degrees.

One day they told me, ‘oh there are enough people playing Ondes Martenot at the moment, that’ll do’. [...] There are values that are not business values and unfortunately we must not lose those, either.<sup>282</sup>

Today, students can study the Ondes Martenot in Montreal again. Since 2015, Estelle Lemire is the designated professor on the course.

The reintroduction of the Ondes Martenot course is an important indicator of the growing interest in the instrument. One could argue that it sends a stronger message about the instrument’s current status than if the course had continued to exist. The conservatory must have concluded that the case for an Ondes Martenot course is stronger now than it has been in over a decade, and it is worth investing in again. This is a strong indicator that the instrument and its network are indeed moving in the direction of stabilisation.

#### 5.4.3 Teaching the Ondes Martenot

The Ondes Martenot technique developed by Jeanne Loriod was taught to the next generation of players and teachers, such as my participants Laurendeau, Rousse-Lacordaire and Binet-Audet. Each teacher has their own approach, but many exercises can be traced directly back to Loriod, as Laurendeau explains:

One thing Jeanne Loriod taught me, which I thought was fantastic, is a very slow movement of the right hand on the keyboard, which she called ‘slow motion’. [It

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<sup>281</sup> N.N., ‘Les ondes Martenot de retour au Conservatoire de musique de Montréal’, *Conservatoire de musique et d’art dramatique du Québec* (2015) <<http://www.conservatoire.gouv.qc.ca/reseau/conservatoire-de-musique/montreal/actualites/nouvelles/article/les-ondes-martenot-de-retour-au>> [last accessed 10 December 2018]

<sup>282</sup> ‘Un jour on m’a dit, oh il y a assez de monde qui joue les Ondes Martenot en ce moment, ça va suffire. [...] Il y a des valeurs qui ne sont pas des valeurs marchandes et malheureusement il ne faut pas les perdre non plus.’ - Jean Laurendeau, interview, 24 May 2014.

was] practically tai chi, a sort of tai chi for your fingers.<sup>283</sup>

Their students are now teaching Ondes Martenot to the next generation, and while some still use the Loriod technique, most, like Ratsimandresy below, have incorporated approaches that are more common today:

I think right away I propose small pieces. Because I think now after all those years we have some pedagogical small pieces for beginners. It's easy to just start a piece right away and work on tuning or the dynamics. The method of Jeanne Loriod is a good reference point, the pictures are nice to see [gestures to photocopies of Loriod's drawings from her treatise hung up around the classroom], but it's also for them nice to say, 'oh, this is my full score.'<sup>284</sup>

Loriod's treatise does indeed serve as a useful reference point for future generations, even though it is in book form only. Current teachers, however, can rely on pedagogical pieces created over the last few decades, which is a much more engaging approach than slow, repetitive movements without a clear outcome or achievement to aim towards.

Most people aware of the Ondes Martenot have only been introduced to the instrument in adulthood. Often musicians themselves, they approach the instrument with a wealth of cultural context, connotations and assumptions. In the conservatory of Boulogne-Billancourt, Ratsimandresy teaches young children with little to no preconceived notions of instruments and instrument playing. 'It's easy,' she says, 'they just accept it, they don't discuss it.' The Ondes Martenot, to them, is not a strange niche instrument, but just another instrument they are being introduced to. The following quote shows how Ratsimandresy introduces the Ondes Martenot to children, and in particular, how she helps them to understand why the instrument may not sound appealing when they first try it:

When they approach the instrument [...] right away they find out 'oo, I can vibrate [the pitch]', and then, 'oo, it's too loud!' And the first thing I say is, 'it's your fault, not the instrument's'. [...] The first thing they want to do is 'I want to have a good sound!' Even when they arrive, after one minute they say 'eh, I don't like the sound,' and I'm like, 'this is your fault. So you want to play [the keyboard], you have to control it this way,' and they say 'eugh' but they know

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<sup>283</sup> 'Une chose que Jeanne Loriod m'avait enseignée que je trouvais magnifique, c'est un mouvement très lent, à la main droite, au clavier, qu'elle appelait: le cinéma au ralenti. [...] presque du Tai-chi, une sorte de Tai-chi des doigts' - Jean Laurendeau, interview, 24 May 2014.

<sup>284</sup> Nadia Ratsimandresy, interview, 13 September 2017.



they have to learn, and then it's easy. And the rest, you know, the colours, the sounds, 'it sounds like an oboe,' it comes later, it comes naturally. But it's not the first point. And then with the ring, you know, it's fun. And then I say: 'actually, you can sing a melody and then play it.' And they say, 'what?' And then they realise, 'oh, it's out of tune?' 'It's because it's you, it's your fault, sorry. You have to practise.' They get it right away, they understand it very quickly, and the next lesson, the next week it's 'Nadia, can we start?' Then I have to stop them. I have to teach them to read notes, to sit properly, to... stuff like that. But they can't wait.

Ratsimandresy thus deliberately frames the unpleasant sounds made by the young novices — be it out of tune or too loud — not as the instrument's fault, but their own. She teaches them from the start that it is up to them to learn to play it, so they can create better, more pleasing sounds. Similar to the learning curve of the violin, the first phase in learning to play the Ondes Martenot is to play it badly and create unpleasant sounds, and this is not due to the instrument's inherent features, but the skill of the player. In contrast with adults, who can be more impatient with their own progression, children are used to the fact that they are still learning and don't yet have the skills adults might have. For the Ondes Martenot, this attitude is key, as playing it well requires not just keyboard dexterity, as most synthesizers require, but a complete skill set of bodily control, co-ordination and musical ability unique to the instrument's features. In other words, children do not see the Ondes Martenot as a keyboard synthesizer, and they do not apply the connotations that come with playing the synthesizer to the Ondes Martenot. The learning curve of one does not at all compare to that of the other, and too strong a link between the two creates false expectations, leading to disappointment when it becomes clear that the Ondes Martenot requires time and effort to begin to produce a good sound. For these reasons, categorising the Ondes Martenot as a synthesizer, as many sources seem to do, can indirectly have a negative influence on the uptake of the instrument.

Laurendeau goes on to say that his background as clarinet player had a notable influence on his teaching, as well. That said, he also recognises that the influence went in the other direction, as well, claiming 'the best clarinet teacher I ever had was Jeanne Loriod'. Most importantly, she taught him to be *present* with his instrument. This comment highlights the potential value of learning the Ondes Martenot beyond the instrument's own repertoire. The skills and behaviours required to play it can have a positive impact on other areas of instrument study.

This brings us to a topic that not all participants see eye to eye on: relaxation.

Martenot had designed and developed a relaxation technique called ‘Kinésophie’ (from the Greek *kinè*, movement, and *sofia*, wisdom). It was rooted in theories of physio-psychology and aimed to bring people (particularly the children attending the Martenot music school) more in tune with their body and mind, in an artistic context as well as in daily life. Rather than trying to think their way into full control over the movements of the hand, Martenot hoped the relaxation techniques would instead enable his students to let more spontaneous gestures happen, particularly in improvisation. This goes hand in hand with Martenot’s love of *les impondérables*, the human aspect in imperfection, as discussed above. His last book on the topic of relaxation, *Se relaxer: le corps, l’expression de l’être* (literal translation: ‘To relax oneself: the body, expression of the being’) has this quote in its synopsis, which sums it up:

What good does it do to talk about being in tune or out of tune with something, be it the entourage, society, the opinions of others... without first having established the most necessary tuning: *being in tune with oneself*.<sup>285</sup>

Laurendeau had been playing the Ondes Martenot for nearly twenty years when he discovered this pedagogical approach, and tells me he finds it ‘genius’.<sup>286</sup> He, too, believes it is important to practice relaxation not just for the Ondes Martenot, not just in music, but in all aspects of life. He recalls that Loriod, interestingly, didn’t think much of the technique at all, and even insinuated that Martenot ‘was a bit of a charlatan’ when it came to this topic.

Jeanne Loriod was not at all a follower of the relaxation [technique] of Martenot. She even thought Martenot was a bit of a charlatan — on that point, on that point. Oh, I do believe she was exaggerating, but well.<sup>287</sup>

Ratsimandresy does not directly address relaxation techniques, but does mention the importance of being balanced and centered. Laurendeau speculates that the concept

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<sup>285</sup> ‘À quoi bon parler d’“accord” ou de “désaccord” avec quoi que ce soit: l’entourage, la société, l’opinion des autres... sans avoir établi le premier accord nécessaire: *l’accord avec soi-même*.’ Maurice Martenot and Christine Saïto, back cover, *Se relaxer: Le corps, l’expression de l’être* (Paris: Albin Michel, 1977).

<sup>286</sup> ‘génial’ - Jean Laurendeau, interview, 24 May 2014.

<sup>287</sup> ‘Jeanne Loriod n’était pas du tout adepte de la relaxation Martenot, hein, elle trouvait même que Martenot c’était un peu un charlatan, sur ce point là, sur ce point là. Oh, je pense qu’elle exagérait, mais bon.’ - Jean Laurendeau, interview, 24 May 2014.

of relaxation may be found embedded within the design of the instrument:

[Russian cellist and relaxation guru Youry] Bilstin taught [Martenot and his sister Madeleine] the relaxation technique while he was working on his instrument, and that has persuaded me of that. There has been an interference, because he managed to make an instrument so simple in its approach that at the same time allowed for such complexity in expression, that it is certain that the relaxation exercises helped him to find the simplest way towards what he wanted to achieve.<sup>288</sup>

Although he stresses the fact that relaxation is useful to all instrumentalists, he does think that the simultaneity of Martenot's instrument making and Bilstin's teachings is not a coincidence, and some of the characteristics of relaxation have made it into the design of the instrument. Martenot's embedding of this context in the instrument can be seen as 'configuring the user', as coined by Woolgar.<sup>289</sup> The instrument, in other words, demands that users practice relaxation, since every small hand movement, such as a tremor, is made audible.

Many players and teachers earn extra money by teaching privately. Grenier gives examples of students from abroad who have visited her several times for private lessons: two from New York (US), and one from Pittsburgh (US). One particular student was able to secure a grant to come study with Grenier for five days. At the time of the interview he didn't yet have his own instrument. One student bought a Dierstein model before having taken any lessons whatsoever. He became interested after Radiohead used it on their albums, as is the experience of many more recent aficionados (this author included). The power of visibility, of positive and contemporary musical representation, cannot be underestimated. Greenwood's status as a skilled and respected musician and composer, as well as an innovator, has prompted others to take notice of the instrument. His use of the Ondes Martenot, not just in Radiohead's music, but in orchestral works, film scores and even traditional Indian ensembles, has showcased the instrument as a well-rounded tool of music-making at home in a variety of musical contexts. The contrast with the one-dimensional novelty instrument from twentieth century academic literature is

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<sup>288</sup> 'Bilstin leur a enseigné la relaxation alors qu'il travaillait à son instrument et ça moi je suis persuadé que ça. Il y a eu une interférence, parce que il est arrivé à faire un instrument tellement simple d'approche et permettant en même temps une telle complexité dans l'expression que sûrement que l'exercice de relaxation l'ont aidé à trouver euh, le chemin le plus simple vers ce qu'il voulait réaliser.' - Jean Laurendeau, interview, 24 May 2014.

<sup>289</sup> Woolgar, 'Configuring the User'.

significant. As an actor in the Ondes Martenot network, Greenwood's agency continues to be a stabilising force felt across the entire network.

#### 5.4.4 Students

Introducing new students to the Ondes Martenot can be a challenge. Most people who express an interest in learning to play the instrument have already developed a specific set of skills from another instrument: the piano, for example. The keyboard, in this context, can be very misleading. Pianists add dynamics and accents to their melodies by varying the softness and speed with which they play the keys. With the Ondes Martenot, the entire range of dynamics and accents is located in the left hand only: in the button. The keys only open and close the circuit (and allow for vibrato), varying just the pitch. Pressing keys will create no volume whatsoever unless the button is used. This causes disorientation upon first trying to play the instrument: their skills are of no use here; they have to start from the beginning. Grenier:

Often they are pianists, so they have the impression that it's going to be easy. So the first thing I tell them, is: 'ok, sit down at the instrument, now try to play something with the button here', you know. Then I explain to them that that is the soul, you know, all of the sensitivity comes from there.<sup>290</sup>

Laurendeau reports the same issue:

I wouldn't say that not having done piano is preferable, but I have to admit that there was a period when I taught Ondes Martenot in primary schools in Quebec, and nearly all students I was sent were piano students. And they had exactly the same problem, effectively. So to say that it is better not to have done piano I think is a bit of an exaggeration, but it doesn't solve problems, in any case.<sup>291</sup>

Laurendeau adds that, in his experience, the best results are seen in students with

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<sup>290</sup> 'Souvent ils sont des pianistes, alors ils ont l'impression que ça va être facile, puis la première chose que je leur dit: je fais ok, assieds-toi à l'instrument puis, essaie de jouer quelque chose avec la touche ici, t'sais, puis je leur explique que ça c'est l'âme, t'sais toute la sensibilité vient de là.' - Geneviève Grenier, interview, 27 May 2014.

<sup>291</sup> 'Je ne dirai pas que ne pas avoir fait de piano soit préférable mais je dois admettre que, il y avait une période où j'enseignais les Ondes Martenot dans les écoles élémentaires à Québec et presque tous les élèves qu'on m'envoyait c'était des élèves de piano. Et ils avaient tous exactement le même problème effectivement. Alors dire que c'est mieux de ne pas avoir fait de piano je pense que c'est un peu exagéré mais ça règle pas les problèmes en tous cas.' - Jean Laurendeau, interview, 24 May 2014.

prior piano *and* violin skills, which would make sense. A pianist can use their key dexterity to play melodies on the keyboard. A string player is already familiar with the hand separation of pitch (neck) and volume/dynamics/accents (bow).

Additionally, the Ondes Martenot's vibrato, be it on the keyboard or on the ribbon, is achieved through a lateral wrist motion reminiscent of that of a string player. Lastly, the sliding technique used across the neck can be applied to the ribbon controller.

Ratsimandresy sees the control of dynamics as delegated to one hand, and the pitch and vibrato to the other, as closely linked to string instruments; Martenot's cellist background was a clear influence.

The lack of instruments is a considerable issue faced not just by amateur players, but conservatories, as well. They do own a number of original Martenot instruments, but the repairs are costly, and so most teachers allow their students to practise on one of their own personal instruments, which are more regularly maintained. Instead of practising at home, students can book practice rooms to study for upcoming recitals. Grenier remembers this well:

Because there was one instrument at the conservatory and we all had to practise, there was also Estelle Lemire, so there were three of us, for several years there were three, so we divided the day up: 3 hours, 3 hours, 3 hours. And we swapped, we hung up a schedule, and we practised every day like that, so we heard each other practise.<sup>292</sup>

All of Ratsimandresy's current students are interested in buying their own instrument. One of her students, a ten-year-old, asked her recently, 'when can I get my instrument?' She advised him to discuss it with his parents. When she was a student, she had the same experience as Grenier:

They all want their own instruments, the same way I wanted my own as a kid. And I had to go to the conservatoire to practice, like a percussionist. They want the same, they don't realise that it's an investment, it's not just like a hobby, it costs too much.<sup>293</sup>

The lack of instruments forces users to work together. They rely on each other to

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<sup>292</sup> 'Parce qu'il y avait un instrument au conservatoire et on allait toutes, bon, pratiquer, il y avait aussi Estelle Lemire, donc on était 3, pendant plusieurs années on était 3, donc on se partageait la journée: 3 heures, 3 heures, 3 heures. Et on échangeait, on se montait un horaire puis on allait pratiquer tous les jours comme ça, donc on s'entendait répéter.' - Geneviève Grenier, interview, 27 May 2014.

<sup>293</sup> Nadia Ratsimandresy, interview, 13 September 2017.

continue their use of the instrument, as demonstrated here by sharing communal instruments and deciding among themselves who gets to play when. The network relies on a basic level of co-operation due to the constraints users face. Complete detachment from other users is not an option. This shows how much of an influence the current status of the Ondes Martenot, as a not yet fully stabilised instrument, has on the social behaviours of its users.

Of course, the Ondes Martenot is not entirely unique in this regard. Many harpists, for example, learn to play the harp on a conservatory-owned instrument, only investing in their own instrument at a later stage. The price of even a student harp is significantly higher than, say, a trumpet or violin, and transport is also challenge due to its weight and bulk. However, as the market for original Ondes Martenots is virtually non-existent, it is unlikely that a student will succeed in hunting down an instrument that was not yet accounted for, have the funds to buy it, and pay for the inevitable repairs, which can become astronomical if the instrument in question has not been played for a while. Their only hope to one day own an Ondes Martenot is to buy one from a retiring performer, or to buy a newly produced model, such as the Ondes Musicales Dierstein, which costs approximately €11.000. Although one could make the argument that many acoustic instruments geared towards professional use cost more than that, we must bear in mind that most people interested in learning the Ondes Martenot don't have access to teachers or their instruments. Their only way of finding out whether the instrument is even something they want to pursue, is to spend a considerable sum on a professional model. Even if the purchase solidifies the desire to continue, the lack of teachers and courses is still a significant issue.

There is a notable skill gap between being an Ondes Martenot beginner, and being an advanced user. This gap is currently only bridged by those who can afford to take a gamble on their future commitment to the instrument, and spend a large sum of money on an instrument they may never play well. Only very few manage to become advanced players without owning their own instrument. Cheaper instruments, such as student models, can address the cost issue. A more widespread network of teachers available to teach beginners can help to address the commitment issue; after all, there is little guarantee that users will become advanced players through self-study.

#### 5.4.5 Are Institutions Necessary?

With the Ondes Martenot embedded, albeit sparingly, in the tradition of the conservatory, there is arguably a certain danger in perpetuating a ‘right’ way of learning the instrument. At a time when the instrument’s visibility is expanding, and the popular music and film repertoire is growing, Binet-Audet argues that it is important to allow the amateur enthusiasts a space, as well:

There are people who have not studied the Ondes Martenot, like Jonny [Greenwood], who is self-taught, and he does so much for the Ondes. Yes, he plays Ondes Martenot well, it is his way of playing, it is his music, it’s wonderful.<sup>294</sup>

Greenwood is unanimously hailed as helping the Ondes Martenot tradition to live on — strengthening the network, in other words — despite his non-traditional technique. This begs the question: to ensure the future of the Ondes Martenot network, are accredited courses in official institutions a necessity? Binet-Audet argues that it is absolutely not necessary to take lessons at a conservatory to learn an instrument; it is perfectly possible to learn to play chords on the guitar by yourself, ‘but it is certain that if you take lessons, you learn your chords with someone, you learn how to hold your guitar, you will advance much quicker and go much farther than if you were doing it on your own’.<sup>295</sup>

The technique that allows a player to use the instrument to its full potential should continue to be taught in institutions, many ondistes claim. Each has their own way of explaining why. Rousse-Lacordaire simply points to Loriod, who spent a lifetime developing a technique that is ‘musically valid’. It does require a lot of work to master, she admits. Grenier argues that the technique is the only way to reach true expressivity:

For a long time, I was unable to tell stories on the Ondes Martenot. But then, one day, at a certain point, something happened, all of a sudden you get there. This is

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<sup>294</sup> ‘Il y a des gens qui ont pas étudié les ondes, comme Jonny [Greenwood], c’est un autodidacte, puis il fait tellement pour les ondes. Oui il joue bien des Ondes Martenot, puis c’est sa façon d’en faire, c’est sa musique, puis c’est merveilleux.’ - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>295</sup> ‘Mais c’est sûr que si maintenant tu prends un cours puis tu apprends tes accords avec quelqu’un, t’apprends à comment tenir ta guitare, tu vas peut-être aller plus vite et plus loin que si tu le fais tout seul.’ - Suzanne Binet-Audet, interview, 27 May 2014.

why it's important to go beyond learning just for fun. It's awesome to learn just for fun, fun is the basis of many things, I find, but to get to a level that allows you to transcend your technique, to be able to make your instrument sing, to really come back to the expressivity...<sup>296</sup>

This is reminiscent of Forget's comment about freedom: intense, prolonged study, to her, creates a mastery over your instrument that sets you free. According to Binet-Audet, the benefits of the institution are multiple: it allows you to partake in a musical culture, it gives you useful musical skills and knowledge, and it teaches you discipline, which Binet-Audet says is 'just to allow you to do more in the areas you love.'<sup>297</sup> It allows you to ask, in Binet-Audet's words, 'how can we [play the Ondes Martenot] in the best possible way?'<sup>298</sup> It allows you to listen to highly skilled players performing a rich repertoire, which can bring great pleasure. She argues that even Greenwood, whom she mentions is self-taught and may not have the best technique, is still classically trained, and can use his compositional skills and knowledge of, say, the orchestra, to expand the repertoire in an impactful way. As mentioned above, Greenwood's impact on the network through his repertoire is clear. Here, Binet-Audet points at Greenwood's rich musical education background as the reason why, despite his lack of advanced technique, his works have become a stabilising force in the network rather than — what a conservatory-trained musician might consider — damaging. They showcase the Ondes Martenot's unique features in masterful ways during what is for most audience members their first contact with the instrument. The importance of skill in creating visibility around the instrument is further elaborated upon in section 5.7.

Binet-Audet would love it if the Ondes Martenot became as ubiquitous as, say, the recorder:

The Martenot mindset, that was 'we can play the radio',<sup>299</sup> so in this mindset, it's

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<sup>296</sup> 'Aux Ondes Martenot, j'étais pas capable de raconter des histoires avant longtemps, puis un jour à un moment donné, il y a quelque chose qui passe, tout à coup on y arrive, et...c'est pour ça que c'est important de dépasser le fait d'apprendre comme ça juste pour le plaisir, c'est génial d'apprendre juste pour le plaisir, le plaisir c'est la base de beaucoup de choses, je trouve, mais pour avoir ce niveau là qui permet de dépasser la technique pour pouvoir se mettre à chanter son instrument, à vraiment rentrer dans l'expressivité...' - Geneviève Grenier, interview, 27 May 2014.

<sup>297</sup> 'C'est juste pour te permettre de faire plus, plus dans les chemins que tu aimes.' - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>298</sup> 'Comment on peut faire ça le mieux possible?' - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>299</sup> 'Playing the radio' refers to the fact that Martenot used the concept of the radio transmitter to create the instrument, by turning radio frequencies into playable melodies.



about everyone being able to play. Buy an instrument and you'll have fun, you'll play the radio. So it'd be ideal if everyone... It's like when you play the recorder... you go camping, you bring your recorder. It'd be nice if the Ondes Martenot could be as widespread as that.<sup>300</sup>

The network is undoubtedly strengthened by the existence of official courses, due to the fact that much of the existing repertoire for the instrument requires a high level of skill, as will be discussed in the next section. Pinch's study of the role of institutions in technology demonstrates this:

A technology may succeed or fail depending on how well users are able to operate it. Institutional analysis is particularly instructive on this point. Highly institutionalized processes are ones where humans repeatedly act in the same way, and that is exactly what technologies do to their users. It does not mean that uses are determined or that users cannot come up with new meanings and uses.<sup>301</sup>

Whether the rise of amateur players will damage the network or, by widening it, manage to stabilise it further, remains to be seen. It is a fact, however, that Jonny Greenwood is an example of a player who, despite his lack of 'proper' technique, manages to use the instrument in his own way, which all participants agree has had a tremendously positive impact on the network.

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<sup>300</sup> 'Puis l'esprit Martenot c'était: on peut jouer de la radio, donc l'esprit Martenot c'est tout le monde peut en jouer. Achète un instrument puis vous allez vous amuser, vous allez jouer de la radio. Donc c'est tout à fait ça c'est: amusez vous, faites, t'sais c'est proche de vous là, faites le. Donc, c'est clair, ce serait idéal si tout le monde, c'est comme si on jouait de la flûte à bec, tout le monde, tu t'en vas... tu t'en va en camping t'apportes ta flûte à bec, [rire], t'apporte pas tes Ondes Martenot. Ça serait chouette que ça puisse être un instrument aussi répandu.' - Suzanne Binet-Audet, interview, 27 May 2014.

<sup>301</sup> Trevor Pinch, 'Technology and Institutions: Living in a material world', 461-483.



*Fig. 20: Jonny Greenwood receives his Ondes Musicales Dierstein from Dierstein himself in 2011.*

## 5.5 Repertoire and Composers

### 5.5.1 Introduction

When dealing with a unique instrument, it can be easy to lose sight of the fact that instruments are tools of music-making.. For many of its performers, however, music is the end goal, and their instrument simply a way to make it happen. Players also tend to see themselves as tools in the process. Ratsimandresy is very vocal about this, pointing out that 'it's not just about me being an ondiste, but me playing some music for the music. [...] You can build anything, but if there is no goal, if there is no music for it, there is no point.'

The repertoire is crucial in the Ondes Martenot network. It gives meaning and purpose to the instrument and to its users. It places the instrument in different musical contexts, such as orchestral or popular. Nearly all users who participated in the study are somehow involved in actively continuing the repertoire, for example by actively commissioning composers in their network, writing their own music, demonstrating the instrument's capabilities to new composers unfamiliar with the instrument, and digitising and transcribing scores.

### 5.5.2 User perspectives on repertoire

I did not interview users who identify as composers, but a few of my participants do have experience with composing for the instrument. Players and teachers do often have perspectives on repertoire and composers that are relevant when studying the Ondes Martenot's trajectory.

The task of digitising the existing repertoire is a significant undertaking. There is a large amount of music out there that has not been shared with the world, and part of the reason for this is that, as Rousse-Lacordaire says, in the past, editors were not terribly interested in printing Ondes Martenot scores.

Because there was not enough demand, so it wasn't profitable. [...] There are

works for chamber music, for Ondes, piano and percussion. Françoise Deslogères has written an enormous amount of works, it's crazy. You've got lots of music still resting in folders, in closets.<sup>302</sup>

The Ondes Martenot's status as a niche instrument has caused others to not see it as a priority. For this reason, many existing scores are in danger of disappearing as they, and their owners, age. Luckily, the network does not just rely on existing scores; it also produces new work. New contemporary music written for Ondes Martenot keeps the cycle fresh: it demands performers, which demands teachers, which demands instruments, which demands repairers, and it demonstrates that the instrument's sounds can belong in today's new music. This is something my participants were passionate about in the interviews. Composers, after all, have the power to choose whether to write for the instrument or not. If they do, they strengthen the network by contributing to the existing repertoire. But it is not a simple process. First, composers must be aware of the Ondes Martenot. Then, they must want to write for it, with sufficient understanding of the instrument that they can write a score fit for execution. Then, they must find a performer to perform it. Throughout this process, money must be available.

Forget works with composers as a player, but also with aspiring composers in her role as teacher. Her insights show that the composers she meets these days are more inspired by different types of music such as popular music, as well as religious music such as Messiaen:

I feel that the new generation of composers, they are discovering- they are like, two generations after Messiaen, Jolivet, and so they know about Messiaen but they are more open to Radiohead and more open to their music, it's more free.<sup>303</sup>

As a user of the Ondes Martenot, Ratsimandresy feels it is her duty to help build the repertoire, to make sure new music is still composed, so that the tradition is respected and continued. This is very similar to what Rouse-Lacordaire says about Jeanne Loriod commissioning many composers herself, which gives an idea of the work users put in to advance the instrument. Laurendeau also mentions spreading

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<sup>302</sup> 'Parce qu'il n'y a pas assez de demande, donc ce n'est pas rentable. [...] Il y a des oeuvres pour de la musique de chambre, pour onde, piano et percussion. C'est Françoise Deslogères qui avait écrit énormément de pièces, c'est fou. On a beaucoup de musique encore qui dorme dans les dossiers, dans les placards.' - Pascale Rouse-Lacordaire, interview, 14 September 2017.

<sup>303</sup> Nathalie Forget, interview, 12 September 2017.

awareness among composers. Although he has written music in the past, he does not see himself as a composer. Instead, he has used his connections to get more works written for Ondes Martenot:

Since I've become professional, I've stopped composing, but I have retained friends who are composers, which has helped me later on, because they have written for Ondes Martenot. Voilà.<sup>304</sup>

As seen in chapter 2 with Ginette Martenot, the tradition of players and teachers networking with composers is a longstanding one. This is one of the many ways in which users actively work to maintain the Ondes Martenot network, which helps the instrument's future as well as their own career.

### 5.5.3 Players Becoming Composers

Ratsimandresy's concern with repertoire stems from her musical upbringing. The director of the conservatory in Évry (which still exists, but no longer offers Ondes Martenot classes) was a composer himself, and would each year invite famous composers to interact with the students. She still works closely with other artists and composers today, from experimental rock ensemble Art Zoyd to an Italian singer, and in these contexts, partially or wholly, takes on the role of composer. Here we see a glimpse of the composition process, whereby the player is hired to add their own input to the work:

Yes, improvise with the score; they had high Ds in mind, etcetera. It's all oral sometimes, so communication is important. If he likes it he will say 'go on', if not he will say 'stop'. But then if you just want to give the best of you it's important to be able to communicate. So it will be me improvising, but not really, because they are very picky in this world and they just say 'no no no', and I realise I have to do the score myself. They ask you something completely different... It's interesting, you have to be flexible and open and very fast. It's now and not tomorrow, tomorrow is too late.<sup>305</sup>

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<sup>304</sup> 'Dès que je suis passé professionnel c'était terminé la composition, mais j'ai gardé des amis compositeurs, qui d'ailleurs, plus tard, ça m'a servi car ils ont écrit pour Ondes Martenot. Voilà.' - Jean Laurendeau, interview, 24 May 2014

<sup>305</sup> Ratsimandresy, interview, 13 September 2017.

Ratsimandresy explains that she is essentially asked to improvise, as she was not given a score, and the challenge lies in trying to find out what works and what does not. In retaining those parts that are given the thumbs up throughout the improvisation process, she begins to create her own score. Although this is not an uncommon process in music composition, for Ondes Martenot players, this is often used out of necessity. Those who want an Ondes Martenot featured in their work, but don't know enough about the instrument to create a score, will hire the player as player-composer, asking them to take part in the compositional process. Via this process, the Ondes Martenot can be included in compositions without requiring the main composer(s) to learn how it works and what it can do. The burden of knowledge of the instrument remains with the hired player. As a user of the Ondes Martenot, being a liminal entity is crucial to the expansion of today's repertoire.

Another reason why it is important for players to become composers is to create a more diverse repertoire. Throughout the past century, the Ondes Martenot has frequently been pigeonholed as a certain type of instrument. Its strange electronic sounds lent themselves to spy movies (*Billion Dollar Brain*, 1967) and sci-fi series (*Captain Scarlet and the Mysterons*, 1967-68), its lyrical glissandi were used to evoke strong connotations of euphoria (*Turangalila-Symphonie*, 1949), divine presence (*Trois petites liturgies*, 1944) or paranormal activity (*Ghostbusters*, 1984). By far the most common timbre used is that of the *onde* (O), which most resembles that of the Theremin — or even, with the right vibrato, the human voice. The players, who know their instrument, can showcase other sides of the Ondes Martenot that most may be unfamiliar with. Low, growling sounds, white and pink noise, warm metallic timbres, and percussive sounds are just a few examples. That said, it is worth noting here that Pierre Boulez, who publicly denounced the Ondes Martenot for being too lyrical and sentimental, was in fact a talented player. His insight into the instrument's myriad affordances did not prevent him from dismissing it for being too lyrical for modernism.

Forget also believes that players can showcase their instrument to spread awareness about its possibilities, and does this with improvisation:

There are so many scores that have not been written. Nobody knows what you can do with this instrument. You have classical things, melodic things, but you have so many things.... So it's really nice, improvisation, because you can go and mix with every instrument very well, you won't have difficulty because you

can change your timbre.<sup>306</sup>

Forget here mentions that one of the advantages of the Ondes Martenot is that the myriad timbral options ensure that the instrument is capable of blending in with any ensemble. This is an often overlooked advantage, as most who are aware of the Ondes Martenot but are not users, tend to have limited notions of what it can sound like.

As covered in the last section, players often network with composers to encourage more repertoire to be written. As they don't see themselves as composers, their active role in composition is limited. The purpose of their composition activity is mostly in function of spreading not just visibility, but awareness of the instrument's musical capabilities. Ondes Martenot users can be said to actively use composition as a tool to maintain and strengthen the network.

#### 5.5.4 The *instrument de base*

If composers write for Ondes Martenot, they very often have a specific Ondes Martenot player in mind, who they know and who can advise on the possibilities the instrument has. One issue that arises from a lack of standardisation throughout the available instruments is compositions written for an instrument that has features others don't. Examples are the Ondéa, the new Dierstein model, and the Ondomo, which all have added features compared to the original Ondes Martenots, and some, like the Ondomo, are lacking features. When asked about whether the Ondes Martenot name should be adopted by other, newer instruments, Forget explains how this diversification impacts the area of repertoire and composers. The quote is inserted integrally, as it touches on many relevant aspects:

I think it's a mistake to make some score for this model and this model and this model. Even if it has already been done. Because some composers, they really like the Ondéa, what you can do with it. I told them: then I will not be able to teach [the score], I will not be able to give it to other ondistes, but sometimes they don't care. So if they are really aware about that and they don't care, I agree that it's OK. I can understand, you have some composers, they don't care, they write for one person. It's nice also, it's like a love story. So I did that for example

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<sup>306</sup> Nathalie Forget, interview, 12 September 2017.

for Pascale Criton. And yeah, it's something about love, only you can play that piece, with this model and this loudspeaker... But she was really aware of this, she knew all the models, she knew that I won't be able to teach it, and voilà. But now I'm always clear about that, and most of the composers, they want to write for everybody. So then they have to- [switches to French] *l'instrument de base c'est l'ondes Martenot*.<sup>307</sup> We have some here with some difference — Dierstein — they know that, and then every model has to be able to play that. Except the Ondomo, which probably more depends on the piece. Some pieces can be played, but not every. So you have to, and when you are in orchestra, it's Ondes Martenot. When I play with my Ondéa, it's Ondes Martenot. Messiaen, it's Ondes Martenot. All the most important composers, it's Ondes Martenot. It's written [on the score]: 'Ondes Martenot'. You cannot— if you want to build another instrument, you cannot— it's a real mistake to put [other features] in there and say, 'oh, I play another instrument'. The people write for Ondes Martenot. And they don't care if you play this model or that one.<sup>308</sup>

Forget thus advocates composers writing for 'the' Ondes Martenot. This *instrument de base*, as she calls it, should remain the focus of compositions, regardless of new features such as MIDI or added timbres. In turn, instrument makers need to be aware of the fact that composers write for the *instrument de base*, so players need instruments that can play their compositions. Forget, as mentioned before, is somewhat embedded in the classical tradition (although also in rock music), which could explain her answer. The repertoire, in this tradition, was created to be performed live, and to live on beyond its composer and original players, which makes her point such an important and valid one. For the popular music tradition, which heavily relies on recordings, and where players, not composers, are central figures, the issue of variation in instruments is not as detrimental. In fact, it can be seen as positive, as artists continually search for their unique sound. Artists in popular music record their music and play it live, and when they stop, only their recordings live on, generally speaking. There is not such a need for other players to be able to replicate the original repertoire. Even tribute bands often put their own stamp on the covers they play. Cover artists, who aim to emulate the original music rather than re-interpret it, are the exception that proves the rule. It can be said that makers who create additional features in new Ondes Martenot models thus don't particularly cater to the classical tradition, but rather, to popular music artists.

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<sup>307</sup> 'The base instrument is the Ondes Martenot.' - Nathalie Forget, interview, 12 September 2017.

<sup>308</sup> Nathalie Forget, interview, 12 September 2017.





*Fig. 21: Nathalie Forget demonstrating the Ondes Martenot ahead of Tectonics Festival in Glasgow, 4-5 May 2018.*

#### 5.5.5 Popular Music

Increasing numbers of popular music artists are discovering the Ondes Martenot. Chapman, who is firmly in the popular music corner, recalls:

If you think about how Jonny Greenwood has used it in Radiohead, and apparently now like, Gotye, he went out to the Audities foundation to do some recording, and access the instruments that David has out there. He was blown away by the Ondes, and that's what he's seeking, is old [instruments]... and recorded David's Ondes for his next album, which is coming out. Patrick Watson here in Montreal, there's a lot of buzz around him, and he's committed, I guess, to put it on some of his next records, so there's more and more of a celebrity position.<sup>309</sup>

The three artists Chapman mentions all have international careers and multiple albums. Their use of the instrument gives visibility not just to the instrument itself, but to the variety of ways it can be used in music that are outside of the classical repertoire tradition. Again, David Kean and the Audities Foundation play a key role in this process: the studio is a magnet for popular music artists who want to explore different sounds, and the Ondes Martenot is made available for people to experiment

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<sup>309</sup> Owen Chapman, interview, 26 May 2014.

with, without the commitment of having to buy it and learn how to play. They can either try it themselves, or hire one of David's *ondiste* acquaintances. The interest from several indie artists in recent years seems to suggest that if the Ondes Martenot is available, people will reach for it. Gotye, it must be mentioned, has been seen playing an instrument called the Ondioline for several years — ever since he became a fan of the music of French electronic music producer Jean-Jacques Perrey. The Ondioline is an instrument very similar to the Ondes Martenot, but slightly smaller and with variations in sound generation, features and timbral possibilities. It was created by Frenchman Georges Jenny in the 1940s, and Jean-Jacques Perrey used it throughout his career. After Perrey's death in 2016, Gotye put together an Ondioline Orchestra and played a tribute concert in Brooklyn, New York (US).<sup>310</sup> Gotye's visit to David's studio seems also to have warmed him to the Ondes Martenot, as Jean-Loup Dierstein reported in our interview that he had recently ordered a Dierstein model from him.<sup>311</sup>

When it comes to popular music, Jonny Greenwood is by far the most famous current Ondes Martenot user. In the past two decades, he has played and composed an increasingly complex repertoire. First included on a Radiohead album in 2000<sup>312</sup>, the Ondes Martenot gained a more prominent role in Greenwood's first film score, for the avant-garde *Bodysong*.<sup>313</sup> *smear* (2004) for two Ondes Martenots and chamber ensemble of nine is widely thought of as Greenwood's first classical work for the instrument.<sup>314</sup> The programme notes for *smear* can still be found on the website of publisher Faber Music, and it includes a paragraph written by Greenwood on the Ondes Martenot that echoes many other users' sentiments in this thesis:

My impetus for writing *smear* came partly from a desire to get the ondes martenot heard. I'm passionate about the instrument; it's hard not to be. It's so little known, and yet it's the most expressive electronic instrument ever invented. It's often treated as a special effects device, because of the unearthly noises it can make such as ghostly, swooping tones in science fiction films. Ondistes are forever being invited to sound track recordings, with the only instruction being

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<sup>310</sup> Sammy Preston, 'Gotye Makes His Return with an Ondioline. Sorry, a What?', *Broadsheet* (12 January 2018) <<https://www.broadsheet.com.au/sydney/entertainment/article/gotye-makes-his-return-ondioline-what>> [last accessed 13 December 2018]

<sup>311</sup> Jean-Loup Dierstein, interview, 14 September 2017.

<sup>312</sup> Radiohead, *Kid A* (Parlophone, 2000).

<sup>313</sup> *Bodysong*, dir. by Simon Pummell (FilmFour, 2003).

<sup>314</sup> Jonny Greenwood, *smear, for two Ondes Martenots and chamber ensemble of nine* (Faber Music, 2004).

‘improvise’, but it can also create earthly sounds to rival any orchestral instrument. Invented by Maurice Martenot in the 1920s, the instrument was initially met with distrust from the early musique concrete composers for being too lyrically expressive. Later, Olivier Messiaen was a champion of the instrument, but there’s a sense today that somehow it’s dated; merely a French curiosity. This is partly because of how it’s most often heard (1950s B-movies and 20th century French composers), and partly because it’s so hard to find one. Also, people assume it’s complicate [sic] to play. This isn’t particularly true either: a button, a string and a keyboard are the basis of the player’s control over every aspect of pitch, colour and dynamics, and all this with a subtlety and precision that modern midi technology just can’t emulate. It’s a pure instrument, invented from the purest motives – to use electricity like a saxophone uses air. And like Adolphe Sax’s instrument, Maurice Martenot’s deserves to be heard and used by performers and composers everywhere.<sup>315</sup>

His Ondes Martenot compositions have continued to span these three genres, including multiple scores for Paul Thomas Anderson films, collaborations with the London Contemporary Orchestra, and a tour and album with Israeli composer-performer Shye Ben Tzur and his Indian ensemble the Rajasthan Express. Let us not forget that Greenwood, a longterm fan of the Ondes Martenot, commissioned synthesizer company Analogue Systems to create the French Connection, and is rumoured to have received the first of Dierstein’s Ondes Musicales, serial number 001. His dedication to the instrument has resulted in a rich and varied repertoire that shows the Ondes Martenot at home in a variety of roles and contexts. Much like the users interviewed, Greenwood showcases the Ondes Martenot in its chameleon-like adaptability. Greenwood is an example of an actor who has a high level of agency in the network. His works, along with his status as a musician, have affected (and created) an astounding number of new actors, and in doing so, he has contributed significantly to the Ondes Martenot’s journey towards stabilisation.

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<sup>315</sup> Jonny Greenwood, ‘*smear* (2004) Programme Notes’, *Faber Music* (2019) <<https://www.fabermusic.com/repertoire/smear-47>> [last accessed 30 May 2019].

## 5.6 Documentation and Researchers

### 5.6.1 Introduction

Some users are not Ondes Martenot practitioners, but actively participate in the network by researching the instrument and producing documentation as part of their profession. These users can be categorised under ‘researchers’, although they do not all subscribe to the stereotype of the university-affiliated academic. Some users with other roles, such as teachers or players, take on the research role for a short period of time, after which they return to their other roles. What sets these people apart from others who have written about the Ondes Martenot is their active participation in the network. They usually know a number of prominent players, teachers and repairers by name, follow their career, and lean on them for information. Their sources are thus, in a way, primary sources. Even those who are not otherwise users of the Ondes Martenot — those who don’t play it — tend to have a personal affinity for the instrument, and they create their work to spread information and visibility. Their relationship with other users seems to be of a symbiotic nature: the documentation created by the researchers is made possible by the contacts in the network, and the users benefit from the visibility it creates for their instrument.

### 5.6.2 Key Researchers and Documentation

Jeanne Loriod’s documentation of the Ondes Martenot is a key source for anyone wanting to learn more about the instrument. It is written as a handbook for students wanting to learn the technique she spent her life developing, and as a treatise, for composers wanting to understand the affordances of the instrument. She is therefore, alongside being a player and teacher, a researcher. Jean Laurendeau can be seen as a key researcher, as his biography on Maurice Martenot is the only full-length book on the topic of the Ondes Martenot to date, and it includes anecdotes and insights not found elsewhere. His research consisted of ethnographic data alongside interviews with Martenot, family members and other prominent figures. Caroline Martel is a

professional filmmaker whose documentary *Le Chant Des Ondes (Wavemakers)* premiered in 2012. The film, which includes interviews with users and family members of the inventor, performances, original circuit diagrams and a special soundtrack by Suzanne Binet-Audet, was the first substantial piece of Ondes Martenot documentation in the twenty-first century, and allowed a layman's audience a glance into the world of the Ondes Martenot. An English version (via subtitles), which Laurendeau's book still lacks as of 2018, invited the international audience in, and the appearance of Jonny Greenwood attracted those who had been introduced to the Ondes Martenot via Radiohead. Martel has also written an article on the Ondes Martenot, as has Canadian academic Owen Chapman.<sup>316</sup> Chapman, at Concordia University in Montreal, has completed two funded projects involving the Ondes Martenot, informed by years of involvement in the Montreal network. Research is also taking place in musical instrument museums around the world, but predominantly in the Music Museum (Musée de la Musique) in Paris, where Thierry Maniguet leads the research division of the twentieth century musical patrimonium. Stéphane Vaiedelich, a member of said team, let me know during my visit to Paris that the museum had recently acquired the entire archive of Maurice Martenot's work from the Martenot family via the 'Institut national du patrimoine' (INP), the French National Heritage Institute.<sup>317</sup> Vaiedelich himself has actively contributed to the body of work on the instrument.<sup>318</sup> Another researcher is Jacques Tchamkerten, writer of the Ondes Martenot chapter in Dingle and Simeone's book on Messiaen.<sup>319</sup> Library director at the conservatory in Geneva, Switzerland (Conservatoire de Musique de Genève), he has produced documentation on Swiss and French music, including numerous entries in the *Grove Dictionary of Music*. He is also a trained Ondes Martenot player, having studied with Jeanne Loriod, and has performed on several occasions. His musicological insights into composers' uses of the Ondes Martenot are informed by his own practice and understanding of the instrument, resulting in a level of depth rarely found elsewhere.

Repairers sometimes become researchers. Their unique position allows them not

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<sup>316</sup> Martel, 'Wired for the Human Touch: The Ondes Martenot Surges Toward a New Era of Discovery', *MusicWorks*, 117 (2013), 39-45; Chapman, 'Radio Activity: Articulating the Theremin, Ondes Martenot and Hammond'.

<sup>317</sup> Stéphane Vaiedelich, personal communication, 13 May 2017.

<sup>318</sup> Stéphane Vaiedelich and Laurent Quartier, 'Obsolescence technologique et survivance musicale: le cas des Ondes Martenot', *Technè*, 37 (2013), 66-71.

<sup>319</sup> Tchamkerten, in: Dingle and Simeone.

only to study original components, but also to spearhead the hunt for new solutions to technical problems. For example, repairman Jean Landry's research into the volume button has enabled him to map the unique curve of the pressure to volume ratio of original instruments so as to recreate it digitally. It is now used in the new Ondéa button. This is another instance of the roles actors in the network take on to maintain it. Repairers' research contributions to the future of the instrument go beyond the obvious ensuring the instruments' components are repaired; behind the scenes, they look for long-term solutions that will benefit users years from now. These contributions, rarely documented in histories, only become visible when the network of relations between actors is actively studied.

### 5.6.3 Insights from Researchers

Caroline Martel and Owen Chapman are the only researchers interviewed who are not players themselves. They are seen as participants in the network partly due to their close relationships with other professional players, teachers, repairers and composers. As Martel says, 'as a documentary filmmaker, I hung out with these people for like, five years' and she says Chapman also 'hung out more with them and with myself'.<sup>320</sup> Additionally, their work around the Ondes Martenot is part of their professional activity, as Martel is an independent filmmaker, who before this project created the documentary *Le Fantôme de l'opératrice*, which sheds light on 'the story of female telephone operators' central place in the development of global communications'.<sup>321</sup> Chapman is Associate Professor of Sound Production and Scholarship at Concordia University in Montreal, whose research can be situated under the areas of sound, technology and communication. The Ondes Martenot documentation they have created is part of their job, but, contrary to some other users, does not encompass the majority of their career. As documentary maker and academic researcher, respectively, their roles are to observe. Slightly further removed, their interpretations have the potential to contribute different perspectives from those users whose career relies on the instrument.

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<sup>320</sup> Caroline Martel, interview, 27 May 2014.

<sup>321</sup> Caroline Martel, 'Le fantôme de l'opératrice', *Women Make Movies* (2004) [press kit] <[http://www.wmm.com/filmcatalog/press/poto\\_presskit.pdf](http://www.wmm.com/filmcatalog/press/poto_presskit.pdf)> [last accessed 13 December 2018]

The aim of Martel's project, the documentary on the Ondes Martenot, was as follows:

[...] to discover the universe of the Ondes Martenot, that's what it is for me, it's not just about the instrument, but it's also to be able to communicate it and educate people. It's not just my audience, it's all the journalists, and the curators, the programmers...<sup>322</sup>

Here we touch on an issue she has frequently encountered: the misinformation on the instrument spread by journalists and writers. When she comes in contact with the press, she demands to check their drafts:

All the time I had to revise their texts because they're writing so many wrong assumptions about the instrument. [I'm] going to an extent to really make sure they're not going the easy route, like 'oh, this is the ancestor of the synthesizer', right? [...] Most of them were like, 'oh god, ok thank you'.<sup>323</sup>

Martel, as a researcher, is aware of the damage misinformation can do, and as it is counterproductive to the aims of her project, she actively tries to prevent others, such as members of the press, from doing so. The current lack of reliable documentation plays a significant role in journalists relying on assumptions rather than facts, which highlights the importance of her work, and of this thesis.

Martel sees the instrument as 'an object of constant research and development' with great potential for future innovation. She looks to the future, rather than focusing on preserving the narrow interpretations of the instrument:

I have issues with people seeing it as vintage. That's missing the point. I see it as an open instrument. That's also really paradoxical; it's really 'set' on some levels, because the Ondes players are used to some parameters of the instrument that are a bit quirky and not electronically standard. So the makers really tried to respect the instrument as it's always been. But at the same time there's all these new things that people can try. That's what Dierstein is doing, connecting — MIDI and CV output. That's also kind of the future. It's kind of limitless.<sup>324</sup>

Martel here sees the influence of players set in their ways as detrimental to the future development of the instrument. She welcomes experimentation with modern

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<sup>322</sup> Caroline Martel, interview, 27 May 2014.

<sup>323</sup> Id.

<sup>324</sup> Id.

features, and would prefer the instrument to be ‘free from the traditional Ondes Martenot players’. Tradition, in her view, holds the instrument back, rather than protecting its future legacy. It is useful in this moment to refer back to the SCOT notion of the stabilisation of a technology, which increases only as the interpretive flexibility grows smaller and relevant social groups start to agree on one shared meaning. At the same time, a re-interpretation, at times called reconfiguration or appropriation, of the technology can prolong its lifespan, as was demonstrated in Lindsay’s work on the TRS-80 personal computer. Martel argues that a more open interpretation of the Ondes Martenot, and further experimentation, will strengthen the network, not narrow its meanings. She can be seen to argue for a higher interpretive flexibility. I argue that Martel here strives for the further stabilisation of the Ondes Martenot *network*, which can be achieved by making more connections with new actors. She is less concerned with the preservation of the original meaning of the Ondes Martenot as constructed by its actors, and more concerned with the continuation of the Ondes Martenot as a concept constructed by its actors, which in her eyes means accepting different interpretations of the instrument.



*Fig. 22: Caroline Martel and Jean Laurendeau.*

Chapman, through his background as a turntablist, approaches the Ondes



Martenot from a music technology perspective, and often contextualises his interpretations within popular music history and culture. His insights are different, but in a way complementary, to those of many other participants who are firmly situated in the classical and contemporary music tradition, and are similar to Martel's in this sense. When he saw the Ondes Martenot played for the first time in 2007, he was immediately reminded not of a string instrument, but of the turntable, due to the division of labour between the hands, one on volume control (the crossfader), the other on pitch (the record). The shaping of each phrase is controlled by the hand on the crossfader, similar to the shaping of each note by the volume button on the Ondes Martenot. He also believes that the most used and recognisable timbre, that of the *onde* (O), is rather dated:

I think there is a tendency within the repertoire, and by keeping playing the same repertoire, for certain sonorities to be repeated, and unfortunately they can make the Ondes Martenot sound a little more clichéd. [...] There's a Tristan Murail piece that the Ensemble d'Ondes love to do called *Mach 2,5* that uses that radio sound. I used to love it and now I hate it, and I'll love it again. It really dates the Ondes.<sup>325</sup>

Contrast this with Binet-Audet's contextualisation of this same piece:

*Mach 2.5*. That was truly a new way of writing for the Ondes. Yes, [Tristan Murail] was *ondiste* himself, so... from the Seventies onwards they really wrote in a different way for the Ondes. There was the whole area of experimental music that was translated also in the Ondes Martenot, like you had Scelsi with the cello, you had the equivalent of sonic research like there was in compositions of that era.<sup>326</sup>

From a popular music perspective, one could find the sound dated, particularly from a modern point of view, but from Binet-Audet's classically trained perspective, the piece is innovative. Chapman does go on to add that this same timbre makes the Ondes Martenot so historically significant, as 'because of the heterodyning mechanism that both Theremin and Martenot used, there was a sweetness to the base

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<sup>325</sup> Owen Chapman, interview, 26 May 2014.

<sup>326</sup> '*Mach 2,5*. Ça c'était vraiment une nouvelle écriture pour les ondes. Ouais, ça c'était, il était *ondiste* lui même, puis, ici il y a eu... à partir des années 70 vraiment on a écrit d'une autre façon pour les ondes. Il y avait tout le côté musique expérimentale qui était traduit aussi dans... via les Ondes Martenot, comme on avait Scelsi avec le violoncelle, tu avais l'équivalent des recherches sonores comme il y en a eu dans les compositions de cette époque là. - Suzanne Binet-Audet, interview, 27 May 2014.

timbre you didn't find in other instruments'. An area within which he sees the instrument as significant today, is among synthesizers, both analogue and digital. He points out there is currently a race to have the most innovative controller:

Controllers for MIDI instruments, for all the synthesizers right now, it's exploding. Things you can plug into your iPhone... there's a lot of controllers out there, but the Ondes Martenot still stands [...] The keyboard control model has obviously become the predominant paradigm for how that sort of instrument is made. So the Ondes Martenot still stands as like, unique, because of the internal key vibrato, because of the *touche d'expression*.<sup>327</sup>

The Ondes Martenot's features remain unique even now, in the digital era. Software will depreciate over time, but there is a 'tactility to the engagement with the instrument that is becoming increasingly rare in modern synths'.<sup>328</sup> When it comes to his research approach, Chapman is a proponent of practice-led research, or as he calls it, research-creation.

By playing the instrument, you come to understand why it would be something that Suzanne Binet-Audet would be so passionate about. From a tactile point of view and a subjective audio point of view, because you know, you actually felt it. [...] I think there is a place for research which is informed by first-hand accounts with the devices, even if it's a bit of a novice [...] especially if there is a reflexivity that is integrated into the study, as opposed to just 'well I do this because I love the instrument, I've been playing the instrument for a long time, and I'm going to spew a bunch of my own opinions.'

Chapman discusses the time he applied for a grant to study the Ondes Martenot, in 2008. Initially, he wrote the grant proposal to study just the Ondes Martenot, but when it was rejected, he resubmitted an expanded project that would also incorporate the Theremin and the Hammond organ. This version was accepted. This sequence of events gives the impression that the funding body did not see enough value in a project that was just about the Ondes Martenot. The Theremin and Hammond, on the other hand, highlighted the instrument's value as an historical object. It contextualised the instrument in the more familiar narrative of historically significant instrument, without acknowledging the instrument's continued context of use today.

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<sup>327</sup> Owen Chapman, interview, 26 May 2014.

<sup>328</sup> Id.

During our brief discussion of actor-network theory, Chapman agrees that there is evidence of the Ondes Martenot's agency upon its users.

It could be argued quite successfully that the Ondes Martenot has a kind of aura of agency about it. [...] As an instrument it manages to, as the ondistes like to say, strike people. They become almost activated and propelled to engage with it and follow its legacy, because it just grabs you. You're just forced to make something happen.<sup>329</sup>

Here is where the *coup de foudre*, the love at first sight, of which many users speak, becomes a force of productivity. All of the users I interviewed talked about the ways in which the instrument captivated them upon introduction, and subsequently compelled them to continue its legacy in the way they were able to, be it through learning to play, recording, giving demonstrations, publishing literature, lobbying for classes at conservatories, filming a documentary, creating their own instruments... Viewing this behaviour through the eyes of ANT, we can describe it as the tangible, detectable results of the agency of the instrument. Its effect on the user, as seen above, can shape and reshape their role and identity: players become composers, repairers become researchers, so that the instrument continues to exist. It is in these relationships between instrument and user, between user and user, between *actors*, that the trajectory of the network is determined.

#### 5.6.4 Impact on the Network

Researchers, like other users, have an incredible opportunity to influence the network positively. Their aim is to strengthen the network. Research can advance the visibility, knowledge and understanding of the instrument, and even its further development. In Martel's own words, 'the more you know about the past, the more you can genuinely innovate'.<sup>330</sup> Martel identifies one specific area where her documentation can make a difference: institutions.

I met with the head of the CNSMDP (the conservatory in Paris) in maybe 2008, and he was really telling me that every year, they were questioning if they would

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<sup>329</sup> Owen Chapman, interview, 26 May 2014.

<sup>330</sup> Caroline Martel, interview, 27 May 2014.

keep the Ondes Martenot. Now, I trust that they don't question it anymore, now that there's more initiatives, and the film. It hasn't been played much in France, but that is the goal, that institutions not question the legitimacy and the importance of the instrument.<sup>331</sup>

Martel sees her documentary as contributing to this push towards acceptance. She adds that university departments, be it in music or technology or communication, have been much more understanding of the instrument's importance, despite not actively teaching the Ondes Martenot. Researchers and practitioners are 'seeing so much importance and embrace it and bring it into institutions to be alive and be shared with younger students'.<sup>332</sup> In a way, this can be seen as an advantageous move away from traditional conservatories.

However, with this opportunity for impact comes great responsibility. Rousse-Lacordaire was not happy about the narrative constructed in Martel's documentary, describing it as a death knell to the instrument:

To me, the film is a burial. To me, it's as if the Ondes Martenot is definitively dead, this movie. Because when you see the photos of Jean-Louis Martenot, who goes to visit the ruins of his dad's house in Neuilly, the film ends practically with that, you say: the Ondes Martenot is done. No future perspective whatsoever. [...] When you see — he'd be angry if he heard me, Jean-Loup, but — when you see Jean-Loup in the film, working in his workshop, it's exactly the same as Martenot 60 years ago. [...] It is very well filmed, but it's dramatic for us.<sup>333</sup>

Although Martel's views on the future of the instrument are certainly positive — 'I'm optimistic, but I think it's kind of realistic to [be optimistic]' — the documentary could be seen as not showing a particularly promising future.<sup>334</sup>

Rousse-Lacordaire's observation of Jean-Loup in his workshop is an astute one, and reflects the concerns several users have about the urgent need for trainee repairers.

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<sup>331</sup> Caroline Martel, interview, 27 May 2014.

<sup>332</sup> Id.

<sup>333</sup> 'Pour moi ce filme c'est un enterrement. Pour moi c'est: comme ci l'OM est definitivement morte, ce film. Parce quand on voit les photos de JLM qui va voir a neuilly, la maison de son pere des ruines, le film termine casiment avec ca, on se dit: l'OM est termine. Aucune perspectif d'avenir. [...] Quand on voit - il serait fache s'il m'entendait, Jean-Loup, mais - quand on voit Jean-Loup dans le film, travailler dans son atelier, c'est exactement la meme chose que martenot, il y a 60 ans. [...] Il est très bien filmé, mais c'est dramatique pour nous.' - Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>334</sup> It must be said that Martel did interview Ambro Oliva, who continued the legacy with his Ondéa and is involved in the new Ondéa project, but for certain reasons that remain unclear, Oliva withdrew his consent for Martel to use the footage. Rousse-Lacordaire does acknowledge this in saying it was not entirely her fault.

In a similar vein, Chapman's Ondes Martenot paper, which also discusses the Theremin and Hammond organ, could be seen as cementing the Ondes Martenot's place among early twentieth century instruments, despite them not having much in common with today's context of use. In my interview with him, Chapman says that he was all too aware of this, but could not secure funding for his research unless it also included the other two instruments. He does acknowledge that, in hindsight, he was still a bit inexperienced around how to write a grant proposal with a strong impact factor, and the second version 'allowed me to tease out some other historical, theoretical ways of understanding the relationship of electronic musical instruments'.<sup>335</sup> An impact factor he would include now, would be the link with Quebec, as he remarks that 'there is still a lot of missing general knowledge about the Quebec relationship with the Ondes and its impact', not least with its acousmatic/electroacoustic scene, via composer Gilles Tremblay.<sup>336</sup>

Funding is often a double-edged sword, as it can provide opportunities and at the same time create restrictions on the output. In this case, it was decided by the funding body that an Ondes Martenot-only research project was not acceptable. The quality of the grant proposal aside, it is possible that the decision-makers were perhaps not enough informed of the cultural value of the Ondes Martenot, and that can only change when more documentation is produced — a vicious cycle. The funding body, here, is also an actor in the network. It has a considerable amount of agency on the network in that it decides whether students can study the instrument, whether Ondes Martenot teachers can continue their profession, where makers can sell their instruments to young performers. More visibility and awareness can influence a positive outcome of a funding bid, as the value in the instrument's continuation becomes clear to those investing in it.

It can be tempting to welcome new and much-needed documentation, without also considering how it can unintentionally damage the network. At the same time, we cannot expect research to be perfect, nor can we expect researchers to be fully aware or in control of the ways in which the research will be used and interpreted. At this point in time, research produced by practitioners or leaning on practitioners' insights is severely lacking. The research mentioned here creates visibility in various areas such as academic literature, museum and conservation studies, and

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<sup>335</sup> Owen Chapman, interview, 26 May 2014.

<sup>336</sup> Id.

cinematography, and each has its own specific audience that can use it to educate themselves on the instrument and its context. Chapman strongly believes in raising awareness around the Ondes Martenot through research:

Raising awareness, especially in the English-speaking world, around the Ondes Martenot, is an important thing to do in and of itself because of its historical significance. And not only its historical significance in a linear kind of sense, in terms of the progression of analogue synthesis, where it has a very special and slightly under-acknowledged place, but even its contemporary uniqueness, as we were saying.<sup>337</sup>

Chapman, here, highlights the importance of contextualising the instrument's value in today's music, and implies that English sources are particularly needed. As a researcher, he is used to thinking about impact, and the value and relevance his objects of study have today. Convincing others of this value can facilitate future research. The Ondes Martenot's features and affordances, he argues, are unique even in the twenty-first century. He sees historical significance as not just a thing of the past; it also applies to the world as we currently know it. In other words, the Ondes Martenot's continued historical value even in today's context needs to be known. It may convince others to start paying attention.

#### 5.6.5 The author

This thesis and its author form part of the Ondes Martenot network as respectively documentation and researcher. As pointed out in the methodology, there is an unavoidable element of bias involved when I, the researcher, describe the network in which I myself participate. In 4.2.4 Reflexivity, I pointed out that ANT argues that there is no outsider perspective, as each actor observes and translates meaning through their own frame of reference. As researcher, I could be said to be a peripheral user compared to a professional ondiste, even compared to researchers like Martel and Chapman, but I nonetheless have been close to the instrument and its users during my research, and have 'used' the instrument to the end of producing documentation on it. As researchers, we continually contextualise our objects of

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<sup>337</sup> Owen Chapman, interview, 26 May 2014.

study, and in doing so, articulate their relevance to the wider world. For an instrument that is still struggling, in some ways, our contributions can encourage not just visibility, but understanding.

My approach has aimed to find ways to contribute research to histories of electronic instruments that is less reductive and deterministic, and more interdisciplinary and complex, by focusing on the socio-technical relationship. I hope that the documentation I have created will stabilise the network more than it could damage it.

## 5.7 The Future of the Ondes Martenot

### 5.7.1 Introduction

When talking to Ondes Martenot users, the future of the instrument is a much-debated topic. Due to the various challenges the network faces, some of which are outlined in previous sections, the future for professional Ondes Martenot users is mostly uncertain. To secure the future of the instrument — to create a more stable network — the users have identified a number of things that will need to change. Below are the participants' answers to the question 'what needs to happen to secure the future of the Ondes Martenot?' I have chosen to quote heavily in this section, because the question is a broad and complex one, and the participants' answers synthesise themes that were separated out in previous sections, in a way that reflects their interwovenness. They demonstrate that, although we can discuss repertoire, researchers and instruments separately, for example, they all hang together in the network, influencing each other. Some of the solutions and suggestions mentioned by participants have already been set in motion by the time of this write-up, and these will be detailed later on in this chapter.

### 5.7.2 Repertoire

The above question proved difficult to answer for some, and straight-forward for others. More than one participant used the idea of the feedback loop to illustrate the complexity of the question. Ratsimandresy:

I don't like to say it's complex but it's complex. It's a combination of things. From my point of view, the more music you make, the more exposed you are, and then they ask you. That's how it works for me. I'm doing new pieces, I have a big ongoing project for 2018-19, a lot of commissions. The reason why I got the trust of my producers is because there was music before that. And then to say 'oh you've done that' [mentions Ravel as an example]. [...] I don't know [where the loop starts], there are several. If I'm not paid here, I'm not coming to teach. That could be the start of the loop. I can send the students after 10 years to



Nathalie [Forget, at the CNSMDP], they can have their own production. Or maybe I can start the loop with me now and say ‘I put my money to pay a composer to do a piece’, and then the audience comes, I don’t know where to start the loop. I believe in the feedback loop, and the more you give, the more you receive. I am optimistic, I don’t believe it’s going to die. It works all together for sure, all the power is not in the hands of the ondistes, we only have 10% of it. [...] Like, ok, I’m going to see my director and say ‘OK, I would like to have more students. Do you have money for that?’ ‘No.’ ‘Fine, I’m on it’. But I can’t invent my students. So somehow I do my part and if my director does his part he can send me students. That’s the reason why I have 13 students and I’m full. The repertoire can be done if you meet composers, but composers have to imagine for themselves, you know, and then the audience can come see, and say ‘we like it, we’ll come next year’.<sup>338</sup>

Ratsimandresy identifies groups of actors that all have agency over each other, such as repertoire and composers, institutions and teachers, performances and players.

There is no ‘start of the feedback loop’ because all actors are interwoven and form a network. If one actor, or group of actors, break off the relationship, the effect can be felt by other actors, as she demonstrates: if the institution she works for does not pay her, she cannot teach, and if she does not teach, no students in the area will have the skills necessary to audition for Forget’s classes. As the above quote demonstrates, there are many points in the network where active participation in its maintenance is not an option, but a requirement. Creating visibility for the Ondes Martenot course to attract students is one, as many are not aware of the instrument, let alone that there are classes for it. Proactively networking with composers is another, so that composers learn about the instrument’s affordances. Users of more established instruments generally do not need to worry about this to such an extent.

Rousse-Lacordaire agrees that repertoire is key. She feels it is important that young people keep commissioning young composers to write pieces; there is a need for more connections with composers who write music of today, so that the instrument continues to be included in contemporary music history.

### 5.7.3 Presenting the Instrument

Due to the instrument’s limited visibility, Rousse-Lacordaire argues that there is a duty for players to perform well:

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<sup>338</sup> Nadia Ratsimandresy, interview, 13 September 2017.

It is the responsibility of the players, because it could mean that... When you are not numerous... When you play the violin badly, no one says 'oh, the violin is a terrible instrument', they say 'he plays the violin badly'. But when an *ondiste* plays badly, they say 'this instrument is terrible'. There is a big and very important responsibility for players to work hard to have a good sound.<sup>339</sup>

This duty to present the Ondes Martenot in the best light is echoed by Grenier, who also mentions the violin by comparison:

There are people who play the violin, you know, in their own home, and they have a lot of fun, they do their songs, but are they good ambassadors to present the violin to the world? There might be some people who say 'ah ah, ok, I don't want to hear too much of it, because it sounds a bit out of tune', you know? To demonstrate the Ondes to the world, the beautiful part of the Ondes, you have to be capable of playing it well. Because there are some terrible recordings with Ondes Martenot. There are some things... it's actually frightening.<sup>340</sup>

Martel reports that even Jean-Louis Martenot, Maurice's son, was afraid of this very issue, which could in part explain his reticence about letting other makers build new instruments:<sup>341</sup>

That's what Jean-Louis Martenot always feared. Since he was young, that's what he's always seen. He's seen the instrument being played badly, and then the instrument getting this bad rap. Because it sounds like, cheesy, or it's not so different from the Theremin, or. So lack of fine expressivity was giving a bad reputation to the instrument. Maybe with time passing there will be very bad players, but people will know that this is not the instrument, this is the player. That would be my hope.<sup>342</sup>

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<sup>339</sup> 'C'est la responsabilité des instrumentistes, parce que ça veut dire que... quand on n'est pas nombreux... Quand on joue du violon mal, on ne dit pas 'oh, le violon est un instrument épouvantable', on dit 'il joue mal du violon'. Mais quand un *ondiste* joue mal, on dit: cet instrument est épouvantable. Il y a une grosse responsabilité, de travail, de travail très important de la part de l'instrumentiste, pour avoir un bon son.' - Pascale Rousse-Lacordaire, interview, 14 September 2017.

<sup>340</sup> 'Il y a des gens qui jouent du violon, t'sais dans leur maison, puis ils ont beaucoup de plaisir, puis il font leurs chansons, mais est-ce qu'ils vont être de bons ambassadeurs pour présenter le violon au monde entier? Il y a peut-être des gens qui vont dire, 'ahh, ah, [rire], ok, J'aime pas trop s'entendre que des fois ça sonne un peu faux', t'sais?!' [...] Pour présenter les Ondes au monde, la belle partie des Ondes, il faut être capable de bien en jouer. Parce qu'il y a des enregistrements affreux, avec les Ondes Martenot. Il y a des choses... vraiment c'est effarant.' - Geneviève Grenier, interview, 27 May 2014.

<sup>341</sup> Jean-Louis Martenot, although keen to continue his father's legacy, was known within the Ondes Martenot network for being difficult about contracts, money and rights. Due to this, both Oliva's Ondéa and Dierstein's model were not allowed to carry the name Ondes Martenot. Many I have talked to believe that his attitude towards new models played a role in Oliva's eventual bankruptcy, and in the lack of instruments users face today.

<sup>342</sup> Caroline Martel, interview, 27 May 2014.

The pressure to present the instrument well, alongside the danger of a novice's bad performance being someone's first impression of the instrument, tie in with the importance of proper Ondes Martenot lessons. As previously mentioned in 5.4 Institutions and Teachers, Ondes Martenot teachers agree unanimously that continuing to teach Loriod's technique is important, as it was developed so that players could overcome the physical constraints of the instrument. This level of virtuosity is what Maurice Martenot himself wanted for the player. The Ondes Martenot was designed to eventually allow the player to become a direct mediator between the music in their head and the resulting, physical sound. The continuous volume and pitch as well as the incredible sensitivity of the instrument allowed this to be a possibility, but the player would need to master it to make it happen. For Binet-Audet, the environment of a conservatory is just as important as learning the technique:

It needs to be taught in an environment where there are a lot of ideas, composers, it needs... well, that's it... it needs to be played, to be taught, to be loved. It's about the Ondes being loved, so that you'll want to play it.<sup>343</sup>

In keeping with Binet-Audet's idea, Forget proposes to open more 'options' classes at conservatories; classes where you can learn the Ondes Martenot as your second instrument alongside your first. That way students are guaranteed to have a thorough background in music, but don't require prior experience with the Ondes Martenot. Even the Ondomo, she says, would be a great option for those types of classes. She particularly mentions Berlin as a great place to look into, since Germany has shown an interest in the Ondes Martenot lately. In fact, Dierstein reports that he has sold more of his instruments to Germany than to France or Canada.

For Chapman, the ondistes' focus on technique is not as important. He promotes experimentation, as he thinks it is required to support the Ondes Martenot to prosper:

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<sup>343</sup> 'Elles ont besoin d'être enseignées dans des milieux où il y a beaucoup de, d'idées, de compositeurs, de...elles ont besoin...bah, ça c'est...comme d'être jouées, d'être enseignées. D'être aimées, en tous cas il s'agit qu'on aime les ondes puis qu'on veuille en jouer.' - Suzanne Binet-Audet, interview, 27 May 2014.

There's certainly interest in keeping the Ondes Martenot alive, but they're very wary, I would say, the ondistes, of it being perceived as like, a gimmick or a fad instrument, or a new sound, or that people who don't have the level of technical skill that they do will take it up and use it, and make it popular, but be kinda hacks, you know. If I ever get an Ondéa, I'm going to be hacking around, you know, and my students will, too. But any students I've talked about the instrument to, and played them sounds and showed them video footage, they're all quite enamoured, and want to try and use it. My children have tried them and are really enthusiastic about them. And I believe that the future of the instrument does not lie in the reproduction and preservation of the repertoire. Certainly that's a huge part of it, but the future has to embrace these other ways that it might be used and integrated. [...] In Montreal it was taught at the conservatoire for a long time. And it stopped at a certain point, and the local scene wants to bring that type of instruction back. But again with the focus on musicians, music students who are going to be capable of the type of keyboard virtuosity that is integral. You can go really deep [as far as learning to play it], you know, or you can dabble, but is that a bad thing? As long as... you don't want it to become the next flavour of the month. But I don't think that there is such a risk of that, because as an object, a piece of music hardware, it's going to be pretty unique, and it's going to retain its value, I think. If you think about how Jonny Greenwood has used it in Radiohead, I mean, this is obviously a virtuosic musician on many instruments, but — you've seen Caro's film [Martel's documentary] I guess? The thing he kept saying is like, I'm not an expert of this instrument, but I love it, you know. And the ondistes think that what he does is great, so I think it's all relative. His technique is a little bit shoddy, but without him, it is arguable that the Ondes' worldwide reputation would be much less than it is. He's brought it to the attention of a lot of people.<sup>344</sup>

Here, we see a contradiction between Chapman, a researcher, and the players: he has not been taught how to play, and has a certain artistic interest in letting newcomers experiment with instruments that are foreign to them. Chapman, as an academic as well as a musician in the area of popular music, sees the value in broadening the musical context of the instrument, and does not feel that we should expect all Ondes Martenot players to achieve virtuosity. His background in music technology, both as an academic and as a turntablist, could explain why this idea of virtuosity seems old-fashioned to him, and why he believes the angle of experimentation is more important, as is more common in popular music. When it comes to playing technique, the Ondes Martenot is traditionally closer related to acoustic instruments, as Julio D'Escrivan writes:

Before the widespread use of computers, electronic musical instruments could be seen as augmentations or extensions of a person's existing musical techniques as

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<sup>344</sup> Owen Chapman, interview, 26 May 2014.

seen in the performance of an instrument like the Theremin or the Ondes Martenot. With the advent of the computer, anything that exists can be turned into a musical instrument because the burden of ‘instrumentality’ can be given to the microprocessor.<sup>345</sup>

Chapman’s comment, then, could be understood in light of this new paradigm of computer-driven electronic instruments and how it shapes users’ behaviour: if the burden of instrumentality these days lies within the instrument, then ‘those who have been brought up with personal computers and video games could be more open towards effortless performances’.<sup>346</sup> What Chapman says about Jonny Greenwood is pertinent: as much as the players value proper technique, they do appreciate Greenwood’s contributions, and not just because of the visibility it brings them. Binet-Audet argues that, although he is an autodidact, he has done amazing things with his music in his own way. She believes that this is where the future is headed; the Ondes Martenot will start to appear in popular music, in jazz... ‘But,’ she says, ‘there should also be a presence in contemporary music’.

#### 5.7.4 Humility

Martel is apprehensive about amateur enthusiasts approaching the Ondes Martenot as if it is another synthesizer:

I think there will be a bit of an inevitable bastardisation, because people who don’t know the instrument extensively see it as the ancestor of the synthesizer. They take it for granted that you just have the instrument, and you know how to play the piano, you know how to play the keyboard, so that’s [unclear], vintage, yeah. You have lots of money, you can buy one from France, you wait two years and then you can play. Cool.

She stresses that the Ondes Martenot network’s ‘spirit of wanting to contribute, the spirit of exchange and generosity and humbleness’ is crucial to the future of the instrument. She describes how some have tried to take advantage of the network to advance only themselves, and others have created documentation without a

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<sup>345</sup> Julio d’Escriván, ‘To Sing the Body Electric: Instruments and effort in the performance of electronic music’, *Contemporary Music Review* 25.1-2 (2006), 183-191 (p. 189).

<sup>346</sup> *Ibid.*, p. 190.

willingness to humbly try to understand the instrument first. She points to Maurice and Jean-Louis Martenot as examples of people who understood that they didn't know everything: 'that's when you're open to see things differently and keep discovering'.<sup>347</sup> Forget also mentions the importance of humility. She gives the example of Greenwood: 'when he was asked to play Messiaen, he refused, because he said, "I am not able".' It is clear from her and other users' accounts that from time to time, certain beginners feel confident to take up the spaces normally reserved for more advanced players. Forget adds that it is not only a problem outside of the conservatories, but also among conservatory students: 'even here, sometimes they lack humility'.<sup>348</sup> She does, however, stress that it is good and important that more people play. Forget's attitude here could be seen as a reflection of her conservatory background, and can be contrasted with Chapman's wish to let his music technology students explore the instrument without any preconceived notions. Martel explains why she stresses the importance of passing on knowledge:

I just wish that this knowledge about the instrument be carried with the new models of the instrument. It's not about a technical instruction manual. I believe that the more you know about the past, the more you can genuinely innovate.

### 5.7.5 New Instruments

All participants, be it player, teacher, repairer or researcher, mention the need for more instruments. Levels of priority vary slightly according to each participant's background. Ratsimandresy, for instance, is of the opinion that, as long as the repertoire continues to expand, it will create a demand for more instruments: 'you can build anything, but if there is no goal, if there is no music for it, there is no point.'<sup>349</sup>

There is a need not just for any new instruments, but instruments of good quality that are not too expensive, according to Rouse-Lacordaire, so that they can be used in classes. Keeping the need for players with proper technique in mind, Grenier warns against the possible effect of lowering prices, however:

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<sup>347</sup> Caroline Martel, interview, 27 May 2014.

<sup>348</sup> 'Parfois ils manquent de l'humilité' - Nathalie Forget, interview, 12 September 2017.

<sup>349</sup> Nadia Ratsimandresy, interview, 13 September 2017.

They would like to democratise the Ondes, you know, there are instruments being built of which they're trying to lower the cost, so that it's easier for people to buy them, but uh, the danger in that is that people might think it's easy to play.<sup>350</sup>

With this comment, Grenier refers to the learning curve of the instrument, which is similar to that of an acoustic instrument, something newcomers may not understand.

Forget stresses that in her eyes, no model is better than any other, but 'we just have to keep some basic things to be able to play most of the pieces, because it's not easy for us, we have to change instrument'.<sup>351</sup> This comment is reminiscent of the above discussion of the definition and boundaries of the Ondes Martenot. If a new instrument does not allow the player to perform the existing repertoire (e.g. due to a change in timbral options), or does not allow the player to transfer their learned technique (e.g. due to a change in layout), then it is not usable to most of the current Ondes Martenot users. The French Connection, the Ondes Martenot-inspired synth controller, springs to mind, as it lacks many features, such as the vibrato keyboard, and the sensitivity in the button. So does Jean-Louis Martenot's digital model, which had a significant change in the position of the drawer and did not get the timbre quite right. Forget also suggests that instruments should be made available to rent, so that students, or ondistes travelling for a concert, could temporarily use an Ondes Martenot. These comments show that many professional players are rather hesitant for new makers to build their own version of the Ondes Martenot, as the variations in design become stumbling blocks — even if the alternative is an ever-growing scarcity. The impact on the players' careers must be considered. There seems to be some interpretive flexibility around recent initiatives, and whether they help the Ondes Martenot forwards or damage its progression. The same discussion could be held with amateur enthusiasts, who undoubtedly would have a different perspective on the issue.

On the topic of new instruments, a significant change has happened across the Ondes Martenot network in recent years. One particular initiative to build new

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<sup>350</sup> 'On voudrait démocratiser les ondes, on est en train, t'sais, il y a des instruments qui sont en train d'être construits, on essaye de faire baisser les coûts pour que les gens puissent en acheter plus t'sais, mais, euh, c'est ça, le danger dans ça c'est que les gens croient que c'est facile à jouer.' - Geneviève Grenier, interview, 27 May 2014.

<sup>351</sup> Nathalie Forget, interview, 12 September 2017.

Ondes Martenots, which was started in the late 2000s, seems to be answering to many, if not most, of the challenges, needs and desires users have mentioned in this thesis. Its story can be found below.

#### 5.7.6 The Ondéa Project

Mr Oliva's Ondéa manufacture was short-lived for a variety of reasons, despite the instruments being accepted into the network as fully-fledged Ondes Martenots. Several ondistes, such as Ratsimandresy, Forget and Christine Ott still use the Ondéa as their main performance instrument. More recently, in the late 2000s, a team of people decided to revisit the project. The Ondéa has been in production since 2016, and over 20 have been made so far, according to Kean:

We've been actively building them for 2 years now. I'm currently assembling #22. Our plans in the future include at least another 30 instruments of the current design. We have plans to build a 7 octave version this coming year. Also debuting this year will be our metalique, cinetique, D2 and Palme designs.<sup>352</sup>

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<sup>352</sup> David Kean, personal correspondence, 26 November 2018.





*Fig. 23: The new Ondéa model.*

The story of the new Ondéa project is fascinating, not only because it unfolded during my research, but also because it involved the majority of my participants in some way. During our interview in 2014, Chapman gave me a comprehensive overview of how the project started, who was involved, and which factors made it possible. It is, in itself, a remarkable case study in the social construction of technology, revealing the convergence of the social and the technical in an intricate web of human and non-human actors. For this reason, it is included in full below:<sup>353</sup>

I first heard about the Ondéa through Caroline Martel. It was through Caroline and the film that I got interested in the Ondes Martenot at all. I very quickly, in talking to her, learned about the Ondéa project in Paris with Mr Oliva. You've heard about Mr Oliva's connection to Jean, I imagine? I'm not sure what I can tell you that Jean probably will fill you in on in detail, but I know that Mr Oliva had been working on the Ondéa for a very long time, I think since the early

<sup>353</sup> Owen Chapman, interview, 26 May 2014.

nineties. Had gotten to the point where he had built a number of successful prototypes and had prepared like, a PDF pamphlet, and was about to start marketing the instrument, but it stalled for a variety of reasons, I think financial solvency principally, and I believe he declared bankruptcy. Had to put the project on mega-hold. And at the same time I think Caroline's relationship sort of changed, and in the end didn't participate in her documentary, so. That's all I heard about that story. But somebody else who I met through the documentary was David Kean. Caroline was initially doing some research work with him and in 2008 I went out to visit David Kean at the Audities foundation — this is in Calgary — and at that point they had just acquired a model six Ondes Martenot, so the last version that had vacuum tubes. I think it was in pretty bad shape when they got it, and they were trying to restore it. They did successfully restore it, but there were so many particularities to — I'm sure you know, each instrument has a lot of idiosyncratic elements and they were having a lot of trouble making sort of fine adjustments. They also had to replace some of the especially particular components like the *touche d'expression*, or the touch control or whatever you want to call it. And there was also, on that model of Ondes there was a foot pedal that does the same thing as the *touche d'expression*, and in both cases I think what they had was either broken or the magic powder inside was like *kaput*, and they had to replace it and design a replacement component. So when I went to visit Dave, it was to see his instruments and early Theremin and working Moog synthesizers, and a working Novachord and stuff, and in particular to see and play the Ondes Martenot. And when I played the Ondes Martenot — two colleagues came out with me, too, another guy, Dave Madden, who maybe you should meet. And we all agreed while David's Ondes was functional, it wasn't tuned in the way the instruments here in Montreal that we've played work. And David is also interested in just preservation of materials. So I helped get him a little bit more in touch with the Ondes Martenot scene here in Montreal, introducing him to Marie Bernard and Gen'viève [Grenier] and Jean Landry and... He'd already kind of been introduced, but sort of just opening up those lines of communication a little bit more. And in particular David was interested in the circuit diagrams, or any schematics or any paper records of the various models of the Ondes Martenot, because he didn't have much, and he didn't know

where to find it, and some of that detail in there is what he needed to kind of get this instrument working properly. He started learning a bit more about the whole scene and kind of the transatlantic network between France and Montreal and the soft components of Caroline's film as it was emerging. And realised, obviously there was a very active scene in France, but there were documents that maybe were going to be lost, and he would like to preserve and access. But David's French is pretty much non-existent. He wasn't really able to make a lot of momentum on some of those fronts. I mean, he has other priorities, too, he has his own business. This was all 2009-2010. Fast forward to 2013, Caroline's film is launched. Mind, this was 2012, in the fall, and I rekindled communication with David because he wanted to come out here to see the concert that the ondistes did for Pop Montréal - I guess it was last fall, so fall 2013. Patrick Watson played, and some other famous local indie guys played, and he and Gen'viève and Suzanne all played as well. David came out for that concert, met everybody, we had dinner together, we talked about a lot of different things, and I think the subject of the Ondéa came up at a variety of points. It's hard because you know Marie Bernard had purchased an Ondéa with Mr Oliva but had yet to receive it, and was wondering what was going on, and I guess David being the kind of guy he is, a gung ho, can-do sort of person, he'd already been involved with a project to manufacture a new Mellotron. Had people who he thought could help, and factories he was already in business with, to create a new model Ondes Martenot, and in this case I think jumped at the opportunity to adopt Mr Oliva's designs, and to kind of fulfill that dream, that project. This all happened very quickly. So after the concert, David was talking to me and I was kind of helping him translate, and Marie Bernard was also helping to translate, and Jean Landry got involved, his English is also excellent, and started making connections with the people in Paris. So I guess it was in October or maybe early November that David and Jean went to Paris and met up with Mr Oliva. And some other figures in the scene now, the name of one of the guys is escaping me, I think it's Lazare [Levine]. He had been working with Mr Oliva in the end, in order to build the prototypes. There's also Mr Oliva's son, who has a couple of the prototypes. So they had a pow wow together, ultimately. And Mr Oliva is fairly advanced in — I think he's in his nineties, and this has been a lifelong

project and obviously been a source of frustration, inspiration. He poured everything into it, so a very very precious thing. There needed to be some nuance and care taken into how the whole thing was going to come about. So they discussed a lot of detail about what choices would be made, and how they could bring the production process down, because Mr Oliva's designs were wonderful, but they were very expensive, and in practical terms of weight and air travel... And with components that look elegant but were hard to make inexpensively. I mean the thing won't be inexpensive, but it won't be astronomical, either. So you know, the details of those discussions, I wasn't privy to, but the way I understand it is after enough time and back and forth, insurances, Mr Oliva finally decided to agree, and I think they signed forms and a deal was struck. I think the deal helped Mr Oliva bring his finances back in order. And also I believe he's got some commission on the first number of instruments made and sold, so there'd be some income from there as well. But this isn't going to be a money-making ... it's not a capitalist venture, you know, to... So I think like, the first one I believe David's planning to make like, 30 instruments, maybe. And if he can sell and make 30 instruments, he'll break even. Now I know that there was a lot of activity to try to get it out by December, but I haven't heard anything. And in theory I'm going to be part of the team that will help promote and disseminate information. Jean Landry will be involved, Marie Bernard as well. The more people that can demonstrate it and showcase it to people, and help it be understood as the unbelievably sophisticated and unique instrument that it is, I think the better. I'm hoping to acquire one for my university so that I can put up a small lab around it. I think they are going to be somewhere between ten and fifteen thousand Canadian dollars. I pushed David for [the exact] price a few times, but for many reasons he's been like, oh, I really don't know yet. If it's more than 15 thousand dollars, we're going to have issues selling them the way we want. So I've been calling my faculty that this expense may come down the pipe for me. Anyway, I'm hoping it'll be successful. So and then the technical differences in that instrument, maybe Jean filled you in on those? It's an interesting combination of digital and analogue circuitry, from what I understand. And the problem with the touche d'expression is it's such an integral component of everything, but it wears out, and so Jean has a circuit that he has

designed, based on I think one of Mr Oliva's earlier designs, that uses a special type of sensor that will replace the sack of powder. So I believe some variance of that is going to be in the Ondéa. And it's going to have a MIDI out and stuff, so you can plug it into modern digital systems. But I don't believe the sound generating elements... Beyond the control parameters, the touche d'expression, the sound generating circuitry is all analogue I believe. So the sonority of the instrument should be as close as possible to the model 7, the last transistorised model by Mr Martenot. But it will have the capacity to integrate it in much more modern systems. [DS: Do you know anything about the diffuseurs?] I do a little bit, but it's a bit third-hand. I know that he has designed like, an all-in-one kind of diffuseur, Mr Oliva, which had a proper speaker, and maybe some subwoofer for kind of reinforcement. It looks like a serious speaker built into it, but then with spring reverb, and I think the gong was also built into it, but it made it very heavy. It also was part of the whole package, it was kind of an all-in-one purchase, I believe. Which again raised the cost. I think David's plan is for it to be a bit more modular. So the instrument itself can be patched into a soundboard or amplifier. It may be sold with the straight diffuser with the reverb built in, but then the gong and I think even the palme they're planning to reproduce. I think they want to have those options, but again, the modular components, the extra purchases one can make, instead of forcing it all into one heavy system. When I was speaking to David in January I think that was the plan. So that's about what I know about that. They'll keep the name 'Ondéa'.

Chapman's account is thus a brief history of the initial stages of the new Ondéa project, and how it continued where Oliva left off. The background Chapman offers is a complex narrative that includes a social as well as a technical perspective. The story also shows that many of the users' concerns, demands and wishes for the future of the Ondes Martenot are addressed in this new instrument: it is more durable, cheaper, lighter, quicker and easier to build, compatible with modern music technology, and comparable in sound to the earlier model. The Ondéa could be an instrument suited to players performing the existing repertoire, to popular music

artists experimenting in the studio (with MIDI and the like), to students and others who may not want or be able to invest in a Dierstein, and last but not least, to travel. If it was not already clear from this story, the fact that the users' concerns and demands, as shown in this thesis, align so well with the amendments in this instrument's design, shows that there is no lack of communication within the Ondes Martenot network. Also evident is the agency users have in this design. Kean's agency shows in particular in the modernisation and compatibility of the instrument with the modern recording studio, as he will be using it in his own. The approximation of the sound quality to original instruments shows the ondistes' agency. Landry, with his background as repairer, is responsible for the development of the digital button, as initiated by Oliva. Martel's agency is particularly striking here, as she met Kean at a crucial point in time and, with Chapman, advised him to bring other ondistes on board to complete the restoration of the original Martenot, a project without which Kean's involvement in the Ondéa would have been unlikely. There are examples of non-human agency, as well. The erosion of the original button technology could arguably be seen as one of the catalysts for the contact between Kean and Oliva, via Landry — and let us not forget the funding body that awarded Landry's grant to research the button. The Pop Montréal festival, which had several ondistes performing, provided the occasion on which Kean was able to meet the majority of the Montreal contingent of the Ondes Martenot network. The modernisation of the recording studio, and other music technology equipment, can be seen as creating the demand for new features such as MIDI. The analysis of human and non-human agency in this short case study thus demonstrates the co-construction of users and technology. Not only this, but it shows that this co-construction is most apparent when histories of technology are narrated by those involved. Their accounts reveal the complex web of human and non-human actors. They show the messy and far from linear cause-and-effect trail. They describe moments where a design turned into failure, or why and how it became a success.

During my research, another initiative to produce Ondes Martenots was rumoured to provide an answer to the issue of affordable student models: the Ondomo, which was in prototype stage and would cost roughly a fifth of the price of a Dierstein. This model, being a sort of mini-Ondes Martenot, would in the next few years win over the hearts of several professional players, and could arguably be labelled a 'student model'. Where previously professional and institutional circles

had a monopoly on Ondes Martenot instruments, the new models provide an opportunity to broaden the horizon and allow an amateur community to flourish. Perhaps the Ondes Martenot can find its footing outside of the restrictions of classical institutions, as well.

## 5.8 Assessing the Network

The previous sections have presented the data gathered from participants from the perspective of the user. These data have shown that present day Ondes Martenot users are actively involved in the maintenance, or upkeep, of the instrument's visibility and accessibility. They are concerned, not just with its image, but with its availability to those wishing to become a user. Users often have similar motivations for doing so, for example because they are passionate about the instrument's unique historical and musical value, and/or because their livelihood depends on it. They also have mostly overlapping strategies, such as building more durable components, advocating accredited courses, and networking with composers. Users are actively involved, because they have an acute awareness of the need for further stabilisation of the network. Many have expressed their concerns about the future, and have strong ideas on what the network needs to stabilise further. The section below interprets the data presented above, but from the perspective of the network and its journey towards stability.

### 5.8.1 The Ondes Martenot Network in the twenty-first century

As established in the methodology chapter, the Ondes Martenot network is the collection of human and non-human actors who together construct the meaning of 'the' Ondes Martenot as the concept of the instrument. For this thesis, only professional users were consulted. From the interviews with these users, we can gather a few things. Firstly, their ideas of what 'the' Ondes Martenot is, are very similar. The *instrument de base*, as Forget calls it, is constructed from its context of use, for these professional users. It is influenced by past instruments, past users, Loriod's established playing technique, their own playing technique, existing repertoire, their understanding of the instrument as compared to others, and so on. Because of their power over the development of new instruments, their shared meaning has more weight than that of amateur users or non-users, and this directly and indirectly shapes the further development of the instrument, be it in the



construction of new instruments, the restoration of existing instruments, and the disappearance of other instruments that failed to pass the test. In the twenty-first century, the network has undergone a number of changes, as outlined in the introduction. From speaking to users, it seems that a large number of those changes has been thanks to professional users' hard work. Much of this work can be seen as maintenance; it keeps the network from falling apart. This area of history has often been overlooked, as Russell and Vinsel point out:

The history of technology has focused predominantly on the earliest stages of technological life cycles, and for that reason, has missed most human life and activity with and in material reality.<sup>354</sup>

Narratives of maintenance, as they point out, have been a minor voice in this field for a number of reasons, including a fascination of society with the emergence of the 'new' over more mundane continuation, but also gender bias and power relations.<sup>355</sup> To understand the trajectory of a technology beyond the innovation stage, we must turn to the users, including those who actively work to maintain and grow the network.

If the network continually constructs the concept of the Ondes Martenot, then changes in the network affect this concept. We could see this clearly in the instance of Boulez and the modernists: although the physical instruments had not changed, the landscape around them had, and the concept of the Ondes Martenot was communicated as an instrument 'too sentimental' for the new directions music was taking. In the twenty-first century, the meaning of the Ondes Martenot concept is undergoing more changes; as the network morphs, new connections are forged, others stop being used, new actors join, and others disappear. As all actors in the network have agency, we can speak of forces within the network. Some of those forces help the network to grow, others damage the network.

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<sup>354</sup> Andrew L. Russell and Lee Vinsel, 'After Innovation, Turn to Maintenance', *Technology and Culture*, 59.1 (2018), 1-25 (p. 4).

<sup>355</sup> *Ibid.*, p. 6.

### 5.8.2 Stabilising Factors in the Ondes Martenot Network

The data suggest that the users have a predominantly stabilising role in the network. They are active, aware and motivated. Their roles are not fixed, nor are they well defined; they are ‘liminal entities’.<sup>356</sup> Repairers are makers, players are teachers, researchers are marketers, players are composers, and some even have more than two roles. They actively demonstrate the instrument, lobby for classes, network with composers, create a presence for it in varied musical contexts. Some who have resources, like Kean, can boost the network considerably. He has restored an original Ondes Martenot, made it available to the clients in his studio, created a new Ondes Martenot model that tackles a great number of problems, offered insights to an academic publication<sup>357</sup>, and so on. By consulting the existing network of users repeatedly, he has ensured that the sum total of his actions stabilises rather than destabilises the network. Non-human factors include the analogue revival, the internet, more accurate sources on the instrument, advancements in digital technology, the ever-expanding repertoire, such as Adès’ latest opera *The Exterminating Angel* (2017), and lastly, the Ondes Martenot’s identity as a ‘boundary shifter’. It defies classification and categorisation due to its electronic and acoustic features, and recently analogue *as well as* digital ones, use in classical and popular music contexts, historical and modern. The Ondes Martenot is thus an exemplary boundary shifter, as Pinch and Trocco would call it.

### 5.8.3 Destabilising Factors in the Ondes Martenot Network

Many human and non-human actors in the network can be seen to affect the network in a way that does not promote future stability. Forces outside of the professional users’ control, such as academic literature perpetuating a narrative of obsolescence around the instrument, fall under this category. The effect of this could arguably be seen in Chapman’s research project, which was only funded after other, more well-known electronic instruments were written into the project. It is important to note

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<sup>356</sup> Pinch and Trocco.

<sup>357</sup> Holmes, p. 66-67.

that what some would call ‘outside forces’, such as funding bodies, are in fact forces within the network enacted by actors who are by default part of the network; the network, after all, consists of any entities that can have agency on the Ondes Martenot.

Some actions by people, although often well-meaning, can have a questionable influence on the network, not in the least because the network itself is still relatively small. Many participants mentioned the need for humility, from other professional users, but also from newcomers. Those who have only just started to learn the instrument, can feel the urge to participate in the promotion of the instrument by playing very advanced music at concerts. It is clear from the interviews, however, that sometimes this can do more damage than good: people’s first impression of the instrument could be a bad or mediocre performance due to the player’s level. Players are advised to leave high-level repertoire, such as Messiaen, to the more seasoned players. Other destabilising factors included false information disseminated by journalists, conductors’ stubbornness with regards to loudspeaker placement, Jean-Louis Martenot’s protectiveness over the Martenot legacy to the detriment of others and of instrument development, Martel’s editing in her documentary. All of these factors are of varying influence, and as stated above, can be read in different ways. It is clear that users have the best intentions, but the effect they have on the network is, to some, not always positive. Non-human factors mentioned include eroding components, the market-driven system in which conservatories operate, clichéd connotations attached to certain of the instrument’s timbres, repertoire only playable by one specific instrument, and outdated sources on the Ondes Martenot. It is important to observe these forces with equal importance. Due to the relative instability of the network, these factors are felt more strongly than if the network was larger and denser. Two broken instruments could mean the end of a career due to the scarcity of instruments. A conservative government hellbent on defunding the arts could put courses at institutions at risk, depriving another area of Ondes Martenot teachers. The Ondes Martenot users featured in this study are driven by a profound passion for their instrument, and equally by a fear of seeing it disappear. Their tireless active participation in the network, a glimpse of which is shown in this chapter, is partly to combat these forces. The concept of the network as constructed by its actors is demonstrated to be useful in observing these forces as they present themselves. Whereas linear narratives, common in electronic music histories, tend to

focus only on those factors that allowed an instrument to become a success, the network approach allows us to observe actors as they present themselves, whether they help to push the instrument towards stability or damage the stabilisation process.

#### 5.8.4 Further Stabilisation in the Future

How can the Ondes Martenot network stabilise further? How can the instrument's continued existence be guaranteed, or at least helped along? Professional users of the instrument have an idea of what is required to make this happen. More instruments need to be made, ideally mass-manufactured to lower the price and to facilitate repairs. New instruments need to be able to cope with the existing repertoire, but be more stable and easier to travel with. Repairers should train their successors. More accredited Ondes Martenot courses are needed to disseminate the playing technique developed to enable virtuosity. Offering the instrument as an 'option' or second instrument could encourage musically talented and motivated students with no prior background to take it up. More new repertoire should be written so the instrument remains current, and more budget should be available to commission composers. Conservatories, but also arts funding bodies, could help here. Composers should write for the *instrument de base* rather than using features only available on one model, so that others can play it. Information disseminated should be more accurate and rely on users' insights. The Ondes Martenot should be used in an increasingly diverse context, and if at all possible, more famous artists using the instrument could give it considerable visibility. Collaboration and communication between users is key. All of these factors could help in the further solidification of the Ondes Martenot in the public consciousness, but will not prevent it from more damaging factors. The network may grow more connections, but some could have negative consequences. It is a risk Martenot was not willing to take, but it seems that the new generation of Ondes Martenot users is ready.

As established before, the stabilisation of the network does not mean the stabilisation of the technology itself. We can now see where the difference lies: the Dierstein and Ondéa challenge the current *instrument de base* by adding modern

features previously not incorporated in instruments. As the original Martenots age, and eventually become irreparable, these modern features, such as MIDI, will become the new norm. This interpretive flexibility of the instrument shifts the shared meaning of the Ondes Martenot slightly, but at the same time can positively influence the network's durability and thus further secure the instrument's future. The Ondomo is another example: although some users question whether it can be seen as an Ondes Martenot, we can again see interpretive flexibility at play. The Ondes Martenot, previously defined rather unanimously, is now questioned: is the sensitivity of the button enough to make it an Ondes Martenot, or does it require the full range of octaves, as well? The Ondomo does have the potential power to democratise the Ondes Martenot, both for newcomers and students wanting to practise on their own instrument. The stability — again, in SCOT terms — of the technology itself is, on some levels, questionable, but this proliferation of new instruments at different price levels is promising for the continued existence of the Ondes Martenot network.

## Chapter 6: Conclusions

### 6.1 The Ondes Martenot Network

Ondes Martenot representations in academic literature have been brief, at times incorrect, primarily focused on historical and technical descriptions of the instrument, and sparse with regards to the modern context of musical practice. This thesis has demonstrated that this context does indeed exist, and has specific characteristics:

It is *active*: over the past century, and up to today, various users perform, compose, repair, teach and research the Ondes Martenot in various countries and in various musical contexts. It is *embedded*: the instrument exists not in a vacuum, but is embedded in official institutions and mainstream repertoire, and its users are connected to cosmopolitan and international music communities. It is *complex*: mapping the network is nigh impossible, as all actors are intertwined; user roles are messy, as many people have various roles and slip into different roles depending on challenges and opportunities; the instrument itself is a boundary shifter as it exists in multiple dualities; human and non-human entities play an active role in influencing the network (some stabilising, some destabilising). It is *self-aware*: the Ondes Martenot users are acutely aware of the value of their instrument, and the unique challenges they face using it. It is *problem-solving*: users actively work together to overcome said challenges together; whether they like it or not, users are connected. It is *future-driven*: users have strong and informed views on what needs to happen to secure the future existence of the instrument. It is *productive*: it produces important information about the instrument thanks to close relationships with the instrument. It is *constructive*: users define their instrument through their own practice; human and non-human actors together create the shared meaning of the Ondes Martenot; users construct and are constructed by their instrument.

I want to take a moment to revisit the point of humility. A number of interpersonal issues borne out of competition, misunderstanding or self-protection aside, the network as it is today is overall one characterised by passion, respect,

generosity, humility and hard work. As the network grows, due to increased visibility and accessibility, the nature of the network will change. The power dynamics are already changing. Jean-Louis Martenot's passing could mean that the name Ondes Martenot is no longer so heavily guarded by the Martenot family. The success of the Ondes Martenot shows that there is a significant interest in more affordable instruments, and the fact that it is unable to play key pieces in the repertoire does not seem to be as much of a stumbling block as previously imagined. Newcomers to the Ondes Martenot, although certainly passionate, may not always have the same generosity, humility and respect with regards to the network in the way previous users have shown. In particular those who see the Ondes Martenot as another synthesizer may not put in the hard work their predecessors have in learning the proper technique. I do also believe that an influx of so-called amateur enthusiasts to the scene, mostly in popular music, will drive the demand of accredited classes at conservatories, and the increased visibility will strengthen the case for funding. The process may take some time, and it may still be a while before accredited courses become available in other countries such as the UK and the US, but I am optimistic. Since 2000, the network has taken great strides in becoming more stabilised, in part thanks to information shared and connections made via the internet. We, as users in varying roles, can only do our best to transfer our passion for the instrument onto this new generation of newcomers, and hope that they, too, find something worth engaging with on a deeper level. And if the future use of the Ondes Martenot strays a bit further from the traditional technique and becomes more 'diluted', then that, to me, is a sign of its journey towards maturity.

## 6.2 Following the user

It can be stated that the majority of existing academic literature on the Ondes Martenot has been produced without consulting the instrument's users. Qualitative research in which primary accounts from users is central, creates the opportunity to cross-reference information, update and expand the existing knowledge. It brings into question traditional academic approaches to electronic instruments and presents a lively view of a technology in its musical context. It reveals users' involvement in

the development of the instrument. A century of redesigning, optimising and modernising the instrument comes to life as it becomes clear that many of the design changes are driven by users' problems and requests. It also demonstrates the changing nature of user roles.

Importantly, the users' views force us to remind ourselves that instruments are ultimately tools of music-making, or mediators, and making music is the ultimate goal. Where previous accounts of the Ondes Martenot have put the instrument and its workings central, a user-driven methodological approach re-contextualises the instrument, as well as the user, as tools in this process. Additionally, in using this approach, it becomes clear that this research can be seen as another factor that has the potential to strengthen the network of the instrument, helping to secure its future existence by increasing visibility.

I argue that a user-driven approach in music instrument research, as demonstrated in this work, has the potential to enrich instrument historiography by circumventing reductionist discourse. Instead, based on an equal consideration of human and non-human influence, it can create a timeline that is not linear, but messy, as musical instrument history *is*.

### 6.3 Original contributions

Much of the information present in this thesis has not been disseminated in English. In studying the users of the Ondes Martenot, this thesis has provided an insider's perspective on the instrument's past, present and future. The information on the Ondéa in particular is cutting-edge. Where previously the instrument was presented as a technical novelty, a historical precursor, and a static, finished product from 1928, its modern context of use is here demonstrated. Furthermore, the contextualisation of the instrument among current academic frameworks has not been attempted before.

On a methodological level, the thesis can be situated in the interdisciplinary move away from traditional organology, where areas such as ethnomusicology, cultural studies, the social sciences and history have contributed studies into instruments' socio-technical context. In following the user, the thesis has adopted an



STS approach that has only recently branched out into musical instrument studies. STS is a promising field for musical instrument studies. As instruments are complex technologies with complex contexts of use, STS approaches can help to map, trace and reveal how they came to be and how they are embedded in said contexts. SCOT and ANT in particular have been used to study instruments and users, each with their own strengths and weaknesses. I hope to have contributed to the field of musical instrument studies by applying this STS approach to study not just an electronic instrument, but an electronic instrument with significant acoustic characteristics embedded in the classical tradition, and in the pre-mass manufacturing stage. In merging the SCOT concept of stabilisation with the ANT concept of the network, I have provided insights into the effect of the changing network on the construction of the Ondes Martenot over time. SCOT is useful to look backwards from a given point in time and ask: ‘with what we know now, how did we get here?’ ANT is useful to assess a particular moment in time, to ask: ‘how is this meaning, at this point in time, constructed, and who and what is involved?’ Approaches from SCOT and ANT can be useful to make sense of a moment in time as contextualised within a trajectory. This approach, as demonstrated here, can be used to study the present: ‘with what we know from the past, how can we explain the current construction of meaning, and where is it going?’

It is perhaps the merging of the two approaches, rather than the proud distancing from each other, that could provide promising results. This thesis has proposed just one way of doing so, in studying the stabilisation of the instrument network and demonstrating the co-construction of the instrument and its users.

## 6.4 Further research

This thesis has contributed towards the challenging task of documenting the rich, fascinating history and present of the Ondes Martenot. The scope of the project has prevented certain important angles from being addressed. Further research could explore these in more detail. Firstly, a detailed ANT study of the material relationship between the instrument and the player would be a welcome addition to

the field, such as exists for the tabla and the saz.<sup>358</sup> Secondly, as only professional users were the focus of the study, a number of proposed angles are related to bringing in other groups of users. The field of user studies acknowledges the fact that non-users can also play a significant role in the use of a technology. In the Ondes Martenot network, those who want to own an instrument but cannot afford to buy one, those who no longer use it, or those who don't want to use it, can all be classed as non-users. Particularly those who want to join but for some reason are not able to, can be given more of a voice in the history of the Ondes Martenot. Additionally, those who have been able to acquire an Ondes Martenot, but for whatever reason do not use it in a professional capacity, can be the topic of further research. As more visibility is brought to the instrument, from popular music angles, for example, there has been an increase in amateur users. Many do not have access to professional courses, for geographical, financial, or other reasons. How do they take part in the network, and how do they understand the instrument? How does their playing technique evolve, if they have not been taught the Loriod technique? Not represented in this study were the Japanese users. After Paris and Montreal, another notable network of Ondes Martenot users exists in Japan, ever since the Ondes Martenot was introduced there in the 1930s. As this Japanese connection remains underrepresented, an expansion of this study to include Japanese users would be valuable. Then, more research can be done around instruments such as the Ondioline and the French Connection: not generally accepted as Ondes Martenots by professional users, but welcomed by synth enthusiasts with an interest in the instrument. This area of the network is interesting, because depending on the perspective, the French Connection and its users can be seen to be a strengthening force due to spreading awareness about the Ondes Martenot, or a damaging force due to a possible 'dilution' of the legacy. One could also delve deeper into the nature of power relations between actors. For example, it is clear that some actors, although in similar roles, have been more influential in the development of the Ondes Martenot than others. Some have, in other words, been more active, whereas others have been more passive 'end users'. In some instances, users have used their power to deny others access. More research can be done to analyse these power relations, and what they mean for the growing amateur group. Potentially relevant to

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<sup>358</sup> Roda, 'Tabla Tuning on the Workshop Stage'; Bates 'The Social Life of Instruments'.

this point, it has become clear that, after successful attempts to increase visibility around the Ondes Martenot, many of those newly interested are men. This could potentially tip the majority gender of users towards male. Further research could delve into the reasons behind the historically female user base, the reasons for this recent change, and what this could mean for the future identity of the Ondes Martenot. Lastly, the area of conservation and museum studies has not been addressed in this thesis. A small but important number of museums include an Ondes Martenot in their collection. The display thereof can be problematised according to the themes in chapter 3, as it is almost exclusively presented as an obsolete relic of electronic music history, and represented by a broken, unplayable instrument. The Musée de la Musique in Paris is doing great work to keep their collection alive, by regularly inviting players such as Thomas Bloch to demonstrate the instruments to the public through recitals. Outside of museology, fantastic private conservation efforts by the likes of David Kean and the Audities Foundation are worth investigating further.

As this thesis is the first detailed academic study on the Ondes Martenot, it provides a starting point for more research in many directions. I hope that it can indeed inspire others to do so.

## Appendix A: Interview questions

Indicative list of prepared questions for the semi-structured interviews

How did you first learn about the Ondes Martenot?

What does an instrument need to have to be considered an Ondes Martenot?

How do you usually describe the instrument to others?

How would you describe your role? e.g are you a player first or teacher first?

How long did it take you to learn to play?

Do you have a personal playing/teaching technique?

How do you feel about players who have not taken any classes at a conservatory?

How did Maurice Martenot envision the instrument?

Who else has been involved in developing the Ondes Martenot?

Do you know of any recent advancements or initiatives around the instrument?

What is particularly special about the Ondes Martenot to you?

How do you see the future of the Ondes Martenot?

## Appendix B: Glossary of French Terms

A list of recurring French terms with their literal and contextual translation

*Bague, la*: the ring; refers to the ring on the ribbon controller of the Ondes Martenot

*Claquement, le*: the clicking; refers to the clicking sound of the circuit when it is closed by a keyboard key

*Coup de foudre, le*: love at first sight

*Diffuseur, le*: the diffusor; refers to the special Ondes Martenot loudspeakers that diffuse the amplified sound, sometimes with various vibrating materials

*Diffuseur principal, le*: the primary diffusor; refers to the basic diffusor that does not add specific timbres through resonance (D1)

*Instrument de base*: the base instrument, the fundamental instrument

*Impondérables, les*: the intangibles, that what is difficult to assess; referring to the unplanned sounds created by human imperfection

*Jeu au ruban, le*: the ribbon controller; the ribbon playing technique

*Jeu à la bague, le*: the ring controller (see also: the ribbon controller); the ring playing technique

*Métallique, le*: the metallic; refers to the diffusor with a resonating metal plate (D2)

*Ondiste, la/le*: the Ondes Martenot player

*Résonance, le*: the resonance; refers to the diffusor with spring reverb (D4)

*Ruban, le*: the ribbon; refers to the ribbon controller of the Ondes Martenot

*Palme, la*: the palm; refers to the leaf-shaped diffusor with resonating guitar strings

*Touche d'expression*: the button of expressivity; refers to the volume button of the Ondes Martenot

## Appendix C: Glossary of Ondes Martenot and Ondes Martenot-style models

A technical summary of recurring Ondes Martenot and Ondes Martenot-style models

### 1. Ondes Martenot models

- Earliest known model Ondes Martenot: late 1910s, early 1920s

Oscillators create an electromagnetic field around two antennae — one for pitch, one for volume. The player shapes the notes without touching the instrument. Sound generation is vacuum tube-based and uses heterodyning. Strong resemblance to the Theremin, although developed independently.

- First model: late 1920s (presented 1928)

The instrument consists of two wooden boxes; one big (the main instrument), one small (the volume controller). They are elevated on tables. A ring is attached to the end of a metallised ribbon running from the big box. The player stands several feet away from the main instrument, puts their finger through the ring and pulls it towards them to elevate the pitch. The intensity button is contained in the small box by the player's side. It is pressure-sensitive; the volume increases with pressure. Sound generation is vacuum tube-based and uses heterodyning.

- Second model: late 1920s

The instrument consists of two wooden boxes; one big, one small. They are elevated on tables. A ring is attached to the end of a metal wire running from the big box. The player stands several feet away from the main instrument, puts their finger through the ring and pulls it towards them to elevate the pitch. A different ribbon stretches across a picture of a keyboard, and when the player pulls the ring, a coloured element on the second wire moves across the keyboard, indicating the pitch to the player. The intensity button is contained in the small box by the player's side. It is pressure-sensitive; the volume increases with pressure. Transposition buttons are introduced next to the intensity button; when pressed, they transpose the tone that is

being played. Sound generation is vacuum tube-based and uses heterodyning.

- Third model: around 1930

The instrument looks like a wooden keyboard instrument – a rectangular box on its own feet with a picture of a seven-octave keyboard running across it. A drawer is elevated on a table and can be placed in front of or away from the main instrument. A ring is attached to the end of a metallised ribbon; the player stands several feet away from the main instrument, puts their finger through the ring and pulls it towards them to elevate the pitch. A ribbon with ring stretches across a picture of a keyboard; the pitch corresponds with the key below, indicating the pitch to the player. The intensity button is contained in the small drawer by the player's side. It is pressure-sensitive; the volume increases with pressure. Transposition buttons are found next to the intensity button; when pressed, they transpose the tone that is being played. Sound generation is vacuum tube-based and uses heterodyning. Through filtering and rectification of the wave shape, a variety of waveforms can be selected or combined to vary the timbre.

- Fourth model: early 1930s

The instrument is a seven-octave keyboard instrument with organ-style keys and a drawer coming out of the main body to the left of the player. The keyboard can move (or wiggle) laterally, which creates a pitch change of up to one semitone, allowing for vibrato and technically providing the option for semitones. Five-octave and seven-octave models are available. The intensity button is contained in the small drawer by the player's side. It is pressure-sensitive; the volume increases with pressure. Transposition buttons are found next to the intensity button; when pressed, they transpose the tone that is being played. Sound generation is vacuum tube-based and uses heterodyning. Through filtering and rectification of the wave shape, a variety of waveforms can be selected or combined to vary the timbre.

- Fifth model: mid-1930s (presented 1937)

The instrument is a seven-octave keyboard instrument with organ-style keys and a drawer coming out of the main body to the left of the player. A metallised ribbon, interrupted by a ring, runs under the keyboard in front of the player. The feet and the music stand on top have a distinct Art Deco style. The keyboard can move (or

wiggle) laterally, which creates a pitch change of up to one semitone, allowing for vibrato and technically providing the option for semitones. The ribbon, the alternative pitch control mechanism, can be dragged left to right by the ring, creating sweeping glissandi. The position of the ring corresponds to the pitch of the keyboard keys through individual capacitance plates in the body of the instrument. The intensity button is contained in the small drawer by the player's side. It is pressure-sensitive; the volume increases with pressure. Transposition buttons are found next to the intensity button; when pressed, they transpose the tone that is being played. Sound generation is vacuum tube-based and uses heterodyning. Through filtering and rectification of the wave shape, a variety of waveforms can be selected or combined to vary the timbre.

- Sixth model: 1950s

The instrument is a six-octave keyboard instrument with organ-style keys and a drawer coming out of the main body to the left of the player. There is a ribbon, interrupted by a ring, running under the keyboard in front of the player. The feet and the music stand on top have a distinct Art Deco style. The keyboard can move (or wiggle) laterally, which creates a pitch change of up to one semitone, allowing for vibrato and technically providing the option for semitones. A lever is introduced to shift the pitch one octave, effectively expanding the pitch range to seven octaves. The ribbon, the alternative pitch control mechanism, can be dragged left to right by the ring, creating sweeping glissandi. The position of the ring corresponds to the pitch of the keyboard keys through grouped capacitance plates in the body of the instrument. The intensity button is contained in the small drawer by the player's side. It is pressure-sensitive; the volume increases with pressure. Transposition buttons are found next to the intensity button; when pressed, they transpose the tone that is being played. Sound generation is vacuum tube-based and uses heterodyning. Through filtering and rectification of the wave shape, a variety of waveforms can be selected or combined to vary the timbre.

- Seventh model: early 1970s

The instrument is a six-octave keyboard instrument with organ-style keys and a drawer coming out of the main body to the left of the player. There is a ribbon, interrupted by a ring, running under the keyboard in front of the player. The feet and



the music stand on top have a distinct Art Deco style. The keyboard can move (or wiggle) laterally, which creates a pitch change of up to one semitone, allowing for vibrato and technically providing the option for semitones. A lever is introduced to shift the pitch one octave, effectively expanding the pitch range to seven octaves. The wire, the alternative pitch control mechanism, can be dragged left to right by the ring, creating sweeping glissandi through a potentiometer. The position of the ring corresponds to the pitch of the keyboard keys. The intensity button is contained in the small drawer by the player's side. It is pressure-sensitive; the volume increases with pressure. Transposition buttons are found next to the intensity button; when pressed, they transpose the tone that is being played. Sound generation is transistor-based and uses heterodyning. As a result, the tone deviates slightly from the tube instruments. A variety of waveforms can be selected or combined to vary the timbre.

## 2. Later Ondes Martenot-style models

- Jean-Louis Martenot model: late 1980s, early 1990s

The instrument is largely based on Martenot's seventh model. The drawer has changed position slightly. Sound generation is digital via a Hewlett-Packard sound card. As a result, the tone deviates from the original Martenot.

- Ondéa: late 1990s, early 2000s

The instrument is a near replica of Martenot's seventh model (see above). The outer chassis deviates from Martenot's style, with wooden keys and metal front legs. The drawer is wider and contains slight layout variations.

- Ondes Musicales Dierstein: early 2010s

The instrument is a near replica of Martenot's seventh model (see above). In addition to the features found in the original Martenot, the Dierstein has a number of features found in modern electronic instruments: standardised cables, a socket for standard music amps (guitar/piano) alongside the diffusor sockets, CV output (to allow the instrument to be used as a controller), and sourced voltage sensing, as opposed to the manual voltage selection in original Ondes Martenots.

- Ondéa (new version): late 2010s

The instrument is an extrapolation of Martenot's seventh model (see above). In addition to the features found in the original Martenot, the Ondéa has a number of features found in modern electronic instruments: standardised cables and outputs to allow for modular use, a socket for standard music amps (guitar/piano) alongside the diffusor sockets, CV output as well as MIDI output (with polyphony) to allow the instrument to be used as a controller, and sourced voltage sensing. The instrument has a built-in reverb diffusor. There are plans to produce a student model.

- Ondomo: late 2010s

The instrument is a smaller four-octave electronic keyboard instrument that includes Ondes Martenot characteristics such as the sensitive intensity button, the laterally movable keyboard, and the ribbon controller. The drawer includes full timbral options from original Martenot models, alongside the Martenot transposition buttons and diffusor selection. It has a built-in speaker and sourced voltage sensing.

# Appendix D: Ethical Approval Form

Performance, Governance and Operations  
Research & Innovation Service  
Charles Thackrah Building  
101 Clarendon Road  
Leeds LS2 9LJ Tel: 0113 343 4873  
Email: j.m.blaikie@leeds.ac.uk



**UNIVERSITY OF LEEDS**

Dorien Schampaert  
School of Music  
University of Leeds  
Leeds, LS2 9JT

**PVAR Faculty Research Ethics Committee  
University of Leeds**

17 June 2019

Dear Dorien

**Title of study:** The role of the ondes Martenot in 20th and 21st century music  
**Ethics reference:** PVAR 11-099

I am pleased to inform you that the above research application has been reviewed by the Arts and PVAC (PVAR) Faculty Research Ethics Committee and I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

<i>Document</i>	<i>Version</i>	<i>Date</i>
PVAR 11-099 ethics application form f3.doc	2	17/08/12
PVAR 11-099 Low Risk Fieldwork RA form f.doc	1	10/08/12
PVAR 11-099 ethics consent form f.doc	1	10/08/12
PVAR 11-099 ethics information sheet f.doc	1	10/08/12
PVAR 11-099 declaration.pdf	1	10/08/12

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology. All changes must receive ethical approval prior to implementation. The amendment form is available at [www.leeds.ac.uk/ethics](http://www.leeds.ac.uk/ethics).

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

Yours sincerely

Jennifer Blaikie  
Senior Research Ethics Administrator  
Research & Innovation Service  
On behalf of Dr William Rea, Chair, PVAR FREC

CC: Student's supervisor(s)

## Appendix E: Interview with Suzanne Binet-Audet

Binet-Audet's home, Montreal, 27 May 2014

DS: Donc la question traditionnelle, où est-ce que tu as rencontré les ondes...

SB: Jean t'a raconté?

DS: Oui.

SB: C'est ça, alors, j'ai rencontré euh, j'ai entendu la première fois les ondes, sans doute dans un cours de Gilles Tremblay, une note.

DS: Une note?

SB: Une note. Mais je me suis souvenue de ça après parce que c'était une note donc, c'est, je pense *Cantique de durées*, quelque chose du genre. Mais à part ça je suis allé étudier en France, j'ai étudié l'orgue, alors je suis allée étudier en France. J'étais intéressée par Messiaen parce qu'il écrivait beaucoup pour orgue et là il y avait la *Turangalîla* qui était jouée par Jeanne Loriod aux ondes Martenot, puis j'ai été très bouleversée alors, parce que c'était ce moment-là que je venais d'entendre, je m'ai dit 'qu'est-ce que c'est, qu'est-ce que c'est?' Puis là je suis sortie de la salle de concert et je me suis trompée de direction. Pendant ce temps-là Jean Laurendeau qui était un Québécois comme moi, lui il était allé voir son professeur, Jeanne Loriod, il était étudiant en ondes Martenot, il était allé voir son professeur Jeanne Loriod. Et pendant que lui, après avoir vu Jeanne Loriod il revient, et moi je reviens à mon point de départ donc je vais prendre le métro, et on se rencontre sur le quai de la gare de métro. Et on se reconnaît, moi je le reconnais, il faisait partie d'une classe de Gilles Tremblay à Québec, et puis euh, ben là c'est ça, je lui disais jusqu'à quel point j'étais...je lui demande s'il connaissait cet instrument-là, lui, je lui dit jusqu'à quel point j'étais hah, vraiment euh, complètement sidérée d'entendre ce son-là [DS: oui]. Et puis là Jean me dit, mais justement j'étudie avec Jeanne Loriod, euh, je peux vous inviter si vous voulez j'ai un instrument, vous pourriez l'essayer puis tout ça. Alors je vais chez Jean Laurendeau, puis j'essaie l'instrument, il me fait écouter des disques, à ce moment-là c'était des vinyls, j'apporte ça chez moi, j'écoute, et j'étais séduite, complètement. Il dit, 'j'ai parlé de vous à Jeanne Loriod'. Alors moi j'étais partie vraiment avec \$500 pour deux ans. Et j'allais étudier l'orgue en espérant avoir des cours un peu comme ça. Alors j'avais commencé avec Jean Langlais, puis euh, il

m'acceptait pour presque rien. Alors Jean parle à Jeanne Loriod et Jeanne Loriod enseignait à l'école normale de musique de Paris, alors, je m'en vais dans une de ses classes, elle me dit 'oui, oui, je vous prends'. Alors je me suis inscrite, ça coûtait rien. Alors j'ai pu apprendre les ondes Martenot [rire], vraiment avec Jeanne Loriod pendant 2 ans, et la deuxième année j'ai appris avec Maurice Martenot qui donnait des cours aussi au Conservatoire et vive l'instruction gratuite, tout ça c'était gratuit. Alors comme ça allait bien j'ai pu avoir une bourse du gouvernement, j'ai acheté un instrument, du gouvernement du Québec, là j'ai pu m'acheter un instrument à lampes au tout début, mais le, la première fois que j'étais saisie c'était vraiment avec la *Turangalila*. Vraiment, euh, c'est ce son-là, le son, euh, ah je voulais jouer de cet instrument-là.

DS: Oui, il y en a plusieurs qui le disent.

SB: Ah oui hein?

DS: Oui.

SB: C'est drôle parce que j'avais vraiment une formation d'organiste, alors l'orgue c'est un son, c'est peut-être un des sons que tu... qui bougent le moins une fois que tu l'as donné, c'est le tuyau qui fait le son, euh, le piano t'as plusieurs sortes de touches, mais à l'orgue il y a des touches mais c'est pas aussi varié qu'au piano, tu peux pas jouer dans les nuances, tu joues juste dans la manière de faire ton phrasé, tandis que là t'avais, euh, c'est un instrument polyphonique, et ce qui m'attirais c'est vraiment, le petit son, ce son-là, tout vivant là comme un être qui naît d'un œuf sonore. Tu vois, ça, vraiment, euh, fascinant. Il y a une richesse polyphonique, j'avais l'instrument parfait pour la polyphonie, puis ce son-là c'était juste comme une voix, c'était juste un son mais avec toute sa richesse tellement différente là, c'était, ça allait contre, c'était parfaitement ce que je voulais faire en musique. Mais je savais pas moi à ce moment-là que c'était un désir si profond d'aller modeler le son comme ça, de le toucher, tout en fur et à mesure qu'on le joue, on le touche, c'était... c'est une révélation, oh ouais.

DS: Tu peux le comparer avec des instruments qui étaient déjà disponibles à ce moment?

SB: Non, moi, un instrument que j'aimais beaucoup, évidemment, c'était le violoncelle [rire] c'est un drôle de hasard. Non mais je veux dire si j'avais deux vies de musicienne je serais violoncelliste, euh, j'aimais le violoncelle, mais ça m'a pas du tout rappelé le violoncelle, parce que Messiaen dans cet œuvre là il utilise pas du

tout un son qui fait penser au violoncelle, c'est vraiment, un...typiquement ondes Martenot, puis, euh, non c'était...non il y avait pas de rapport à un instrument au moment où je l'ai aimé, où j'ai été saisie, au contraire c'est l'aspect unique de ce son-là, quelque chose de tout à fait différent. C'est un rêve, comme un rêve d'instrument là. Ouais. C'est comme si, euh, c'est la plasticité là, je sais pas comment dire, le côté collé et on l'étire, oui c'est ça. Ce qu'il était quand je l'ai aimé c'est ce qu'il s'est révélé être après tout le temps. Donc, euh, ouais.

DS: Ouais.

DS: Et euh, tu parles beaucoup du son [SB: Oui] comment est-ce que tu définis, oui?

SB: Ah, comment est-ce que je définirais l'instrument? C'est un instrument électronique donc, le son, à ce moment-là était complètement nouveau, mais c'est un son acoustique...je sais pas comment expliquer...il y avait le côté, évidemment expressif de l'instrument, mais il y a quelque chose dans ce son-là qui est aussi du domaine du faire le son. C'est pas juste faire la mélodie mais c'est de faire le son aussi qui m'a beaucoup attiré. T'sais de, même dans les petits harmoniques du métallique, la façon dont on touche la touche, euh, je me souviens Jeanne Lloriod, je lui ai dit à un moment donné, est-ce que t'as changé les timbres? Non, juste la façon dont on, c'est des mini-nuances de dynamiques qui vont faire que les choses vont répondre autrement et les harmoniques vont se dégager. Tout cet aspect-là que je dirais acoustique du son électronique.

DS: Ouais, ouais.

SB: Qui est comme, qui est variable, tu sais il y a des variables dans ce son-là, c'est impondérable comme si Martenot c'était même pas entre les sons mais dans le son lui-même quand on le fait durer qu'il se passe des choses selon le vibrato qu'on fait ou...c'est très très riche, moi, cet aspect-là m'a beaucoup attiré.

DS: Donc le modeler du son?

SB: Oui le modelage du son, et l'expressivité, ce que ça peut dégager, mais vraiment par le geste, par l'expression mais pas forcément l'expression d'un sentiment, ou l'expression... c'est plus d'une intention musicale. En ce sens-là que c'est pas juste l'aspect mélodique mais c'est l'aspect lyrique du son, l'aspect...je sais pas comment dire. C'est pas rattaché forcément à une mélodie, mais c'est rattaché...tu vois dans le film, il y a très peu de sons, on en a fait beaucoup de sons, mais celle que, les sons que Caroline a choisis c'est vraiment où je bouge presque pas mais où il se passe des choses. Ça bouge presque pas mais on sent que cette vie-là... [DS: ah oui, oui]. Il y

a quelque chose qu'on peut faire aux ondes, puis parce que le son dure très longtemps donc euh. À l'orgue il y avait cette durée du son, bon allons, pourquoi je cherche tout le temps des sons qui durent? Mais la durée à l'orgue tu peux la durer...tant qu'il y a de panne d'électricité ça marche. [rire] Les ondes aussi, tu peux tenir, tenir, tenir, le son et puis toujours le transformer tout le temps, tout le temps. C'est un aspect qui me fascinait beaucoup, beaucoup.

[10:00]

DS: Est-ce que tu penses que l'instrument a besoin de certaines personnalités ou...?

SB: Pour en jouer tu veux dire?

DS: Oui?

SB: Non.

DS: C'est surtout le contrôle du corps?

SB: Oui mais ça, tous les gens...dans le fond, une certaine personnalité, non. Je pense pas, je pense que chaque personnalité va exprimer quelque chose de différent parce que c'est...c'est, euh, quelqu'un qui serait très...quelque chose de très véhément, de très, euh, vigoureux, il peut jouer des Ondes Martenot d'une façon extraordinaire aussi, hein! Puis quelqu'un qui est très très dans la finesse ou, va trouver une façon aussi d'en jouer, non je dirais pas.

DS: Parce que c'est un instrument très expressif, très, euh, sensitif [SB: oui], mais on ne doit pas être très émotionnel ou très sensitif, euh, pour aimer jouer l'instrument?

SB: Ah je crois pas moi, non, je pense que chacun y trouve ce qu'il est, c'est comme euh, non justement c'est une des richesses de l'instrument. C'est très intéressant quand on fait maintenant des démonstrations qu'on fait essayer l'instrument, c'est tout de gens qui ont pas joué des Ondes Martenot et il y en a pas un qui joue de la même façon. Tu fais essayer le piano c'est beaucoup plus, euh, c'est comme presque toujours la même chose on essaie...mais là y a pas, on voit tout de suite la personnalité des personnes. [DS: Ah, oui] des gens qui jouent qui s'essaient. Il y a quelque chose qui répond tout de suite tout de suite, c'est très très lié vraiment à la personne qui en joue. Donc il y a pas un type de personne pour jouer, euh...dans chaque personne il y a vraiment toutes sortes d'éléments de finesse, de rugosité, de toutes sortes de choses qui peuvent passer par cet instrument-là puis c'est...

[12:09]

DS: Mais c'est les ondes qui, euh, qui le montrent un peu, qui montrent la

personnalité un peu plus, peut-être?

SB: Elle l'a traduit...il y a quelque chose que, ah ouais c'est drôle, on est tout de suite interprète aux ondes Martenot, on est interprète de soi-même, tout de suite, tout de suite, dès qu'on touche, il a quelque chose qui fait que il y a personne qui le fait de la même façon. Mais, avec évidence, c'est toujours ça, mais tu joues de la flûte, c'est sûr que il y a autant de jeux de flûte que de personnes qui en jouent, mais c'est pas fait avec autant d'évidence qu'aux ondes Martenot, en tous cas je trouve. Chacun a sa façon d'en jouer.

DS: Oui, euh, quoi était les personnalités, je peux dire, de Jeanne Loriod et Maurice Martenot?

SB: Oui.

DS: C'était très différent?

SB: Très différent. La méthode mais là, tu veux parler de la méthode d'enseignement, ou tu veux parler des personnalités, de leur façon d'aborder le répertoire ou quoi?

DS: Les deux, mais peut-être la méthode d'enseignement.

SB: La méthode d'enseignement. C'était, moi je dirai que c'était très semblable, on voyait que c'était le même, euh, vraiment la même gestuelle, les mêmes exercices. C'était vraiment la qualité de geste, justement parce que ça traduit tout de suite quelque chose donc, pour avoir quelque chose de très...de très fin de très rigoureux, qui passe tout de suite ce que tu veux là, il y avait vraiment la même technique, ouais. Pour le jeu du ruban, le clavier aussi. Il y avait les mêmes exercices pour le vibrato, ouais, ouais.

DS: Donc le cœur de Martenot était plutôt dans l'enseignement?

SB: L'enseignement oui. Mais Jeanne Loriod aussi c'était l'enseignement, ah oui, c'était l'enseignement mais on faisait plus de répertoire aussi. Et puis c'était plus dans le concret de la carrière, d'une carrière. Ouais. Maurice Martenot, c'est quelque chose de plus comme, quelque chose de personnel, c'est face à soi-même, face à l'instrument, c'est plus...mais c'était fait d'une façon aussi, c'était pas évident évident, je regarde après, là, tu me poses la question, puis...ça c'est ce qui me viendrait là.

DS: Donc euh, tu as dit deux ans?

SB: Ouais.

DS: Quels étaient les ans?



SB: C'est en '63, puis '64... '64/65. Oui. Et moi j'avais fait beaucoup d'orgue, donc j'avais une formation, pour le jeu des boutons, puis tout ça t'sais avec les registres à l'orgue fallait être vite là. Euh, c'est ça, j'ai fait du ruban, j'en ai moins fait que ce que... mettons quand on fait un cours maintenant on fait un peu plus de ruban que ce que j'en ai fait. Mais j'ai continué à me perfectionner après, le...

DS: Oui, c'était toi-même ou...?

SB: Après je suis retourné, en '76 jusqu'à '78 je suis retournée vivre en France. Puis là j'ai fait partie du Sextuor Loriod puis j'ai revu Jeanne Loriod, bon Maurice Martenot était décédé, non il était pas décédé à ce moment-là mais... mais euh à ce moment-là Jeanne Loriod je l'ai revue, j'allais la revoir pour prendre un ou deux cours, mais on faisait de choses ensemble donc à ce moment-là... ouais c'était bien, ouais.

DS: Donc, euh, deux ans et puis beaucoup de travail toi-même [SB: oui] et tu es devenue une ondiste?

SB: Oui.

DS: Ok.

SB: Oui, oui, ben j'avais eu un prix, là, une première médaille.

DS: Après les deux ans?

SB: Oui.

DS: Ah ouais.

SB: Oui. Non, c'est, c'est, j'aimais tellement ça là, j'étais tellement... ah oui, j'avais vite appris les... [rire]

DS: Je pense que tout le monde a le coup de foudre.

SB: Ah oui, oui. C'est vrai. Remarque il y en a qui ont pas eu... euh, Jean, Jean, il avait entendu je pense, Jean, je vais lui demander. Toi tu sais maintenant mais moi je sais pas. Je sais pas pourquoi il est allé aux ondes.

DS: Euh, est-ce qu'il y avait... est-ce que tu as vu un vrai développement dans les, le répertoire... parce que, il y avait déjà un répertoire dans les années '60 [SB: Oui]

SB: Moi je dirais qu'il y avait Tristan Murail, à l'époque, il était très jeune, il a composé je crois en '72... c'était en '72? *Mach 2,5*. Ça c'était vraiment une nouvelle écriture pour les ondes. Ouais, ça c'était, il était ondiste lui-même, puis, ici il y a eu... à partir des années '70 vraiment on a écrit d'une autre façon pour les ondes. Il y avait tout le côté musique expérimentale qui était traduit aussi dans... via les Ondes Martenot, comme on avait Scelsi avec le violoncelle, tu avais l'équivalent des

recherches sonores comme il y en a eu dans les compositions de cette époque-là.

DS: Ouais

[20:09]

SB: la musique contemporaine, ce qu'on appelle la musique contemporaine, puis y avait la musique pop, évidemment il y avait beaucoup d'effets. Moi j'ai joué pendant un an à Radio Canada, 1 an ou 2 ans, je sais plus. En tous cas, c'était tous les dimanches il y avait une émission de variété, mais c'était vraiment avant le Moog. Puis là c'était les Ondes Martenot qui faisaient des glisses puis [chante] les choses que aucun autre instrument peut faire, du grave à l'aigu, puis toutes sortes de choses comme ça. Donc c'était beaucoup utilisé ça dans la musique pop.

DS: C'était quelle année?

SB: Dans les années...en '67, '68, '69. En tous cas entre '65 et '70 là.

DS: Oui, c'est intéressant oui.

SB: C'était l'instrument le plus nouveau, puis qui était complètement acrobatique là.

DS: Oui, oui. Est-ce qu'il y avait beaucoup de gens qui en savait?

SB: Oh non, non. Ici au Québec, il y avait Jean Laurendeau et moi, il y avait Gilles Tremblay. Quand même, mais qui était pas, euh, qui en jouait pas. J'ai pas entendu Gilles Tremblay...quand nous on est revenu, après ça Gilles Tremblay, peut-être qu'il en jouait avant mais là, mais je l'ai pas entendu jouer. Il y avait Georges Savaria qui jouait, ouais, mais non, il y avait Jean et moi au tout début. Après Jean il a eu sa classe là, et ils ont eu d'autres personnes.

DS: Donc euh, vous deux, vous avez appris au Québec?

SB: Nous deux on a appris en France.

DS: Non, non, euh, emmené à Québec, et...?

SB: Ah oui!. On est revenu au Québec avec nos instruments, nos instruments à lampes. Puis, je pense que c'était en 70? Je sais pas si c'était en 70, on avait fait les Nocturnales, on avait joué une composition de Micheline Coulombe [Saint Marcoux], une compositrice d'ici qui était tout jeune, elle venait de revenir de Paris. Elle avait écrit pour voix? Est-ce qu'il y avait une voix? Percussions et ondes Martenot. Puis on avait fait ça aux Nocturnales de l'Université de Montréal. Ça c'est le premier concert de 2 ondes ici à Montréal, en Amérique, où il y avait deux ondes Martenot, c'était Jean et moi [rire].

DS: Oui c'est vraiment, faire l'histoire.

SB: Oui.

DS: Donc après je pense que la communauté a grandi.

SB: Ah ouais, c'était chouette ça, on a eu beaucoup d'ondistes. On a pu jouer, 5 ondes, on aurait pu en avoir plus, parce qu'il y avait Louise Larose aussi qui avait étudié avec Martenot qui est revenue. On a pas fait beaucoup de concerts avec elle. Mais il y avait Louise Normandin, qui avait été formée auprès de Nelly Caron. Ou, non, de Sylvette Allart, de Sylvette Allart. Puis il y avait Jean puis il y avait toutes ces classes-là, il y avait, Lucie Filteau, euh, Johanne Goyette, qui a la maison de disques Alma maintenant. Alma classique, elle est devenue ingénieur du son, elle a une maison d'enregistrement de disques qui est très très bonne. Puis elle a fait longtemps des Ondes Martenot. On avait vraiment l'ensemble d'ondes, c'était 4 puis après ça.

DS: Quand est-ce que ça a été formé?

SB: C'était en '73? Tu me demandes des choses, je pense qu'il faudrait que j'ailles fouiller dans mes petits papiers. Je pense en '73. Peut-être Jean pourrait te le dire avec plus de précision. Mais c'est ça c'était...le premier concert je coirs que c'était en '78, ou en '74, je sais pas trop. C'était à la maison de Radio Canada? Je me souviens du lieu mais je me souviens pas du nom de la maison. Je, vraiment, pour tout ce qui est de...dire des choses précises là, oublie-moi! [rire] Les dates et tout ça, fiou...non, non, non, non, vraiment pas, mais je me souviens très bien de cette fois là. Alors on était, on était 5, même on avait...il y avait 4 ondistes, il y en avait une qui s'était rajoutée. Pour peut-être la *Fête des belles eaux*, un extrait de la *Fête des belles eaux*.

DS: Mm, mm.

SB: Ouais, ouais. Alors ça, ça avait été un évènement, parce que c'était la première fois que les gens entendaient plusieurs ondes comme ça, puis dans un répertoire écrit pour ondes Martenot. Puis il y a eu vraiment des très belles œuvres écrites ici, puis qu'aucun instrument, autre que les ondes Martenot, peuvent jouer.

DS: Oui?

[25:00]

SB: Oh oui. Dommage [? indistinct], quelqu'un qui est mort très très jeune, il avait même pas 40 ans, Richard-Goudreau Boucher, il avait un langage pour les ondes, je te montrerai des partitions d'ailleurs, tu pourras les photocopier. Je sais pas si tu as eu la chance d'en photographier mais il y a des partitions, euh, vraiment...il a inventé un nouveau langage puis il saisissait vraiment ce que c'était et qu'est-ce que

ça pouvait apporter de nouveau dans le...ça reste, ça fait quand même 30 ans que ça a été écrit là, ça reste très contemporain.

DS: Euh, donc, tu as dit seulement pour les ondes. Qu'est-ce que ça veut dire?

SB: Ah qu'on peut jouer juste aux ondes? [DS: oui] parce qu'il y a aucun instrument qui peut, aller de l'extrême aigu mettons, à l'extrême grave, en faisant un geste rapide mettons, ou en faisant très très très lent, [indistinct 26:03] donc il y a des choses que...c'est juste aux ondes que tu peux faire ça, surtout les choses au ruban là. Même les battements comme on fait, c'est sûr le piano peut en faire mais, euh, ça fait pas la même chose, comme euh, à cause des timbres on peut faire...vraiment ça appartient juste aux ondes.

DS: Oui.

SB: Oh ouais.

DS: C'est très intéressant. Oui.

SB: Oui, oui. Oui puis la dimension spatiale du son aussi. Quand on utilise maintenant le D1, le diffuseur principal, qui est très comme à l'avant-plan à plat, puis dès qu'on rajoute le diffuseur 2 qui est un résonateur, on crée un espace.

DS: Ah oui?

SB: Donc on peut jouer avec la manette des timbres sur le dosage de cette pâte sonore là, puis avec le métallique on a autre chose, c'est moins l'espace que la couleur, au plan harmonique là, donc, euh...il y a quelque chose qui appartient juste aux ondes.

DS: Je n'ai pas, je n'ai pas entendu, beaucoup de personnes parler du palme.

SB: Oh oui, c'est parce que la palme, ben nous elle est tout le temps brisée, donc il y a personne pour la réparer. C'est très fragile, puis c'est sûr que c'est le timbre espace, le premier timbre espace dont parle, d'ailleurs Messiaen dans ses partitions c'est le timbre de la palme. Mais la palme c'est quand même un tout petit objet, il doit faire quoi 4 pieds de haut là. Puis on peut pas jouer très fort, donc dans la masse orchestrale ça manque de puissance, donc quand le timbre est arrivé, le D2 avec les résonateurs à ressorts, là c'est sûr que ça donnait beaucoup plus d'amplitude au timbre espace, puis, Messiaen il voulait avoir ça, c'était vraiment son...il était très content de ce timbre-là tu sais. Donc ça a remplacé la palme, mais c'est tellement beau la palme, mais ça a un son beaucoup plus confidentiel, c'est beau pour quand on...

DS: Intime?

SB: Oui, oui, pour la musique de chambre, mais avec orchestre...

DS: C'est perdu?

SB: Oui. Puis faut vraiment savoir bien la réparer puis moi, c'est ça ma palme je l'ai utilisée au tout début, quand j'avais mon instrument à lampe, mais après ça en '70 là, en '78 quand je suis revenue j'avais le transistor puis là j'ai plus utilisé ma palme.  
[28:59]

DS: Oui, je vois. Est-ce que vous, toutes les ondistes avaient beaucoup de problèmes avec jouer dès le début?

SB: Ah mais les premiers?

DS: Oui.

SB: Les premiers ensembles.

DS: Oui, donc est-ce qu'il y a une évolution des problèmes...

SB: Ah ben ouais, ah oui oui oui. Non, non, il a tellement moins de problèmes. Au tout début on faisait comme si on était des joueurs de luth, tu sais les luths, il faut qu'ils s'accordent tout le temps, euh, ce sont...sur 4 heures de pratique on s'accordait pendant 3 heures. C'est vraiment...on prenait, on était tout le temps en train de s'accorder. C'était faux, les lampes chauffaient, les...tout se désaccordait, puis pas tout le monde ensemble, il y en a qui montaient, il y en a qui descendaient, l'accord, descendait, montait, c'était vraiment, euh...ah oui ça a beaucoup changé ça, c'est beaucoup mieux maintenant. Puis en plus, on peut avoir même, Jean Landry a patenté une espèce d'accordeur, on peut vérifier si l'accord bouge. Parce que même si c'est transistorisé des fois ça bouge. Bizarre il y a pas de lampes, mais tout d'un coup on se retrouve...l'instrument a bougé. On sait pas pourquoi. Puis là on peut refaire l'accord général sans faire de son. Donc pendant [?] on peut refaire l'accord général, puis c'est vraiment génial ça, ou on peut vérifier maintenant...on a commencé, un trait, on peut vérifier si notre accord est juste. Donc tu sais quand on part avec cette assurance là c'est vraiment beaucoup plus facile, moins stressant. Puis c'est ça, Jean Landry il a quand même, euh, ben tu sais qu'il est en train de stabiliser encore plus ses instruments, il cherche des composants donc...j'ai l'impression que ça va être de mieux en mieux pour travailler ensemble en tous cas.

DS: Est-ce qu'il y a eu beaucoup de gens qui veulent ou ont joué les ondes et puis ont dit c'est trop de problèmes [SB: Oui], c'est pas agréable? Oui?

SB: Oui. Il y a, il y a une très très bonne ondiste qui a arrêté parce qu'il y avait trop de problèmes, puis elle est partie, elle a fait tout à fait autre chose. Johanne aussi, il

aurait fallu qu'elle achète un nouvel instrument, puis les choses allaient pas...on avait pas assez de travail pour vivre de ça donc à un moment donné tu dis bon, qu'est-ce qu'on fait, euh, acheter un instrument qui coûte si cher, elle s'est dit non, puis là t'arrêtes parce que t'as pas ce qui faut là...moi j'en connais deux [DS: Deux?] il y a peut-être trois aussi, Geneviève Lalonger je me demande, c'est pas de l'affaire de...ou si, mais c'est, l'ouverture...on est un tout petit milieu au Québec, hein, c'est beaucoup d'ondistes là pour faire son chemin, il y avait Jean qui enseignait mais il y aurait pas eu de place pour 2, ben il y a eu à un moment donné 2 classes, mais dès qu'il y a eu des coupures c'est évidemment les ondes Martenot, c'est facilement repérable dans la liste des instruments à couper qui sont pas vraiment, euh, de l'orchestre habituel, donc c'est ça. On avait enlevé la classe de Québec, puis à ce moment là, tu sais c'est tellement cher un instrument, mais peut-être que ça va changer là, mais c'était tellement cher à l'époque que tu pouvais pas faire autrement que de l'étudier dans une institution qui avait un instrument mis à la disposition des élèves, donc c'était le conservatoire. Puis, euh, il y avait pas assez de travail aussi pour qu'il y ait des ondes à l'Université de Montréal, à l'Université McGill, au conservatoire tu sais c'est pas, c'est pas du violon là, tu sais c'est...malheureusement.

DS: Oui [rire] est-ce que tu peux imaginer d'avoir tellement de problèmes avec un clarinette et continuer de le jouer?

SB: Euh...

DS: Je pense que ma question c'est est-ce que ça vaut la peine?

SB: Oui, euh, je sais pas pourquoi mais jamais je ne l'aurai lâché, c'est comme quelqu'un qui aurait, je sais pas, qui est un peu malade mais que t'aime tu sais, tu vas te soigner, tu vas, t'auras un espoir fou que oui on va trouver des solutions *tadada*, que ça mérite de continuer. Non, non, non, puis ça arrive, ce qu'on souhaitait arrive finalement. C'est vraiment ce qui se produit là, c'est vrai c'est fou un peu. Mais même pour enseigner les ondes il faut qu'il y ait un technicien à côté de toi comme prof parce que, tu pourras plus enseigner, dès qu'il y a un problème, on est pas des techniciens, nous. Il y a une qui est très bonne c'est Geneviève Grenier. Geneviève, elle est incroyable, [DS: Ah?], ah oui. Ah, oui, oui, Geneviève elle est capable de réparer des grosses pannes tu sais, pas toutes les pannes, mais des grosses, elle est très très bonne. Quand on avait fait un concert toutes les deux, à Victoria sur l'île de Vancouver, puis mon instrument est arrivé tout brisé, vraiment

là, il l'avaient jeté sur le côté, en tous cas il était tout brisé. Au lieu de répéter pendant 3 jours, Geneviève a réparé l'instrument pendant 3 jours puis il a marché. [rire] Mais tu sais, on avait même pas répété là, c'est fou! Mais le soir il était là prêt pour le concert. Et ça a bien marché.

DS: Est-ce que c'est tu qui a dit, il n'y a jamais eu une fois qu'on n'ait pas pu jouer?

SB: Non, il n'y a jamais eu une fois où on a pas pu jouer. Il y a une fois c'est arrivé dans l'ensemble quand on était à Ottawa, on devait jouer dehors, et là il s'est mis à pleuvoir il a fallu qu'on sauve nos instruments, mais autrement non. On a tout le temps pu jouer. Hé ça tient du miracle quasiment, parce que vraiment on a beaucoup de pannes, il y a beaucoup beaucoup de pannes. Ben ouais, puis on a pas d'instruments de rechange là, on a plus de...ah non c'est vraiment paniquant, je voyais quand, mettons, je jouais à Paris avec Loriod, on allait faire voir nos instruments 2 jours avant de jouer ou même la veille. Puis il y avait toute une manière, euh, ils réparaient, ils voyaient tout ça, ici, on faisait pas ça là, on pouvait pas. On était loin des techniciens, dès qu'on...

DS: Avant le projet de Jean Landry pour faire ce *update*, est-ce qu'il y a eu d'autres changements assez grands, ou...?

SB: Non il y avait Gaston Lemieux qui était là avant Jean Landry au Conservatoire, il était le technicien pour les Ondes Martenot, lui, il avait pris un cours avec Manière puis il avait appris [DS: Ah oui?] oui, à réparer les ondes à lampes, puis il était capable de réparer aussi les ondes transistorisées, puis après il a été nommé au Conservatoire d'art dramatique, il avait fait un changement, et Jean Landry qui le connaissait bien, ils travaillaient ensemble, sur les enregistrements, tout ce qui a trait au son. Puis c'est Jean Landry qui est devenu le spécialiste des transistors, il était plus calé en électronique que Gaston Lemieux.

DS: Donc il a surtout réparé et pas changé?

SB: Non. Il changeait pas, il réparait.

DS: Ok. Parce que je sais qu'il a dit, euh, 'c'est, euh, moi c'est mon travail de rendre les instruments jouables et puis pas les restaurer [SB: Voilà, c'est ça] comme avant', mais il n'a changé...

SB: Il n'a rien changé.

DS: Il n'a rien changé.

SB: Non, non, non, non, il n'a jamais rien changé aux instruments, mais là non on voyait que, ben il y avait les touches qui marchait plus, puis c'était tout le temps ça

claquait, on avait des fuites, puis Jean Landry il faisait tout ce qu'il pouvait pour nous arranger ça mais parfois c'était impossible. Quand la touche elle était pas bonne, il pouvait pas la changer, lui la poudre il l'avait pas, il fallait faire venir ça de Paris. Donc c'est là qu'on a pensé il faudrait trouver autre chose. Quelque chose qu'on pourrait nous quand on est ici, en Amérique, réparer, euh c'est de là qu'est venu le projet de modifier certains composants pour ce soit plus stable.

DS: Oui. C'est les ondistes qui l'ont demandé ou c'est plutôt les techniciens qui ont dit?

[39:18]

SB: Oh non ça c'est une histoire, c'est fou là. On avait eu une bourse, une première bourse quand c'était Gaston Lemieux qui était là pour faire un prototype pour être un peu indépendant de la France, pour savoir comment faire une onde, on voulait faire un petit modèle...

DS: Qui est 'on'?

SB: C'est nous, les ondistes, moi et Jean, il avait, à ce moment là Estelle était déjà là je pense. On avait fait une demande, puis après ça on a fait une autre demande mais on l'a pas eu. Donc on avait eu, une première étape, mais j'ai appris plus tard qu'il aurait fallu qu'on redemande une troisième fois puis on l'aurait eu. Puis moi je savais pas. Alors on a demandé un deuxième fois puis ça a pas marché, on était tellement découragés, parce qu'il y avait le projet déjà mais tout tombait à l'eau. Donc on avait comme un peu laissé tomber. Puis on avait fait des demandes pour la société, on a décidé pour avoir une bourse, on a décidé de former une société. Ça c'était Jean Laurendeau, Marie Bernard, il y avait, à l'époque je me souviens plus qui il y avait. Puis on avait fait plusieurs demandes de bourses tout ça, puis ça marchait jamais. Puis là les instruments étaient de plus en plus vieux, puis là il y avait, je pense que Jean a dû te raconter en tous cas, et là, moi je voulais avoir une bourse j'ai dit, bon, il faut qu'on trouve quelque chose. [Murmure] pourtant j'ai tellement peu [?]. Comment ça se fait que c'est moi qui faisait ça, je sais pas...puis là il y avait, je regardais tous les types de bourse, dans quelle catégorie ça entraient, je me dit merde on peut rien avoir on rentre dans aucune catégorie. Il y avait aucune catégorie pour le type d'instrument qu'on avait. Donc, j'ai pris le taureau par les cornes [rire], j'ai écrit à la ministre de la culture directement, j'ai tout fait le topo des ondes ici, toute la littérature qu'on avait, qu'on est un patrimoine musical extraordinaire, typiquement Québécois parce que tous les compositeurs ont écrit, de



'60...de '65 à '80...à la fermeture de la classe d'ondes, donc '80...'90? Enfin, tous les compositeurs avaient écrit, alors j'ai fait valoir ça, puis qu'on avait été les seuls en Amérique à jouer des ondes Martenot, puis c'était ici que ça se passait, puis qu'il y avait des grands compositeurs qui avaient écrit pour ça puis que ça faisait partie du répertoire mondial classique maintenant. Messiaen, on peut pas l'éviter, Varèse non plus. Donc, là je reçois un téléphone: oui, euh, on peut vous recevoir. Je me souviens cette journée là je me rendais et je m'attendais encore à un non tu sais. Je rentre dans la salle c'était l'attachée de presse de la ministre qui me reçoit, elle me fait simplement on vous a entendu. Puis là j'étais: pardon? On vous a entendu. Pis je me suis dit, ah, ils comprennent la situation, on est compris, ils vont en tenir compte-là. Effectivement, alors on a eu une bourse, euh, \$35000, c'est pas énorme mais c'est assez pour faire ce qu'on est en train de faire. [DS: oui] puis là c'est ça, alors on est dans ce projet-là, là avec Jean qui est monté vraiment.

[42:51]

DS: Ça fait combien d'années que...?

SB: On a eu la bourse en 2006, mais Jean a été malade, donc, on a eu vraiment des...Jean a été malade. Et comme on était pas dans aucune filière, faut pas dire ça non plus, on a jamais eu de comptes à rendre. Donc on administre la bourse très très bien, c'était l'entretien, pour l'entretien des instruments, et la modification de certains paramètres, de certains composants. Et c'est tout à fait ça qu'on fait là. Non, c'est bien.

DS: Est-ce que tu as déjà une copie de la lettre que tu as...?

SB: Oh je ne saurais pas où ça serait, vraiment pas. C'est pas en ordre. Si je la trouvais je pourrais te l'envoyer, t'envoyer une photocopie mais je sais pas si j'ai gardé ça. Je dois peut-être l'avoir gardée, je sais pas, je sais pas du tout, je suis très très désordonnée. Vraiment c'est très négligé tout ce qui est pas, euh, je sais pas quoi la musique où...c'est très négligé. Je suis pas administratrice, je fais ça puis c'est comme malgré...ça devrait pas être à moi de faire ce genre de choses.

DS: Oui...

SB: Il y a Owen qui est avec moi, pour les finances, puisque faut faire des rapports d'impôts, faut faire toutes sortes de choses puis moi...zéro, mais là maintenant, c'est très chouette ça pour la société, la société de développement puis de diffusion des ondes, on l'avait faite à ce moment-là, là ça, ça a évolué. L'an dernier en octobre 2013 on a eu toute une nouvelle équipe, avec Owen, Caroline, Magalie Babin, euh,

qui sont arrivées, des jeunes qui étaient intéressées parce que nous autres, on était là depuis des années.

DS: Qu'est-ce que c'est la société? Parce que j'en ai pas beaucoup entendu parler.

SB: Euh, ben c'est une société pour...dans le fond c'était pour faire des levées de fond, euh, dans le but de faire des festivals d'Ondes Martenot aussi. La première chose c'était pour faire des recherches sur les Ondes Martenot, c'est le développement, c'est une société pour le développement et la diffusion des Ondes Martenot. Puis on avait dit ondes musicales parce que peut-être qu'on va aboutir à autre chose que des Ondes Martenot. Oui, donc on avait appelé ça ondes musicales. Donc c'est comme ça que ça s'appelle. Mais dans le fond, c'est Martenot, c'est...

DS: Oui.

SB: Ouais.

DS: Donc c'est Québécois?

SB: Ouais. Ouais. C'est pour faire des commandes aussi à des compositeurs,

DS: Oui, oui.

SB: Donc ça passe par...

DS: Oui, oui, quelque chose d'officiel...

SB: Oui. C'est ça.

DS: Qui a commencé?

SB: Commencé c'est Jean et moi.

DS: Ah ouais?

SB: Ouais.

DS: Parce qu'il y a un site web?

SB: Qui?

DS: Est-ce qu'il y a un site, euh, sur l'internet?

SB: Non, on est pas organisé. C'est ça, sans doute qu'il va y en avoir un avec Owen, avec Magali Babin, ça va se développer autrement. Ben là on va se voir là, à l'automne, on va se voir, on va faire notre rencontre, sûrement qu'il va y avoir quelque chose avec Caroline est dedans aussi, donc il va sûrement y avoir quelque chose de plus, euh, défini, mais si tu voyais...là, j'ai un truc là avec toute sortes de papier, oh ben peut-être que j'aurai des dates là dedans. [Va chercher les papiers] et voilà. C'est de là que ça part toute l'affaire avec Jean Landry, ça fait des années hein, c'est là.

DS: Oui.

SB: Comptabilité, encre bleue, 2007...[rire] ça a l'air...c'est un truc comptable mais, je me souvenais pas...[rire]

DS: Oui. [rire]

SB: Je pourrais avoir sans doute là...Gaston Lemieux, tu vois, 22 juillet, 87...

DS: '87? Ça a commencé '87?

SB: Sans doute avant ça peut-être. Je sais pas je dois l'avoir dans mes papiers...mais...je sais même pas où sont les papiers de...tu vois, c'est pas rangé, mais c'est là. [DS: oui]. Mais c'est pas rangé, donc quand je fais...ah! C'est fou, je cherche, tout ça pour que je cherche tous les papiers, mais c'est correct, c'est rangé.

DS: Voilà [rire]

SB: Ah là là, non je peux pas te dire...

DS: Donc c'est, c'est mon âge.

SB: Mais c'est sûr que j'ai quelque part une copie de notre charte que Geneviève a... au début c'était Geneviève qui faisait la secrétaire, qui faisait toutes les choses de...mais depuis qu'elle a été malade...

DS: Oui

SB: Mais je devrais avoir ça écrit quelque part ah, peut-être là-dedans? Non, ça c'est des copies de chèques. Je sais pas faire les choses, ben on a eu des dons, tout ça, j'apprends vraiment sur le tas, puis j'apprends pas vraiment bien parce que, il aurait fallu que je prenne un cours comme toi de management ou je sais pas quoi. Mais au moins ça marche, ça marche quand même, tu vois, mais là il va falloir qu'on trouve l'argent autrement...conseil des arts? Non, je peux pas te le dire, quand est-ce que ça a commencé.

DS: Mais si j'ai besoin des...

SB: De certaines dates?

DS: Oui.

SB: Oui, je vais fouiller mais là c'est t'sais, c'est trop long.

DS: Oui, peut-être les autres, euh...

SB: Peut-être Jean, ah j'ai déchiré des pages, tu vois c'est même pas...

DS: Ah c'est pas trop officiel...[rire]

SB: Ben non, mais parce que là j'avais pas d'autres cahiers...[rire]. Je trouvais qu'il était encore bon, celui-là. De toute façon, quelque part là-dedans il y a la date de...c'est 83 je t'ai dit donc c'est sûrement dans ces eaux-là.

DS: '83?

SB: '82, peut-être qu'on a fait la société.

DS: Je n'ai pas encore entendu le nom Magali Babin?

SB: Oui, Magali Babin.

DS: Est-ce qu'elle est une ondiste?

SB: Faudrait que tu regarde sur internet, non elle est pas ondiste. Elle est dans la musique plus actuelle.

DS: B.A.B.?

SB: B.A.B.I.N. Elle est super intéressante. Bruitiste, elle fait des bruits puis tout ça. Ma fille se sert beaucoup, elle a fait beaucoup de musiques avec des petits sons.

DS: Euh. Il y a une autre, un autre sujet que je voudrais en parler, c'est plutôt quelque chose, pas idéologie mais philosophie, spiritualité des ondes, je sais pas comment poser une question mais, euh, il y a plusieurs de gens qui m'ont dit que tu as un peu, euh, un certain point de vue des ondes qui est, euh, très profond. Pour toi les ondes c'est quelque chose qui a une relation avec la vie, avec...

SB: Ah ouais. Je sais pas quoi te dire, euh...j'ai une position philosophique. Si j'en ai une elle est pas pensée là...euh...ben quand on joue sur les ondes, c'est ça c'est que...je pourrais pas te parler de ça,..je...la position philosophique, euh, je me sens pas une position philosophique, c'est bizarre, non.

DS: Est-ce que tu comprends que certaines personnes trouvent la religion dedans?

SB: La religion! Ça dépend qu'est-ce que tu veux dire par religion. Si c'est d'être relié aux choses, oui, ça c'est sûr t'es absolument reliée. Justement t'as un rapport intime avec autre chose que toi même, puis t'as l'impression que c'est toi même qui continue, donc, c'est sûr que...mais c'est pas un rapport religieux. C'est un rapport de lien profond là, mais ce qui relie à autre chose, c'est sûr que...je sais vraiment pas quoi te dire, c'est pas une position philosophique. C'est une position de vivant [DS: oui, c'est...] de vivant. Juste cette envie de...c'est parce que tu travailles avec du vivant c'est ça qui se sent beaucoup beaucoup aux Ondes Martenot, c'est que...toi même si t'as touché un peu, c'est comme un poisson que tu tiens, t'sais il y a quelque chose de frémissant, t'as quelque chose qui est là puis...ouais, je saurais pas comment répondre à ta question.

DS: Ouais, euh...est-ce que tu penses que les ondes, le son, a une certaine connotation maintenant qui a différent que dans le passé?

SB: Tu veux dire dans un contexte musical, ou en tant que son lui-même?

DS: Euh, contexte musical.

[54:29]

SB: Ouais, moi je trouve...à cause...oui. Il a été entendu comme...ouais, enfin, moi je pense qu'il a été entendu comme étrange. Un son étrange quand il est arrivé. Un nouvel objet bizarre, étrange, quelque chose que...on a jamais entendu. Puis en même temps c'est quelque chose qui est comme familier dans le désir insoupçonné qu'on avait de lui. C'est vraiment quelque chose d'étrange et familier. Ça, dès le départ j'ai l'impression que c'était comme ça, c'est pour ça qu'il y a quelque chose d'attirant dans lui, dans ce son là. Puis après, ce côté étrange on l'a exploré avec toutes sortes de "zigounages", puis toutes sortes de choses, puis euh, en plus avec la belle musique aussi, ce son là qui apportait une nouvelle dimension, une nouvelle couleur. Ensuite le Moog est arrivé, le synthétiseur est arrivé, et tout l'aspect de...toutes les potentialités qu'on voyait, on peut faire tout ce qu'on veut avec les ondes Martenot, là le synthétiseur, est arrivé, le Synclavier, ils faisaient des choses incroyables, ben plus avec, t'sais, des choses harmoniques avec polyphonie, alors là tout d'un coup les petits ondes Martenot on parut tout d'un coup, minuscules. C'était comme une petite voix. Ça reste une petite voix, mais dieu sait si maintenant les petites voix sont précieuses, tout le monde crie, donc les petites voix sont très précieuses [rire], puis dans ce sens-là, oui le contexte a changé. On a fait toutes sortes de sons, puis on a des paquets de sons partout c'est super le fun, puis tout d'un coup quand t'entends, c'est comme si t'avais tout d'un coup ce son de voix, particulière qui porte la chose la plus belle de l'homme, puis on l'a avec la couleur électronique, mais tu l'as en même temps avec toute l'étoffe de l'humain, il y a quelque chose de très beau là-dedans. Donc le contexte a changé parce que l'histoire a changé. Il y a eu l'histoire des instruments électroniques depuis le début, qui a pris vraiment beaucoup d'ampleur, puis tout d'un coup le tout petit qui est resté dans toute sa fraîcheur, il y a une fraîcheur dans les ondes Martenot qui est inaltérée et c'est tout le temps ça qui est porté. C'est comme l'enfance, ça a été l'enfance des instruments électroniques puis ça continue d'être un enfant éternel. Il y a quelque chose de cet ordre-là.

DS: Oui.

SB: Donc il y a comme, oui, il y a une évolution, ouais, dans la façon de l'entendre parce que le contexte a changé donc, c'est relatif tout ça, donc on l'entend autrement, on le perçoit autrement. Mais en le percevant autrement on le perçoit beaucoup comme il était dans son être premier là, comme il était, cette espèce

de...ça reste étrange, il y a comme un...un son qui...je suis toujours embêtée pour le décrire...c'est immatériel, c'est l'onde électrique, il y a quelque chose d'immatériel. Puis que on saisit...on a l'impression que l'ondiste il donne une enveloppe tout le temps à quelque chose d'immatériel puis qu'il euh...il donne corps, il donne corps, il donne corps, tout le temps-là, puis c'est...c'est l'inverse du travail d'un instrumentiste, qui a un matériau puis qui essaie de sortir l'essence du son, il y a comme un...il y a quelque chose d'un peu le contraire. En même temps on travaille beaucoup sur bien guider le son aussi là, l'amener d'une façon musicale. Ouais. Tu poses des grosses questions mais c'est des belles questions.

DS: J'ai en ce moment une image de quelque chose dans l'air, mais j'ai essayé de trouver une petite métaphore mais c'est pas possible c'est juste, quelque chose dans l'air, et on a peut-être, on peut, c'est invisible, mais on peut le faire visible, ou donner une petite couleur pour le faire visible, mais seulement pour un petit peu de temps. Mais si on ne le fait pas visible, c'est juste là mais on le sait pas.

[59:40]

SB: Oui, exactement, oui c'est un peu l'équivalent des infra-rouges puis des ultra-violet, qui existent mais qu'on peut pas voir puis tout d'un coup quand tu mets un appareil pour les voir, tu mets une prothèse, puis tu vois les infra-rouges, tu vois les ultra-violet, qui existent sans que toi tu les vois. Il y a comme des choses qu'on...ouais, ouais. Mais c'est surtout dans la qualité, c'est le son même de l'onde, ce son de l'électricité, c'est quelque chose de matériel mais d'intangible. Donc c'est matérialité intangible, c'est bizarre, c'est paradoxal, puis on est dans ce monde, puis...on travaille sur cette chose-là. Ouais. Parce que c'est une réalité l'électricité, c'est quelque chose, c'est une onde, il y a une matérialité c'est un...

DS: Comme de l'énergie...

SB: Ouais.

DS: Puis qu'on ne peut pas...

SB: Oui.

DS: Oui.

SB: Ça se sent l'énergie donc il y a quelque chose de matériel, matérialisé mais en même temps...

DS: On voit, on voit les effets, ou on entend les effets mais on peut pas...

SB: Oui, ou on sent les effets aussi.

DS: Oui.

SB: On peut sentir les effets. Mais on voit pas la chose elle-même.

DS: C'est pour ça que j'ai dit 'faire visible'.

SB: Ah ouais, ouais, ok. Oui c'est ça qui m'a amené à te dire ça, ouais, oui c'est ton expression.

DS: On voit les effets. Oui. Audible. Les autres questions. Selon toi qu'est-ce que les ondes ont besoin pour survivre, pour voir un futur?

SB: Elles ont besoin d'être bien enseignées.

DS: Bien enseignées?

SB: Ah ouais. Elles ont besoin d'être enseignées dans des milieux où il y a beaucoup de, d'idées, de compositeurs, de...elles ont besoin...bah, ça c'est...comme d'être jouées, d'être enseignées. D'être aimées, en tous cas il s'agit qu'on aime les ondes puis qu'on veuille en jouer. Oui, c'est...pour que ça continue il faut qu'il y ait vraiment des nouveaux facteurs d'ondes Martenot, ça c'est très important parce que les instruments s'usent puis s'il y a personne pour faire de nouvelles ondes, ben c'est fini. C'est un instrument de musée hein, c'est pas la peine de rêver. Mais euh, moi je pense que, tout ça, ça se produit en ce moment, puis il y a des gens qui ont pas étudié les ondes, comme Jonny, qui fait, c'est un autodidacte, puis il fait tellement pour les ondes, oui il joue bien des ondes Martenot, puis c'est sa façon d'en faire c'est sa musique, puis c'est merveilleux. Il va y en avoir comme ça puis la musique, que ça soit dans toutes les musiques, que ça paraisse en jazz, en...dans les musiques actuelles, tout ce qui va se faire là, dans le futur. Mais qu'il y ait aussi, une présence dans la musique contemporaine. Ah oui, moi j'y crois vraiment beaucoup. Ben c'est une façon d'explorer, vraiment plusieurs avenues, plusieurs possibilités des ondes.

DS: Donc c'est tu as dit, enseigné, mais est-ce que ça peut être un peu plus libre qu'enseigner la technique traditionnelle ou, qu'on...comment enseigner et en même temps ne pas être trop conservateur, et essayer d'arrêter le développement des méthodes dans le futur?

SB: Essayer d'arrêter le développement des méthodes?

DS: Oui je pense que je ne peux pas poser les questions qui ont mon opinion, mais...mon opinion c'est: on a besoin des personnes qui savent jouer comme [SB: oui d'une façon t...] mais avec tout le contexte des ondes est nécessaire pour que ça développe mais je pense que c'était aussi intéressant de, de donner des instruments à des gens maintenant des compositeurs...

SB: Oui qui vont faire tout à fait un autre trajet. Tout à fait, oui, oui. Mais c'est ça,

faut qu'il y ait plusieurs façons d'en faire, c'est comme quand t'apprends le jazz, quand t'apprends la musique pop, même quand tu chantes. Si tout le monde...si tu veux faire de la musique populaire, sans prendre...tu prends pas de cours de chant classique, tu peux le faire, tu vas apprendre comment faire, mettons tu veux faire du chant classique tu prends pas un cours de musique populaire. Donc chaque domaine de composition à sa manière, donc c'est sûr que la manière d'enseigner, comme Estelle va faire, c'est une manière qui va ouvrir beaucoup plus de possibilités que si tu as pas un méthode d'enseignement, tu peux trouver quelque chose qui t'appartient. Mais tu vas avoir beaucoup plus de difficultés à jouer plein de, de...Marie Bernard, elle peut faire n'importe quoi. C'est clair, parce qu'elle a une formation de base qui lui permet de faire ça t'sais, puis elle a besoin...

DS: On a besoin d'une base de technique peut être?

[1:06:38]

SB: Ben, c'est toujours, tu peux...on peut faire...moi repense que si tu as le goût d'acheter un instrument puis tu dis bon moi je veux faire des ondes Martenot, puis tu vas faire à ta façon, tu vas faire des choses, un peu comme quelqu'un qui apprend la guitare, t'es pas obligé de prendre des cours au conservatoire pour apprendre la guitare, mais c'est sûr que si maintenant tu prends un cours puis tu apprends tes accords avec quelqu'un, t'apprends à comment tenir ta guitare, tu comm...tu vas peut-être aller plus vite et plus loin que si tu le fais tout seul. Mais tu peux le faire très bien tout seul, aussi, puis tu vas faire autre chose parce que tes limites vont définir ton style aussi. T'sais tu vas aller dans ce que tu fais, ben ouais, c'est clair, on peut le faire ça, mais ce que je peux souhaiter à cause du répertoire, parce que c'est une richesse, il y a une richesse actuellement là, à cause de ce répertoire là on peut souhaiter qu'il y ait aussi une place dans un école de musique, moi je pense que ça vaut la peine. Parce que après tu peux l'oublier ça, tu peux dire, oh c'est fini c'est pas ça que je veux faire, ou alors tu peux aussi carrément pas passer après là puis faire autre chose, j'en ai...tu sais il y en d'autres qui font ça, t'est pas obligé de...mais euh, je pense que, il y a toute une formation aussi que, mettons dans une institution tu apprends...tu apprends à lire tes notes, tu apprends les tonalités euh, Jonny il avait un bonne formation classique tu sais, il a pas appris les ondes mais il y avait quelque chose d'autre là. Donc, il peut composer, il peut faire des choses, il connaît l'orchestre, t'sais, c'est pas, il faut avoir une culture musicale. C'est pas... il faut avoir une culture musicale, puis euh, ça enrichit de toute façon ton jeu, quand tu



apprends dans un institution, moi c'est cet aspect-là, ça peut être très fermé, très...euh...comment je peux dire...castrant, il faut que ça soit bien enseigné. Ça c'était vraiment une approche, euh, moi en tous cas Martenot puis Jeanne Loriod, c'était, Martenot c'était le jeu, c'était vraiment pas quelque chose de 'tu ne dois pas faire ça là', c'était pas ça là, c'est 'comment on peut faire ça le mieux possible? Ce qu'on est en train de faire, comment on peut le faire?' Mais...vibrato on peut faire [chante], si on veut faire [chante] pourquoi pas, on est des êtres libres, mais tu es d'autant plus libre que tu as appris aussi, que tu t'es fait comme une discipline, après ça tu peux plus en jouer. Ça peut aussi tu détruire, tu peux faire la discipline en, par la discipline...oh la discipline, la discipline, puis c'est...en soit ce n'est rien tu sais, c'est juste pour te permettre de faire plus, plus dans les chemins que tu aimes. [rire] [DS: oui] Voilà, non mais c'est vrai c'est ça. C'est dans ce sens-là, je comprends ta question-là?

[1:09:54]

DS: Oui.

SB: On est pas obligé absolument pour jouer des ondes Martenot puis, euh, pas du tout. Puis l'esprit Martenot c'était: on peut jouer de la radio, donc l'esprit Martenot c'est tout le monde peut en jouer. Achète un instrument puis vous allez vous amuser, vous allez jouer de la radio. Donc c'est tout à fait ça c'est: amusez-vous, faites, t'sais c'est proche de vous là, faites-le. Donc, c'est clair, ce serait idéal si tout le monde, c'est comme si on jouait de la flûte à bec, tout le monde, tu t'en vas...tu t'en va en camping t'apportes ta flûte à bec, [rire], ne t'apporte pas tes ondes Martenot. Ça serait chouette que ça puisse être un instrument aussi répandu.

DS: Oui.

SB: Ouais. Pas réservé juste à, qu'on en apprenne, réservé à des gens qui étudient au conservatoire ou dans une école de musique.

DS: Oui, mais, euh, on a besoin des possibilités pour les gens pour se spécialiser.

SB: Ben, oui, ben oui. Tu sais quand t'entends tout d'un coup des gens qui jouent super bien de la guitare, ben là t'est tellement aux oiseaux, même si toi t'es capable de jouer des choses, ça donne un grand plaisir, mais tout d'un coup tu vas être stimulé par ça, ça va t'ouvrir des...perspectives.

DS: Je pense que j'ai, hum, peut-être une dernière question, s'il y a un instrument qui, euh, non, peut-être différent. Il y a un Ondes Martenot, quelles choses doivent, quelles caractéristiques des ondes, peut-être n'importe quoi, doivent rester, euh, dans

un instrument pour pouvoir dire c'est un ondes Martenot? Donc pour simplifier quel...

SB: Les choses les plus simples, de base des ondes Martenot. [DS: mmm]. C'est la touche, la façon de jouer sur la touche, parce que c'est ton souffle, c'est comme ton souffle, donc ça c'est super important. Pour la...c'est ça qui fait le son de l'onde, et moi je dirais aussi le vibrato du clavier, puis je dirais le ruban, le jeu au ruban. C'est les 3 choses qui...ben c'est les ondes Martenot. Mais après ça t'as les timbres qui peuvent aller...mais je pense que la chose fondamentale c'est ça. Ouais.

DS: Mmm.

SB: C'est ces 3, il y a comme 3 éléments. Ouais.

DS: C'est très clair maintenant après avoir vu la littérature après avoir parlé beaucoup de gens, que c'est...

SB: Oui c'est les 3...

DS: Tout le monde dit la touche, et presque tout le monde dit les autres de...euh...

SB: Ça traduit, parce que le clavier sans vibrato se serait pas, alors faut qu'il y ait ça aussi.

DS: Donc c'est pas les timbres spécifiques des diffuseurs?

SB: Non, non. Pour dire ondes Martenot, c'est le principe.

DS: Donc on peut... est-ce que tu, tu sais le French Connection?

SB: Ouais.

DS: Donc si le clavier était mobile se serait un ondes Martenot?

SB: Ouais c'est proche, ah ouais, ouais. L'esprit Martenot est là. T'as vraiment l'esprit des ondes. Puis, c'est...ben, c'est sûr que le son...j'entendrai pas un [chante un son très nasal], il y a un son qui faudrait que...ondes Martenot. Il y aurait l'onde, le timbre onde mais t'est pas besoin d'avoir tous les diffuseurs, tous les timbres...mais de la même façon aussi en jouant avec un timbre complètement nasillard ce serait des ondes Martenot quand même. Ouais. C'est vraiment la touche, le vibrato et la façon de jouer au ruban. Ouais.

DS: Voilà. C'est ça je pense.

SB: C'est drôle parce qu'on parle beaucoup du timbre des ondes mais on finit en disant mais non, c'est peut-être pas ça, c'est la façon d'en jouer.

DS: Ou c'est vrai, peut-être parce que c'est pas le son mais le résultat de jouer...

SB: C'est sûr, c'est clair qu'on sent qu'il y a tout le modelage, tout le temps, tout le temps le...puis c'est ça c'est dans la touche qu'y a ça puis c'est dans le vibrato donc

aussi dans le geste. Donc c'est clair que c'est tout ce qui se passe autour de ce son-là, c'est le travail de ces trois paramètres, de ces trois choses-là. Je serais curieuse de voir... on avait un sampling tu sais un échantillonnage de...je sais pas moi, de clavecin, qu'est-ce que ça donnerait joué, ou je sais pas moi, de tuba, qu'est-ce que ça ferait? Est-ce qu'on aurait l'impression d'un tuba ou c'est des Ondes Martenot?

DS: C'est un bon projet de recherche

SB: [rire]

DS: C'est pour moi, c'est pour moi [rire]

SB: Ouais parce que c'est étrange, moi y a quelque chose dans le son des ondes Martenot moi qui, ce son-là, là, y a quelque chose de...de neutre. Il y a une neutralité du son qui fait qu'il y a quelque chose qui apparaît, un résultat de...je sais pas c'est quoi, ce qui se passe, donc c'est pour ça que...on parle pas du timbre mais le timbre...

DS: Mais...l'absence?

SB: Y a comme, mais des fois dans le timbre, quand même on rajoute des harmoniques, on a les métalliques et tout ça, mais puis on a plus...si tu entends les extraits documentaires des ondes dans le film de Caroline tu vois que le son des lampes, y a comme un...c'est un son qui a plus de matière que le son des transistors. Qu'est-ce qui fait la différence entre le jeu du Theremin puis les ondes Martenot? Parce que dans le fond c'est le même son. C'est dans onde. Alors que sur le theremin c'est par là, c'est vraiment, c'est la maîtrise de, c'est la touche. Parce que le vibrato est pas aussi subtil, les jeux sont pas aussi, euh, ont pas autant de virtuosité, parce qu'on a un clavier...

DS: C'est peut-être trop continu?

SB: Ouais? Non, t'as pas les sons séparés, Martenot il fait travailler [chante] tu sais c'est vraiment l'alternance de sons glissés, de sons allégés, de sons rapides, de gestes rapides.

DS: Geneviève a dit quelque chose, euh, et je sais pas si c'est bien de dire cette chose parce que ça peut influencer votre, euh, les opinions, mais, euh, Geneviève a dit, ce qui est si intéressant des ondes c'est, il y a, on peut jouer un son continu qui n'a pas besoin de souffle ou de changer la direction de l'archet.

SB: C'est ça c'est infini, je te dis c'est comme on ne peut l'arrêter que quand il y a une panne d'électricité. C'est juste ça qui peut arrêter le son, l'orgue maintenant c'est le même aussi, mais tu module avec ce son-là, c'est que ce son-là tu peux le

modeler à l'infini, ce qui est pas le cas de l'orgue qui est beaucoup plus statique. L'onde, c'est vrai que c'est une des grande caractéristiques de ce son-là, c'est que tu respire juste d'une façon musicale, mais t'as pas besoin de rien, ton geste en fin de compte, tu peux jouer pendant des heures et des heures.

DS: Ouais, mm, mm

SB: Sans arrêt, ouais. Ben je sais pas si ça va convenir, mais en tous cas j'espère que j'ai fait le tour. S'il me vient des idées ben je te dirai. Des dates [rire]

DS: C'est juste pour moi, pour la conversation, [SB: oui, oui, tout à fait] pour imaginer et tout ça mais je vais trouver les dates si j'en ai besoin je pense.

SB: Non mais j'ai sûrement quelque chose là.

[End of recording]

## Appendix F: Interview with Owen Chapman

Café Olimpico, Montreal, 24 May 2014.

OC: Do you want me to introduce myself or anything?

DS: Yeah that would be good maybe.

OC: Ok, so My name is Owen Chapman, I am a professor in Communication Studies at Concordia and I've been working on a research project on the Ondes Martenot since 2008. And I'm a musician who is very interested in the Ondes Martenot but I haven't been able to get hold of one, so I play a lot of instruments that are similar, and my research project also looks at other similar instruments like the Theremin. So in terms of the Ondéa, I first heard about the Ondéa through Caroline Martel.

OC: Are you going to meet Caroline Martel, by the way?

DS: I met her briefly in La Rochelle. I hope to talk to her again here.

OC: She lives just up the street. Um. It was through Caroline and her film that I got interested in the Ondes Martenot at all. I very quickly, in talking to her, learned about the Ondéa project in Paris with Mr Oliva. You've heard about Mr Oliva's connection to Jean, I imagine? (DS: Yes.) I'm not sure what I can tell you that Jean probably will fill you in on in detail, but I know that Mr Oliva had been working on the Ondéa for a very long time, I think, since the early nineties. Had gotten to the point where he had built a number of successful prototypes and had prepared like, a PDF pamphlet, and was about to start marketing the instrument, but it stalled for a variety of reasons, I think financial solvency principally, and so I believe he declared bankruptcy. Had to put the project on mega-hold. And at the same time I think Caroline's relationship with him sort of changed, and he in the end didn't participate in her documentary, so. That's all I heard about that story. But somebody else who I met through the documentary was David Kean. Caroline was initially doing some research work with him and in 2008 or 9, yeah, summer 2008 I went out to visit David Kean at the Audities foundation — this is in Calgary — and at that point they had just acquired a model six Ondes Martenot, so like the last version that had vacuum tubes. (DS: Yeah.) I think it was in pretty bad shape when they got it, and they were trying to restore it. They did, you know, successfully restore it, but there

were so many particularities to — I'm sure you learning or know already, each instrument has a lot of idiosyncratic elements and they were having a lot of trouble making sort of fine adjustments. (DS: Right) They also had to replace some of the especially particular components like the *touche d'expression*, or the touch control or whatever you want to call it. And there's also, on that model of Ondes there was a foot pedal that does the same thing as the *touche d'expression*, and in both cases I think what they had was either broken or the magic powder inside which I'm sure you've heard about (DS: Yeah) was like *kaput*, and they had to replace it and design a replacement component. So when I went to visit Dave — sorry, this is a very long story — when I went to visit Dave it was to see his instruments and early Theremin and Moog synthesizers, and a working Novachord and stuff which I can talk about later, and in particular to see and play the Ondes Martenot. And when I played the Ondes Martenot — two colleagues came out with me, too, another guy, Dave Madden, who maybe you should meet. He lives in Montreal, just up the street, he's a former student and he wrote a paper recently on the Ondes Martenot. And we all agreed while David's Ondes was functional, it wasn't tuned right in the way the instruments here in Montreal that we've played work. And David is also interested in just preservation of materials. So I helped get him a little bit more in touch with the Ondes Martenot scene here in Montreal, introducing him to Marie Bernard and Gen'viève [Grenier] and Jean Landry and... He'd already kind of been introduced, but sort of just opening up those lines of communication a little bit more. And in particular David was interested in any circuit diagrams, or any schematics or any paper records of the various models of the Ondes Martenot, because he didn't have much, and he didn't know where to find it. And some of that detail in there is what he needed to kind of get this instrument working properly. He started learning a bit more about the whole scene and the kind of, the transatlantic network between France and Montreal and the soft components of Caroline's film as it was emerging. And realised, obviously there was a very active scene in France, but there were documents that maybe were going to be lost, that he would like to preserve and access. But David's French was pretty much non-existent. He wasn't really able to make a lot of momentum on some of those fronts. I mean, he has other priorities, too, he has his own business. This was all 2009-2010. Fast forward to 2013, Caroline's film is launched. Mind, this was 2012 if I recall (DS: Yeah), in the fall, and I rekindled communication with David because he wanted to come out here to

see the concert that the ondistes did for Pop Montréal - I guess it was last fall, so fall 2013. Patrick Watson played, and some other famous local indie guys played, and he and Gen'viève and Suzanne all played as well. David came out for that concert, met everybody, we had dinner together, we talked about a lot of different things, and I think the subject of the Ondéa came up at a variety of points. It's hard because Marie Bernard had purchased an Ondéa with Mr Oliva but I had yet to receive it, and was wondering what was going on, and I guess David being the kind of guy he is, a real gung ho, can-do sort of person, he'd already been involved with a project to manufacture a new uh, do you know about this- (DS: Mellotron) Mellotron, yeah. Had people who he thought could help, and factories he was already in business with, to create a new model Ondes Martenot. Um, and in this case I think jumped at the opportunity to adopt Mr Oliva's designs, and to kind of fulfill that dream, that project. This all happened very quickly. So after the concert, David was talking to me and I was kind of helping him translate, and Marie Bernard was also helping to translate, and then Jean Landry got involved, his English is also excellent, and started making connections with the people in Paris. So you probably know the rest of the story, how David and Jean went to Paris and met Mr Oliva and stuff? Oh, Jean didn't tell you this? (DS: No) So, I wasn't there so I guess it's third hand, but. I guess it was in October or maybe early November that David and Jean went to Paris and met with Mr Oliva. And some other figures in the scene now, the name of one of the guys is escaping me, I think it's Lazare [Levine]. There's a lot of people involved in this story, so I sometimes forget. He had been working with Mr Oliva near the end, in order to build the prototypes. There's also Mr Oliva's son, who has a couple of the prototypes. His name's Claude-Samuel. I wish I could remember the other guy's name (DS: Jaccard?) Not Jaccard, I think he's another guy. I think it's Lazare. So they all had a pow-wow together, ultimately. And Mr Oliva is fairly advanced in — I think he's in his nineties, and uh, this has been a lifelong project and obviously been a source of frustration, inspiration. He poured everything into it, so a very very precious thing. And so there needed to be some nuance and care taken into how the whole thing was going to come about. So they went over there and met in person over the course of many days and discussed a lot of detail about what choices would be made, and how they could bring the production process down, because Mr Oliva's designs were wonderful, but they were very expensive, and in practical terms of weight and air travel and various other things... And with components that

look elegant but were hard to make inexpensively. I mean the thing won't be inexpensive, but it won't be astronomical, either. So you know, the details of those discussions, obviously I wasn't privy to, but the way I understand it is after enough time and back and forth, insurances, Mr Oliva finally decided to agree, and I think they signed forms and a deal was struck. I think the deal helped Mr Oliva kind of bring his finances back in order. And also I believe he's got some commission on the first number of instruments that would be made and sold, so there'd be some income revenue from there as well. But this isn't going to be a money-making ... it's not a capitalist venture, you know, to... (DS: Yeah) So I think like, the first run I believe David's planning to make like, 30 instruments, maybe. And if he can sell and make 30 instruments, he'll break even. Now I know that there was a lot of activity to try to get it out by December, but I haven't heard anything. And in theory I'm going to be part of the team that will help kind of promote and disseminate information about the instrument. Jean Landry will be involved, Marie Bernard as well. The more people that can demonstrate it and showcase it to people, and help it be understood as the unbelievably sophisticated and unique instrument that it is, I think the better. I'm hoping to acquire one for my university so that I can put up a small lab around it. I think they are going to be somewhere between ten and fifteen thousand North American dollars, like Canadian dollars. I pushed David for [the exact] price a few times, but for many reasons he's been like, oh, I really don't know yet. If it's more than 15 thousand dollars, we're going to have a hard time selling them the way we want. So I've been calling my faculty that this expense may come down the pipe for me. Anyway, I'm hoping it'll be successful. So and then the technical differences in that instrument, maybe Jean filled you in on those? It's an interesting combination of digital and analogue circuitry, from what I understand. And the problem with the *touche d'expression* is it's such an integral component of everything, but it wears out, and so Jean has a circuit that he has designed, based on I think one of Mr Oliva's earlier designs, that uses a special type of sensor that will replace the sack of powder. So I believe some variance of that is going to be in the Ondéa. And it's going to have a MIDI out and stuff, so you can plug it into, you know modern digital systems. But I don't believe the sound generating elements- Beyond the control parameters, the *touche d'expression*, the sound generating circuitry is all analogue, I believe. So the sonority of the instrument should be as close as possible to the model 7, the last transistorised model by Mr Martenot. But it will have the capacity to



integrate it in much more modern systems. (DS: Do you know anything about the diffuseurs?) I do a little bit, but again it's a bit third-hand. I know that he has designed like, an all-in-one kind of diffuseur, Mr Oliva, which had a proper speaker, and maybe some subwoofer for kind of reinforcement. It looks like a serious speaker built into it, but then with spring reverb, and I think the gong was also built into it, but it made it very heavy. So I think David's plan was to... It also was part of the whole package, it was kind of an all-in-one purchase, I believe. Which again raised the cost. I think David's plan is for it to be a bit more modular. So the instrument itself can be patched into a soundboard or an amplifier. It may be sold with the straight diffuser with the reverb built in, but then the gong and I think even the *palme* they're planning to reproduce. I think they want to have those options, but again, the modular components, sort of extra purchases one can make, as opposed to forcing it all into one heavy system. When I was speaking to David in January I think that was the plan. So that's about what I know about that. They'll keep the name 'Ondéa'. One thing I noticed — it's one of the things that really pulled me in — so this was in 2007 when Caroline Martel and I were friends through other connections. She told me about a concert /demonstration Suzanne Binet-Audet was giving in the university of Montréal, and would I be interested to come. At that point I was teaching history of sound technology practice at my institution and the Ondes Martenot, I noticed it a bunch of times in my research but I didn't really understand very well what it was, so I went to check it out. And you know, was enamoured with everything about it very quickly. But one thing I noticed that really intrigued me was that when Suzanne was playing the Ondes Martenot, the *touche d'expression* and its- and like the relationship between the right and left hand, the right hand choosing melodic elements that were then interrupted by the *touche d'expression* to create the rhythmic and/or sound envelope shape of the melodic element, that kind of division of labour to me immediately resonated with or resembled what I do as a DJ with scratch technique. You've got the turntable which in a sense produces melody or sound (DS: Yeah, a continuous-) Or can be continuous, but you know with the scratch DJ especially you're using it to generate a noise which is then interrupted by the right hand or left hand depending on how you play it, on the crossfader which is the volume control, which allows the sound to be interrupted either percussively or more gradually to kind of taper the envelope, and you know, DJs who are good at what they do can use that envelope control, cross-fading capacity to generate

incredible difference in the sound. So I saw this link, you know.

DS: That's very interesting, because that's very different from what I've heard so far, in which a lot of people say that the sound may be electronic, but all the rest of it, the controlling of the sound is like any other acoustic instrument. But this is not an acoustic instrument.

OC: No, no. It's not, and I think this ties into something I was going to mention. One thing I found in my research- in 2008 I got a small grant from my school, Concordia, and that's what took me and David and another colleague out to Calgary. To meet David Kean in Calgary and start the research. And that was from the FQRSC, that stands for the Fondation québécois de la recherche de la science et culture. Uh, it's one of the main funding bodies in Quebec for academic research in the social sciences. So I got a grant from them to study the Ondes Martenot. Well, the first time I applied I suggested Ondes Martenot, and I was on the waiting list but I didn't ultimately get the grant. Second year when I reapplied, I said that I would really kind of try and do a study between the Ondes Martenot, the Theremin and the Hammond organ. And that was successful. And that has been what has kept my research afloat on the Ondes Martenot. Since then, I just submitted the final report for the grant like last month. One day I can tell you all the things from it. So that was just to explain the context of the research. And then yeah, so my relationship with the community has always been that of a researcher, not as a player because I can't get access to an instrument. But coming out of DJ culture, sample-based culture, electronic music culture, I see the Ondes Martenot and it links to some of those technologies, sonorities, techniques that are extremely popular right now. And I'm a little surprised at how the scene of instrumentalists and players of the Ondes Martenot are not really that integrated into that world. There's a really strong adherence to playing repertoire that has been written for the Ondes Martenot. I think a lot of the players of the Ondes Martenot, certainly here in Montreal, and those who I've met in France and elsewhere, are classically trained musicians, who may have started out their instrument, like Suzanne, with the organ, or string instrument, what have you. And Marie Bernard is an incredible synthesizer player, she's been in prog rock groups and stuff like that- her musical experience is very diverse. Jean Laurendeau played the clarinet I think, or does, again more of a classical, maybe contemporary music but not popular music, you know. And if you look through the history of what's been recorded — and I have quite a collection of recordings of the Ondes

Martenot — the bulk of it is repertoire. Many of it is not avant-garde, but certainly contemporary, you know, Messiaen, Jolivet, those guys. It's pretty interesting the music that they're making, but it's not pop music. And then the Ondes Martenot had a pretty strong influence in film soundtracks. Some pretty innovative use in film. And there are a few figures and players of the Ondes Martenot throughout the eras that I found that did dip into popular and jazz repertoire or music. There's a woman named Janine de Waleyne — I think actually she's English so I may be pronouncing her last name wrong — she made one or two recordings for a film called... oh, the name escapes me. So ask me if you want to know. I've got a copy of the recording. It's really jazzy, almost samba, that she plays. So she's an interesting figure. There's definitely a lot of other interesting figures. Elmer Bernstein (DS: Yeah) the soundtrack guy, he used the Ondes Martenot in the soundtrack to *Heavy Metal*, which is an animated sci fi film in the '80s, and a variety of other places as well. Sorry, I'm being very long-winded. Coming back to the fact that for many, especially in Montreal, the Ondes is like the type of class we were just talking about. When I propose that to some of the people I know, there's certainly interest in keeping the Ondes Martenot alive, but they're very wary, I would say, the ondistes, of it being perceived as like a gimmick, or a fad instrument, or like a new sound, (DS: They have a very emotional relationship with the instrument) yeah, or that people who don't have the level of technical skill that they do, will take it up and use it and make it popular but be kinda hacks, you know. If I ever get an Ondéa, I'm gonna be hacking around, you know, and my students will, too. But any students I've talked about the instrument to and played them sounds and showed them video footage, they're all quite enamoured, and want to try and use it, my children have tried them and are really enthusiastic about them. And I believe that the future of the instrument does not lie in the reproduction and preservation of the repertoire. Certainly that's a huge part of it, but the future has to embrace these other ways that it might be used and integrated. Especially because the controlling mechanism is so unique. You don't see it. Controllers for MIDI instruments, for all the synthesizers right now, it's exploding. Things you can plug into your iPhone, and whatever, there's a lot of controllers out there, but the Ondes Martenot still stands. It's quite unique even within that role. (DS: And it's almost 100 years old) Yeah, so there's a lot of cross-fertilisation going on. And that's what excites me moving forward. (DS: Yeah) But I've sensed some hesitance, even within these notions of what kind of

curriculum is appropriate, that everybody recognises that there's no teaching of the Ondes anywhere in any institutional framework, especially for those who came up under that type of system, so in Montreal it was taught at the conservatoire for a long time. And it stopped at a certain point, and the local scene wants to bring that type of instruction back. But again with the focus on musicians, music students who are gonna be capable of the type of keyboard virtuosity that is integral.

DS: Yeah. I see, what's interesting about the instrument is that you can- there's a sound coming out of it that you can use immediately, it's just pressing a button. But there's also the possibility to study to a level of near-perfection, you know, with years and years of studying, and that's one of the things I find really great about it.

OC: You can go really deep, you know, or you can dabble, but is that a bad thing? As long as... you don't want it to become the next flavour of the month. But I don't think that there is such a risk of that because as an object, a piece of music hardware, it's going to be pretty unique, and it's going to retain its value I think. The Ondéa will and certainly the few Ondes Martenots that are still working and around will become increasingly priceless objects. But you know, the fear of it becoming a fad, like the latest plug-in for Ableton Live, or something like that.

DS: It'll all depend on how you look at it and what people know about it, I think. It's almost like, if it will become a gimmick, it will only become a gimmick for those people who don't know more about it, and there will always be a community that looks at it differently. In terms of the theory it's just a different type of 'performance' that might be more popular than others.

OC: Yeah. If you think about how Jonny Greenwood has used it in Radiohead, I mean this is obviously a virtuosic musician on many instruments, but you've seen Caro's film I guess?

DS: Yeah, and I've seen him perform last weekend, he was doing one thing on Saturday with an Indian-Israeli ensemble (OC: Not in Montréal?) in London (OC: Oh, wow) and on Sunday he was doing a few bits from There Will Be Blood with the LCO.

OC: I don't know what your impression was, but I know when he met Suzanne and it was filmed, it was a bit awkward, but the thing he kept saying was like, I'm not an expert of this instrument, but I love it, you know. And the ondistes think that what he does is great, so I think it's all relative.

OC: His technique is a little bit shoddy, but without him, it is arguable that the

Ondes' worldwide reputation would be much less than it is. He's brought it to the attention of a lot of people. And apparently now like Gotye, he went out to the Audities foundation to do some recording and access the instruments that David has out there. He was blown away by the Ondes, and that's what he's seeking, is own... and recorded David's Ondes for his next album, which is coming out. I don't know if that's a secret or not, but now you know. Patrick Watson here in Montreal, there's a lot of buzz around him, and he's committed, I guess, to put it on his next record, so there's more and more of a celebrity position-

DS: There've been a few Belgians as well, I know a woman called An Pierlé who has one, but it sort of blew up and the ribbon's fried. But she used it with an orchestra to produce a few tracks of her album that were rewritten for orchestra.

(OC: Very cool.) And you know the history with Jacques Brel (OC: Yes) so that too. There's a lot of musicians that once they do know about it, they...

OC: Yeah. So we'll see. A lot of us are waiting- I guess there's Dierstein, have you heard of...

DS: Yeah, I've been trying to save up for that, but-

OC: What is it, 20.000 euros or something?

DS: I think 11.000 for just the instrument and it ends up being about 13 with like, cables etc.

OC: Ok, does it come with diffusors?

DS: There are some, yeah, I think that's extra. I think Jonny has the entire set. He was using the *palme* and everything.

OC: Wow. And... so what does that come to in Canadian dollars? Probably about 20. I think that's why- David's thinking about that, you know. Not that he wants to put Dierstein out of business, but that he wants to offer something...

DS: It would be nice to have both.

OC: Yeah, obviously. Yeah, I guess if David's thing doesn't happen I'll start saving up for the Dierstein too, but I'll talk about my institution about that. I believe in David's capacity. I'm sure it'll come to pass.

DS: Exactly what Jean Landry said.

OC: Yeah. He's very dogged in making things happen, and unbelievably knowledgeable and very generous. He's deeply committed and passionate about all the instruments he collects, especially the Ondes Martenot. It's sort of his baby. Impact?

DS: I'd like to ask for a bit of advice from you, having a bit more experience researching the Ondes Martenot. How would you describe the impact, as part of a grant, in terms of the Ondes Martenot?

OC: That's a really good question. You know, I've been thinking exactly about this. Because when I applied for the grant I had just come out of my thesis research, which was about a different kind of thing, and I needed a new thing, and I was fascinated by the Ondes Martenot, but I think I was a bit naive and inexperienced around how to write a grant proposal that had that sort of impact factor. Especially the first shot, when I only talked about the Ondes Martenot, I imagine it was probably obvious that I was a little bit like, taken with the instrument, I wasn't sure how it was all gonna go, but thought it was really important to raise awareness. And I was, I think that still stands, and raising awareness especially in the English-speaking world around the Ondes Martenot, is an important thing to do in and of itself because of its historical significance, you know. And not only its historical significance in a linear kind of sense, in terms of the progression of analogue synthesis, where it has a very special and slightly under-acknowledged place. But even its contemporary uniqueness, as we were saying, you know, like. If you look at the Hammond organ, it wasn't a synthesizer per se, but you know, the kind of keyboard control model of electronic sound generation and playback, I think inspired the success of the Hammond organ. And then Hammond's other device, the Novachord, again a keyboard-based instrument, electronically generating its sound. You wouldn't call it a synthesizer necessarily because for each key on the keyboard there was a vacuum tube that made the particular sound for that- that's not exactly true, but [?] sound (DS: Yeah) and then divided all the way down. As opposed to the Moog synthesizer and other synthesizers that use a single oscillator which then adjusts its pitch according to which key you pressed. That model of synthesizer has become the predominant way that we understand analogue synthesizers, and the keyboard control model has obviously become the predominant paradigm for how that sort of instrument is made. So the Ondes Martenot still stands as like, unique, because of the internal key vibrato, because of the *touche d'expression*. (DS: Yeah.) So that's one angle. Unacknowledged and still slightly misunderstood in the past and obviously still relevant today. (DS: Yeah.) But then the second time I wrote the grant proposal, by promising I would make this comparison with the Theremin, which is an instrument you can go to the shop and buy today, and also the Hammond

organ, allowed me to tease out some other historical, theoretical ways of understanding the relationship of electronic musical instruments toward the kind of technological understanding of the 20-21<sup>st</sup> century, especially around media, which is my field, I'm in Communication Studies. So if you look at what was happening in electronic sound, and the hardware and the instrument and the knowledge, and its relationship to radio for instance, its relationship to other forms of broadcasting. The Theremin was basically a radio, but you know, inverted, the Ondes Martenot arguably you could say is similar. Jean Landry likes to say it's 'active radio'. So there's relationships to other technologies of the era that again are historically interesting. And I also think- I mean you've got a great angle with this technological determinism versus social constructivism balance, which I think these instruments speak to. And those questions are obviously still theoretically rich and relevant. Especially looking at today's situation. But the Ondes Martenot and the Theremin and even the Hammond organ are- the general interest of their... is slim. Sort of the widespread impact of the research, you know. The people who really care... it's a niche thing. (DS: Yeah) Which is ok. But even for people who like instruments, it's a bit of a novelty subject anyway. So I think why my application here in Quebec was successful is because there's a really important Quebec part of the story that hasn't really properly been told. And I haven't really properly told it yet either, you know. The paper that I ended up writing that got published out of this research and that had been really focused on the Hammond organ and the Novachord and such things... I hope to still make some contributions in that respect. But I still think there is still a lot of missing history and general knowledge about the Quebec relationship with the Ondes and its impact. There's also important connections to make to the Quebec acousmatic or electroacoustic music scene. There's a guy named Gilles Tremblay who is a really important figure in the Quebec electroacoustic music scene who was an Ondes Martenot student, and in the late '60s he was using it in some of his compositions... So there's links to be made there.

DS: That's true, yeah. A bit more difficult in the UK. It's more like making something French more available, but it doesn't have a clear link to the UK.

OC: Yeah, you're right. There's like, except for Jonny, uh. Part of me has always wondered if... I've never been able to get it right. Sometimes I feel like when I write about the Ondes Martenot it feels a bit impressionistic, you know. Like Suzanne's relationship to the instrument, and the depth of her love and commitment, but also

the kind of way she speaks about and verbalises her elevation that it brings to her consciousness, to her kind of relationship with the rest of the universe, I mean she can get pretty almost new age-y about it but I also find it kind of profound, and to me it ties into broader questions around why are sound and music, just our sonic experience, important academic topics at all? (DS: Mhm.) It's hard, and I think there you get into maybe some of the phenomenological sort of ground, around what sound is as a means, as communication, as a means of being in the world, distinct from vision and touch and, but can be a source of insight into other phenomena. And if you look at some of Jonathan Stern's work, so he teaches media, he's our friend and colleague, and his first book was called *The Audible Past*, from 2005, 6, I don't know. It's a history of audio technology, and recording, and listening, but it's- you could say it's a social constructivist account in the way that it's trying to understand in a non-technologically determinist way not the impact of the tech so much as how the arrival of the technology was either preceded by a kind of opening up or simultaneously opened up a new way of thinking about sound, or, you know. So for instance the concept of audio fidelity didn't exist or wasn't possible before the arrival of audio recording, obviously. But even the notion of original versus the copy and the suggestion that there's a degradation was a part of how the technology was constructed. And I'm not sure I'm getting it quite right, but just to say that I think the impact of research on the *Ondes* can be significant if you tie it in with some of these other- what Jonathan has termed sound studies. This field is really blowing up right now. He put out the *Sound Studies* reader, not too long ago, it's an edited volume, and a lot of the articles are about the impact of various technologies around the way we come to understand, say, deafness, or the way we understand reproduction, or copyright. His most recent book is about the MP3, that's a different kind of thing. About how the MP3 as a technology assumes and thereby constructs a certain type of listening subject because of the way it was designed to assume a certain- a certain biologically determined capacity of the listener. So, the MP3 cuts out a bunch of frequencies humans that kind of we can't hear, and it takes away stereo differentiation. So it's intelligent compression that is assuming a certain model of perception which is universal. So again, he's a brilliant thinker, writer. I've always hoped that one day I could make those articulations... (DS: Yeah.) So, impact. I don't know if that answered the question, I feel like I kind of (DS: Yeah, some



things to think about) Yeah, I think also there's ways in which like, if you look at Martenot's legacy, which went beyond the instrument, and I think some would say at the end of his life he was more focused on the Martenot method, right, as where he was putting his time and energy, and a method which from what I understand was first and foremost in a practice of relaxation. (DS: Yeah) Which came out of a certain meditative practice that he had. Do you have a copy of Jean Laurendeau's book? (DS: Yes) Ah good, so it's covered quite extensively in there, the sort of relationship-

DS: And I've got a copy of *Se Relaxer* as well, yeah.

CM: Oh, you do? Oh, nice, oh ok, I'm telling you things you already know. So uh, and I wonder if the impact of the instrument and its relationships with other aspects of everyday culture, everyday life could be tied to that too.

DS: Yeah, that's true, if it can relate to other ideas-

OC: And practices, you know, in a social constructivist kind of way, like ways of understanding models of control around electronic music. In my mind anyway, there's a very strong tendency in a lot of accounts of electronic music, electronic musical instruments first of all to be technologically determinist in terms of the history they often refer to. I mean there's notable exceptions throughout, but.

Depending on how scholarly or not scholarly the source is-

DS: That's what I've been doing so far, going through the sources and seeing, what are they saying about it, and where is it going wrong, because not too many sources are completely correct.

OC: Yeah. And I think, and this is maybe a different argument, is that actually, the value for money... The Ondéa, say, if we were to buy one for \$5000, if it's going to be built as ruggedly as I believe it is, and if the relationship is as tight with manufacturers as it's going to be, with upkeep and repairs and whatever, is going to be very hard to achieve, which is very difficult to do with a vintage instrument, and in 12 years it's still going to be worth \$5000, if not more. Whereas any computer system that we would spend that much money on now, you can be sure would have depreciated. Any software synth that you buy that allows you to make those sounds and more will be history, big time, you know. And there's a tactility to the engagement with the instrument, which is becoming increasingly rare with modern sound synthesis techniques that are all based around the computer. Have you tried any of the plugin versions of the Ondes Martenot?

DS: I tried the app for iPad, Petites Ondes. There is an app, and obviously with an iPad it moves way too slow, but it's a nice way to, to introduce people-

OC: I know they made a software computer plugin version of the Ondes Martenot where they recorded every note, playing in different styles and stuff, like they do with many vintage instruments. But it's when you do that with keyboard which has a sound you trigger by pressing keys, it's another thing, Ondes Martenot. I've actually gone to the point of putting in my credit card number numerous times and just couldn't, I couldn't pay \$200 for this 'cause I just... I could go sample a record and get something similar. Maybe that's just snobbery on my part, but. I didn't really find that that project had a lot of promise to it, precisely because it's the control...

DS: It is, it is. That was actually a question I wanted to ask you, that I ask every single person. To someone who doesn't know about it, how would you define or describe the Ondes Martenot?

OC: Oh, ok. Well. This is the honest answer that I'd like to give you. The honest answer, and I hate when I do this, but I often say 'do you know of the Theremin?' And they say, 'ah, yeah, yeah', and I go 'you know, where you wave your hands around, like woo-oo-oo'. And then you have to bring them down from assuming that the Ondes Martenot is like that, say that the Ondes Martenot generates its tone with the same circuitry, so it can sound similar to that, but it has a keyboard, it has a *touche d'expression* which makes it very different to play. It has these speakers which change the sound a lot. So that's how I would fill in somebody who knows about the Theremin. Say, I'm a good boy and I don't go there, or the person I'm talking to doesn't know what it is, I say it's a very early electronic musical instrument that uh, generates a simple but very pleasing electronic tone which is controlled by means of the keyboard, so it's like a synthesizer or another keyboard you might see, but the sound parameters are very different and the control mechanisms for the generation of the sound are very unique. Especially, then I'll start talking about the *touche d'expression*. And then usually by the end I remember, 'oh yeah, and it's got this ribbon that you can use to slide between these notes. But for me it's not as significant as the *touche d'expression*, which I still find the most extraordinary thing. It's because I'm a DJ and I have this kind of relationship to that mechanism of playback. And then I'll often quickly explain the diffusers, and I'll usually focus on the gong, you know, because that's still such a unique, yeah. Does that answer your question?

DS: Yeah, completely. Something that you might be interested in is that I asked Jean Laurendeau the same thing, and he compared it to the synthesizers of the '60s, and then said 'but it's different from that'. And I said 'that's interesting, because you're comparing it to something that didn't exist at the time, (OC: Haa, yeah, yeah) so you're actually going back in time, so how would you have described it in the '20s and '30s?'

OC: Yeah. Then you could talk about the Theremin, did he talk about the Theremin?

DS: Not really, he sort of circumvents that-

OC: Yeah, they love to do that. I say they in a generalizing way, but-

DS: Well, your honest answer is exactly what I do. When I'm not really talking to any academics about my research, I do that.

OC: And a lot of people have heard of it! And then they often say, 'oh yeah, like on the Beach Boys', and then I'm like, 'well (DS: It's not exactly a Theremin) yeah, it's not exactly a Theremin', and then they're like, 'well, ok'. And this is what I mean, that sometimes the impact of the instrument is hard to express to people who are really ignorant about electronic music history, or even what an electronic musical instrument is compared to an acoustic instrument.

DS: I think what got me my PhD was the fact that I could articulate that there was some sort of momentum going on. I could say, 'well, there are these things going on below the surface that are creating some sort of momentum, so it's the time to do some research in the English language'.

DS: Can you tell me about the research that you've already done, you mentioned research-creation?

OC: Yes, I was going to bring that up. Another way that I've justified my work on the Ondes Martenot was, it worked very well as a subject matter for research-creation approach, which is — I'm getting increasingly tired of calling it this, but — it's kind of an emerging method for humanities research. It's maybe a more longstanding tradition in fine arts, but even there, it's kind of emergent, and Quebec is at the forefront of spelling out what it means, and providing support for it.

DS: Is this similar to practice-led research?

OC: Yeah, yeah. In fact, I wrote a paper with a colleague that was published in 2012 which makes comparisons with practice-led research in fine arts PhD programs and tries to link it to those movements with some Canadian particularity, and gets into details around some of the misunderstanding around what it should entail, and trying

to be a bit more- it's called- if you look up 'research-creation family resemblances' I'm sure you'll find a copy. It's with the Canadian Journal of Communication. So the grant that I got to do the Ondes Martenot research was actually, the title was '*Établissement de nouveaux chercheurs-créateurs*'. Quebec offers *établissements de nouveaux chercheurs* and for a much smaller group of people you have *établissements* for *nouveaux chercheurs-créateurs*. It's sort of like, you get a tenure-track job, to sort of get you going, kind of opportunity. And the funding body recognises research creation as a category. It can be a variety of things, but I guess the sort of foundational notion that it's scholarly research which is either based in or deeply informed by the creative process. There is often two kind of parallel trajectories to it, a more or less standard research-oriented trajectory, and on the other plane is the creative initiative. For the Ondes Martenot project, the pitch and the ambition was always to be researching the instrument by playing the instrument, making recordings of myself playing the instrument and others, and then bringing those recordings back into my own practice of sample-based music composition. (DS: Oh, I see) And also promoting students who I'm working with to do similar things. So one of the achievements of the project was an EP of electronic music compositions that were developed out of playing and sampling and remixing. Mostly original recordings that we made of these instruments, but also commercial recordings, so I have a collection of records which I gave to a local DJ and producer. [gets phone call] Yeah, so that's the method, was to, again not necessarily as the main driving force but as a sort of dual purpose objective to be accessing instruments and playing them, but that's the catalyst for interesting discussions, especially for ethnography. You know, meeting people, playing instruments, talking to people, sharing records. It's such a way to get filled in on- instead of a historical [?]. I think also, too, by playing the instrument, you come to understand why it would be something that Suzanne Binet-Audet would be so passionate about and devote her life to. From a tactile point of view and a subjective audio point of view, because you know, you actually felt it. A lot of writing that looks at sampling for instance, is written by aesthetically astute academics who have probably never played a sampler. I'm not saying that that means that the research is invalid, but I think there is a place for research which is informed by first-hand encounters with the devices. Even if it's a bit of a novice encounter.

DS: Yes, and I think recently there has been sort of a gradual appreciation of the

subjectiveness of research again, you know, where research doesn't always have to be completely objective and completely dry, and that there is a value in people's personal views and experiences-

OC: Especially if there is a reflexivity that is integrated into the study, you know, so and again like, issues of consent and ethical protocol tied to this. You formalise a conversation by bringing out those papers, and it all still means that there is a reflection on your part of where this story is coming from and what it may or might mean to me, or to you, or... that I think makes it legitimate as opposed to just well I do this because I love the instrument, I've been playing the instrument for a long time, and I'm going to spew a bunch of my own opinions. (DS: Mhm) 'I've talked to lots of people, dropped some names of famous people who I know,' that kind of research for me is not that interesting. So yeah, does that answer the question more or less? (DS: Yeah) But research-creation is a very vibrant scene in Canada right now, it's really continuing to emerge and take off, and become more refined. Like I say, for a long time it's been tied to the fine arts, and there's this institute at Concordia called Hexagram which is a research network, and it's devoted to research-creation approaches.

DS: So is this still ongoing?

OC: It's kind of finished, I submitted the final report. What came out of it was- there were some compositions created which I had to put online. There's actually an archive, I'll give you the address for this: it's [archive.collectingdust.org](http://archive.collectingdust.org).

Collectingdust.org is the website for my Ondes Martenot research but I got hacked a couple of years ago and the whole thing got erased. I haven't been able to completely rebuild it. We had a bunch of vinyls, mostly from eBay, that we digitized, the bulk of which are Ondes Martenot recordings, but there's also Novachord recordings and Hammond organ recordings and Theremin recordings and stuff, too. And that was one of the outcomes, you know, a database that I continue to feed. I also had bequeathed to me a bunch of reel-to-reel tapes and cassette tapes and documentation and schematics on the Ondes Martenot I've been trying to digitize as well, just archive for the future. It's an enormous project, and I sort of got stuck halfway and the money ran out, and I don't have research assistants I can pay to do that work anymore. But you know, stuff's not going anywhere. The other thing is I bought a Hammond Novachord for \$600 from this guy in New Hampshire. There's very few left that aren't in the garbage. I got one that had been

sitting in a barn for ten years, and I know I can solder things and understand circuits and stuff, but I'm not an electrical engineer and never been trained. But the circuitry for the Novachord is very simple, it's not huge.

DS: Is it the one that looks like an upright piano, very wooden-

OC: Yeah, exactly, and like 160 vacuum tubes and thousands of capacitors, and the capacitors are all large paper and wax capacitors... all of which needs to be replaced. The tubes actually are fine, the wiring is fine, the chassis and everything were all built to last. But it's actually the capacitors that determine the tuning [off-topic conversation about the Novachord and Hammond SoloVox and Moog]

DS: There is one other question I was interested in, that I also asked Jean Laurendeau, that's a question around sound connotation. It's already been kind of answered, which was that the sound of the Ondes Martenot, the pure onde timbre, that widespread and most used, etc. And I was wondering why that was, because there are so many different timbres to use-

OC: That kind of soaring like woo, very crystalline, very sine-wavey-

DS: I was wondering with all these things available why that was... but Jean Laurendeau told me this was the purest base wave that is used, and it is modified to produce all the other tones, which sort of made sense. But-

OC: And I'll make a small posit: that's why the Ondes is so historically significant, because in the 1920s, making a sound from an oscillator, more often than not it was [makes nasal sound], it was very buzzy, very square wavey. But because of the heterodyning mechanism that both Theremin and Martenot used, there was a sweetness to the base timbre you didn't find in other instruments.

DS: And Jean Landry even called it superheterodyne...

OC: Could be, he'd know better. I'm not exactly sure what superheterodyning means. You know what heterodyning is? (DS: Yeah, beat wave-) Yeah, these sort of supersonic waves that are brought into our-

DS: So maybe the super comes from supersonic.

OC: Maybe. But the superheterodyning radio was a technology that was around at the time, so maybe the super part is just a removable prefix, or maybe it distinguishes something.

DS: So yeah, the sound connotation, well in the '20s and '30s it was the sound of the future, and it was used in lots of ways where the connotation was more either very ethereal and otherworldly, or more sci-fi in the '50s into the '60s a little scary... So I

was wondering what the value of the sound would be today. Can its connotation still mean all of these things? Because now those types of sounds are almost outdated, almost look back to the '50s and '60s in turn. And I already got a bit of an answer from Jean Laurendeau, who said that music is always going to have a category of ethereal-ness, people are always going to try to put into music what you can't put into words. I was wondering what you thought about this.

OC: This will be a very spontaneous answer to your question but I can break it down into different components. First of all I find that soaring sound of the Ondes Martenot really cliché at this point. There it is. The kind of sweet, echoey version that they often use. There's a Tristan Murail piece that the Ensemble d'ondes love to do called *Mach 2.5* that uses that [sings] radio sound. Anyway. I used to love it and now I hate it and I'll love it again I guess. It really dates the Ondes. But I've heard Suzanne Binet-Audet play the Ondes Martenot- and in fact I'm remembering outcomes of my research: one of the first things that we did was we went to a studio here in Mile End called the Hotel de Tango, which is just up the street, where a lot of indie groups out of the Montreal scene like Arcade Fire recorded. Beautiful really warm inviting studio, they still record on tape, vintage microphones, etc. We went in there and made recordings of Suzanne mostly improvising, and when she lets herself go on that thing, you've honestly never heard anything like it. She spent a lot of time in the bass register, she uses the gong a lot and she gets a kind of gravelly growly kind of sound, especially with the gong, that kind of rides on the edge of too much, the equipment, the room, everything starts to shake. She says actually, you can ask her about this, she's very conscious of what type of room she plays in, because if the room is too wet, like too reverberant, the tendency for kind of feedback resonances to build, from especially the way that she plays and the feedback into her instrument, there can be feedback loops that develop through the resonators and in the instruments themselves, and she worries she's going to break things, like in the instrument. I guess she's had, the gong is getting increasingly more fragile, because the feedback is happening and it's rattling and... All that to say that I think there is a tendency within the repertoire, and by keeping playing the same repertoire, for certain sonorities to be repeated, and unfortunately they can make the Ondes Martenot sound a little more cliché, even if it can have its moments of 'oh, I haven't heard that in 50 years', but, or 30 or 20. But then when Suzanne, and arguably when Gen'viève and Marie go to town, they're all so extraordinary. I haven't heard Jean

play as much. But when they really let themselves go and improvise, they can make amazing sounds happen that I think are still really rich. Precisely because the portamento between notes and the sophisticated envelope control they can get every sound. Especially the expressiveness of the anticipation and whatever they can build, the tension they can build through that *touche d'expression* is still really relevant and really compelling. The short answer, and I don't think any of the ondistes would say this, but can you imagine as David is inventing- Unfortunately I don't think the *touche d'expression* is going to send MIDI signals, but can you imagine if there could be a sophisticated enough control voltage or signal that would come from the Ondes Martenot that would allow you to play other sounds on Ondes? For me who's into sample-based music, if it was more of a digital controller... it just doesn't exist, I mean, there's controllers coming out- every company, there's this race to have the most innovative controller, but nothing like this has even been possible. (DS: Not even the French Connection.) No. And so when I play samples on a keyboard, you can control the pitch and stuff, but it's a switch, it's like, on-on-on. Even if you wanted effects, I guess it could be done, but the instruments are not being designed to take a sound and have it start to play and then to be interrupting it but within the playback of the sound. The way with the *touche d'expression* would like- a crossfader on a DJ mixer would allow you to do that. So to me there could be a whole other way of manipulating sounds, not necessarily that are being generated by the Ondes, that could be relevant and exciting and all of that.

[01:33:35]

DS: That ties back into the question that I've been asking myself, which is what is the most important feature of the Ondes Martenot, without which an instrument would no longer be an Ondes Martenot? Your answer is definitely the *touche d'expression*. (OC: That would be my answer, yes.) And it's especially interesting that you sort of- that the *ruban* is not so-

OC: It's funny, yeah. I used to play the trombone, too, so you'd think that I'd find that appealing, but. And I do, but it just doesn't draw me in.

DS: If that was left out of a cheaper model, as long as the *touche d'expression* is there and a way of controlling pitch, that would be an Ondes...

OC: It would be, and in fact he invented models like that. He had... the only time I've ever seen an Ondes Martenot for sale on eBay was a student model of Ondes Martenot. I showed it around the crew here, because I was thinking of buying it, but



they wanted a crazy amount of money for it, and it was broken and out of tune, but it had no- only the keyboard and *touche d'expression*, and it was sort of a tabletop thing.

DS: Do you know when that came out?

OC: It was non-transistorised (DS: OK), but it wasn't one of his earlier prototypes, because he was trying to market it to different people. This was more like a student, like a school model, so probably around the '50s, maybe? It would have been a contemporary of the model 6. I'm pretty sure I took pictures of the eBay site.

Actually Jean himself has a student model in the basement. It's wrapped up and locked in a case. He pulled it out one day when I was over for dinner and I was like 'whaat'. Maybe one day it will be made accessible, but for now it's in the basement. There were other intriguing models. But I think this one was more, let's make this cheaper by removing this.

[conversation about supervisor]

[someone interrupts the conversation]

DS: Anyway, so I hope to use a lot of Actor-Network Theory to use it as a framework to talk about the Ondes Martenot.

OC: I think that's a really productive line. For instance, I think it could be argued quite successfully that the Ondes Martenot has a kind of aura of agency about it. When they're playing their Ondes, it rare that someone like Suzanne would say 'I'm in control', you know. It's like a relationship between the instrument and the sound it's generating, and for her case it's her channeling of a kind of universal oneness. And maybe it's a feminised kind of- I mean I say that in the full knowledge, I don't mean to sound [?] but I think that the instrument in itself, it generally has an almost feminine tone of aura placed onto it. When you look at the way it's used in soundtracks, it's often associated with like, *leitmotif* for female characters, and David Madden in his paper talks about how like Boulez and those guys were like, 'oh it's not hard enough, it's too expressive' — disparaged it on that ground. (DS: Yeah) So contextualise it how you will, but I think that the aura of the Ondes as its own active force within music-making, with Actor-Network Theory a kind of application of modal agency to the instrument really works. I was just thinking, the whole Japanese scene around the Ondes Martenot is like... Caroline may be able to tell you more. I think they have their own production of the Ondes Martenot underway in Japan. So as an instrument it manages to like, as the *ondistes* like to

say, strike people. They become almost activated and propelled to engage with it and follow its legacy because it just grabs you. Like you and I. You're just forced to make something happen. In actor-network theory there's maybe something there, not to trivialize what Actor-Network Theory boils down to, but to me I've always thought of it as the foundational assumptions that uh (DS: That everything can have agency) Yeah. One of the things we did at the Hotel

Besides recording Suzanne improvising and getting her to play examples of the different timbres that the Ondes can achieve, is we did improvisation together. So I was playing my turntables and I had this weird ice [?] that I was playing Her daughter, Kareya, who she may have told you about, was laptop sort of doing microsampling and remixing, and Dave Madden was playing guitar. And we recorded hours of material. And then we excepted a couple of pieces which I put one of them out, but Caro used it in her film, as the end credits. I think we called it Far West. And I think Dave has also improvised with Marie Bernard at the launch of Caro's film, and has written this paper on restoration and conservation. I'll give him a call, see if he's available to meet with you.

[end of interview]

## Appendix G: Interview with Jean-Loup Dierstein

Dierstein's workshop, Paris, 14 September 2017.

JD: 2006 j'ai été approché par Monsieur Thomas Bloch pour réparer ses ondes.

DS: Il a un modèle 7 non?

JD: Ah je sais pas qu'est-ce que c'est. Pour moi c'est pareil, quoi. Il y a des petites choses qui changent à l'intérieur, mais... transistor, je crois que c'est ça. Et donc je lui a réparé, et puis ensuite il est venu il a donné mon nom à plusieurs de ses collègues et puis ils sont venus ici, puisqu'il y avait personne. Et moi je me suis, bon, j'étais l'homme de la situation donc. Ca m'était destiné, ça coulait de source! J'ai travaillé là après, j'ai été demandé au conservatoire où il y a plusieurs instruments, je les ai entretenus. Au cours de ces réparations, j'ai eu quelques ondes qui sont arrivés chez moi irréparables. Irréparables parce que la carte, les composants complètement obsolètes, enfin bon. J'ai fait une carte de remplacement que j'ai posé dedans, elle marche très bien, et puis j'en ai fait comme ça plusieurs. Et puis petit à petit est venu l'idée, en parlant avec les ondistes, d'en refaire une. Je me suis dit comme j'ai pratiquement fait ce qu'il y a dedans et je vais faire ce qu'il y a dehors... je me suis mis à faire ça. Donc je connaissais Monsieur Martenot, je lui faisais ses réparation, et bon on a discuté! J'étais partisan de faire revivre l'instrument tel qu'il était, en bénéficiant des nouvelles technologies. Sans trop! Attention, hein, je n'ai pas voulu faire du numérique- à mon avis, c'est aberrant de faire du numérique là-dedans, parce que avec de l'analogique on arrive très bien à faire des choses qui fonctionnent bien, qui sonnent. La seule petite concession j'ai fait au digital, c'est le clavier. C'était pas pratique le contact, c'était tout le temps sale, etc... Donc je me suis dit je vais faire un système avec des magnétiques: quand la touche s'approche, il faut faire ON/OFF. J'ai fait un petit scanner qui regarde le clavier sans arrêt puis la première note qui est appuyée, hop, elle est mémorisée. Je passe par un dag (?) qui donne une tension commande de l'oscillateur, c'est tout, ça marche bien c'est parfait! Le vibrato

après c'est de l'analogique, on fait des mélanges! Puis là j'ai utilisé des techniques je connais depuis tellement longtemps! Pour moi c'était relativement facile.

DS: Logique, en fait?

JD: Oui, et puis il y a de la littérature dessus.

DS: Comment est-ce que vous voyez l'onde Martenot en relation des autres synthétiseurs ? Est-ce que c' est une mélange d'autres idées des certaines autres instruments? Est-ce que vous pouvez faire des liens avec d'autres instruments?

JD: Moi ce que je trouve formidable de l'onde Martenot c'est l'interface physique. La bague, le clavier mobile, tout ça c'est formidable. D'ailleurs quand j'ai fait mes dessins de mon onde j'avais un ARP 2006, vous connaissez le 2006? J'en avais un ici. Je sortais les commandes de mon onde et je voyais le rapprochement entre l'onde Martenot et les synthétiseurs.

Ds: Oui, c'est très intéressant.

JD: A mon avis ça a développé, en faisant des petits modules qu'on pourrait rajouter pour faire d'autres timbres. On bouleverserait rien; on garde, on en conserve ce qui existe ci et là, et puis on peut faire ce qu'on appelle des expandeurs. On pourrait faire du ring modulateur, des choses qui enrichissent l'instrument.

DS: Oui, oui.

JD: Je suis persuadé qu'il y a des trucs formidables à faire! J'aurais voulu vous présenter le dernier-né mais je l'ai pas fini, je vais le terminer dans un petit mois.

Tout ce que j'ai critiqué, je suis mon autocritique, j'en ai fait 20, j'en ai fabriqué 20, et là je suis en train de fabriquer 21, 22 et 23.

DS: Donc juste pour clarifier, donc vous avez fait 20 ondes et vous allez faire 23 en plus? JD: Non, non, je suis en train de faire la 21e, 22 23. Moi je les fait presque à la demande, hein.

DS: Est-ce que vous avez beaucoup de demandes?

JD: Non. J'en ai peut-être deux, de 4, ça coûte cher, hein.

DS: C'est autour du monde?

JD: Ah oui, partout partout dans le monde. Je les ai vendues plus à l'étranger qu'en France. J'en ai vendu cinq au Japon, trois aux États-Unis, une au studio Dreamworks

pour les films. Deux en Angleterre: la première j'en ai vendu à Jonny Greenwood, et puis j'en ai vendu une à l'Australie, à Monsieur Gotye.

DS: A Gotye, oui.

JD: Il est d'origine belge, hein?

DS: Oui!

JD: Et puis j'en ai vendu 3 ou 4 en Allemagne, et puis j'en ai vendu en France: à Christine Ott, elle en a une, une de ses élèves aussi.

(DS: Thomas Bloch) Thomas Bloch il en a une.

JD: En France j'en ai pas vendu beaucoup.

DS: Pas encore...

JD: Non, mais ça va venir.

DS: Et au Canada?

JD: Non. Un moment j'ai été approché, il y a longtemps, mais non. Ils ont l'Ondéa là-bas qu'ils fabriquent. Je pense qu'ils vont prendre ça. C'est pas mal, l'Ondéa.

DS: Est-ce que vous avez essayé?

JD: Oui parce que je répare celle de Nathalie [Forget].

(DS: Oui)

JD: J'ai réparé celle de Christine [Ott], elle en a une.

DS: Et les nouvelles Ondéas?

JD: Je n'ai pas vu. il n'y a pas beaucoup de clients, hein, à mon avis. Peut-être les conservatoires, mais les conservatoires ils ne sont pas très fortunés. En France il y a des restrictions budgétaires alors tout ça c'est pas facile. On en parle au Conservatoire de Paris et encore c'est pareil ils veulent les réparer il y a là 4 aux transistors et deux à la lampe. Mais c'est la lampe qui marche.

DS: Je l'ai vu chez Nathalie dans sa classe, et les haut-parleurs les diffuseurs, c'était très intéressant toutes les modèles différentes.

JD: Et au Conservatoire ils en ont une avec la carte là, le 305.

DS: Votre carte, mais le reste..

JD: J'ai regardé le reste.

DS: Est-ce que ça fait travailler beaucoup sur le tiroir? la touche?

JD: Oui moi j'ai une touche que je fabrique. Il y a une touche là-bas chez eux, le 307 que j'ai fabriqué. C'est pas définitif ça: là je vais avoir un truc parfait [newest model]. ce que je peux remplacer sur les instruments j'ai fait.

DS: Oui c'est un grand-

JD: Un grand pas en avant. Et là je vais pouvoir peut-être, on a discuté avec Nathalie, on va remplacer, sans ce que soit destructif, les sacs. Parce que, comment il s'appelle, au musée là..

DS: Stéphane?

JD: Stéphane, il a fait un sac mais c'est pas monté en production, ca.

DS: C'est juste des recherches?

JD: Voilà. On pourrait refaire, mais moi j'hésite parce que -

DS: C'est pas très durable?

JD: Non. Le problème ça va être de les faire. Il n'y en a pas un qui est pareil; ça s'use. Il faut peut-être trouver ou faire une machine qui le fasse.

DS: Je pense que Jean Landry, à Montréal, a fabriqué une touche dont les ondistes sont contents. C'est aussi une sorte de- je ne sais pas comment ça marche, mais peut-être avec aussi le mécanisme de l'Ondéa, parce qu'ils avaient travaillé ensemble...

J'ai parlé avec plusieurs ondistes et ils m'ont toujours dit que la touche, c'est le cœur de l'instrument.

JD: Ah oui, tout à fait. Moi je pense que la difficulté de reproduire — est-ce qu'on peut reproduire la touche? — c'est que la personne qui le reproduit doit savoir se servir de la touche. Il faut être presque interprète pour comprendre, parce qu'il y a plein de petites choses! Moi j'arrive à force de parler avec les ondistes, enfin je joue pas mais je pratique, j'ai le geste, et quand ils parlent je sais ce qu'ils veulent dire, moi-même je le sais. Et là je pense que je l'ai trouvé, j'ai trouvé la solution. Parce que la sensation du sac c'est fondamental, cet espèce de... Il faut absolument produire ça. L'avantage du sac, c'est qu'il fait tout en même temps. Il a la fonction de toucher: plus vous appuyez fort, plus ça sort fort, mais d'une certaine façon. Il fait le VCA, le contrôle voltage, il a tout en lui-même. Alors que si vous voulez faire un truc de remplacement, vous êtes obligé de mettre un controle voltage, un VCA. Il

faut mettre en œuvre un système électronique qui reproduise la courbe, et puis il faut trouver le physique, la façon physique d'appuyer. voilà. Ça c'est trois choses: il faut arriver à les mettre de manière à obtenir le sac.

DS: C'est un tour de force!

JD: Il faut être dans le sac, quoi. Moi au début, j'ai rencontré un monsieur, je ne me souviens plus de son nom, il parlait de percuter: d'accord, on tape, ça fait fort. Mais je ne me rendais pas compte de ce que c'était: percuter, le filet... C'est à force de pratiquer qu'on se rend compte! Après il faut mettre en œuvre. Mais déjà soi-même, savoir que c'est bon.

DS: Combien d'années avez-vous appris la technique onde pour mieux comprendre les ondistes?

JD: Les comprendre, c'est une chose, mais leur répondre c'est autre histoire. J'ai compris qu'il y avait un truc chez les gens là, il fallait se mettre à l'écoute, mais comme j'avais déjà travaillé dans la musique on parlait un peu la même langue. Alors que je pense qu'il y a des gens qui notamment ont fait par exemple le numérique de Martenot; même quand ils ont fait ça, pour faire un truc comme ça il faut être dedans. C'étaient des électroniciens, on leur a dit 'je veux un ordinateur qui fait ça.' Et l'Ondéa, c'est pareil.

DS: C'est ça qui m'intéresse beaucoup: c'est la relation entre l'évolution des ondes, de la technologie, et les gens qui l'influencent.

JD: Oui, je comprends. Je pense que ce qu'a fait Martenot, comme ça, même si on va pas dans le détail, il faut pas y toucher! Il faut rester dans cette conception. C'est comme les violons, au 17e siècle, ça a pas beaucoup changé. On a amélioré les cordes, il y en a qui disent que le boyau c'est mieux que ce qu'on fait maintenant, mais on a amélioré le système de collage certainement, et c'est le même pour le Martenot. Il faut corriger ça, le clavier les contacts qui crachouillent, le vibrato, les fils, il faut garder le principe mais il faut l'améliorer.

DS: Avez-vous l'opinion que les ondes Martenot, c'est un instrument stable [stable] et c'est juste les détails qui ont changé?

JD: Il faut rester dans le- parce que en plus il y a une technique. Moi j'en avais parlé avec Madame Hartmann, le tiroir, je l'ai respecté personnellement, scrupuleusement, les distances.

DS: Les distances c'est très important, oui!

JD: Parce que d'abord quand on passe d'un instrument à un autre, il faut pas être dérouté par des changement de côté. Ils sont quand même des virtuoses, c'est très sensible. C'est comme des violoniste, l'archet, vous mettez 1 g de plus, pour un néophyte 1 g c'est rien, mais pour un musicien c'est très très important. Et là c'est pareil. Alors ce qu'il faut c'est arriver à faciliter le mouvement de la bague, je crois que c'est arrivé, avec l'Ondéa, très agréable. Mais le clavier, il faut l'améliorer, le mouvement du clavier, il faut l'alléger aussi, de manière à ce qu'on ait besoin de très peu de force pour le faire bouger. Puis l'Ondéa a fait des erreurs, c'est que le mouvement du clavier, quand on fait du vibrato... [makes movement that indicates one has to make an effort to pull it side to side].

DS: Donc on doit faire le léger?

JD: Puis lui permettre- pas trop, hein. C'est justement à force de pratiquer- moi je sais ce qu'il faut faire. Il faut mettre tellement de mouvement par ici par-là, et vous arrivez à avoir un instrument extraordinaire.

DS: Est-ce que vous pensez que l'onde Martenot, c'est un instrument important? Ça a besoin de beaucoup de gens, de temps, d'argent, c'est très difficile de reproduire et de réparer. Est-ce qu'il vaut la peine? Est-ce que c'est un instrument spécial?

JD: Le problème c'est que les ondes Martenot, on pourrait pas faire un onde Martenot bas de gamme, pas cher. C'est impossible. Parce que d'abord, c'est un instrument conséquent! Il faudrait le sortir à un grosse quantité pour justement avoir des utilisateurs, pour le faire vivre. Un violon on pouvait en acheter... je sais pas les prix, 50, 100 euros-

DS: Pour l'étudier.

JD: Oui. Mais les ondes... à part celle du Japonais-là, l'antithèse de l'onde. On ne peut pas apprendre l'onde Martenot là-dessus. C'est plein de défauts. Quand vous allez passer là-dessus, vous allez pas vous en sortir. Moi, c'est ce que je pense. C'est



comme quand on joue avec des pianos numériques bas de gamme, pour passer au vrai piano après, vous apprenez de mauvaises habitudes. Il faut qu'il y ait des écoles, il faut qu'il y ait des compositeurs, il faut qu'il y ait des écoles de musique qui pratiquent ça. Parce que c'est pas facile à jouer.

DS: Non, non. Est-ce que vous pensez est-ce qu'il vaut la peine?

JD: Oui, c'est une passion. Bien alors j'ai une structure, je suis quasiment tout seul, j'ai des gens, quelqu'un qui travaille avec moi qui a son compte, qui travaille pour lui mais on travaille ensemble. Il y a une petite jeune fille qui va venir tout à l'heure, elle m'aide à faire les cartes. [shows me] Donc en gros, 2 personnes qui m'aident, on fait des ondes, on se parle, c'est pas un problème. J'ai un menuisier qui m'aide à faire la boiserie, qui fait ça. J'ai des tôliers, j'ai un autre artisan qui fait les châssis, comme ça. Moi je fais les plans, tout. Puis ils ont des outils spéciaux et ils me font tous les circuits imprimés que je vais faire. C'est facile, quoi. Tant qu'on ne me demande pas de faire 10 ondes par mois, ça va.

DS: Oui [laughs] c'est intéressant.

JD: Mais si c'est important parce que je ne peux en faire qu'une [onde] par an. Les investissements je les ai fait il y a longtemps. J'ai fait mes touches. J'ai fait faire les moules. (DS: Ah, ok.) J'ai des moules donc je peux avoir des touches. En fait c'est ça le plus important, c'était les touches. J'ai avoir fait les mêmes touches que Martenot.

DS: Le même type de plastique?

JD: Oui, pareil. On voit pas la différence. Un gros davantage des touches Martenot c'est que c'est léger, qu'on fait bouger le clavier. Martenot il a fait ça, donc moi je fais pareil. Martenot, c'est un modèle, un étalon. Il y a plein d'élèves, ils sont tous appris sur des Martenot. A part maintenant avec l'Ondéa, et encore. Moi, je reste dans l'esprit Martenot. J'ai été bien dressé par Madame Hartmann.

DS: Dressé?

JD: C'est elle qui m'a dit, il faut le faire comme si, il faut faire ça, il ne faut pas faire ça... c'était quand même 'madame' ondes Martenot. Professeur au conservatoire, c'est la référence. Elle a connu Martenot, elle a connu Messiaen, elle fait partie de la mémoire. Une vraie mémoire, parce il n'y a pas d'intermédiaire. C'est elle

l'intermédiaire entre des anciens et les modernes. Donc il faut l'écouter. Quand elle donne un des cours, c'est de la gestuelle, les mouvements, la position des mains. C'est elle qui dit 'faut pas faire ci, pas pas faire ça'.

DS: Je pense que le procès de Maurice Martenot aussi était une collaboration avec les ondistes-

JD: Oui surtout qu'il y en a eu des prestigieux. Moi j'aime bien en discuter. Nathalie Forget aussi, elle... mais elle c'est une élève de Madame Hartmann. Elle poursuit la conservatoire, ça veut dire ça ce que ça veut dire, quoi.

DS: Puisque l'Ondéa nouvel sera un peu plus populaire et que les ondistes en achèteront une pour jouer au conservatoire à Billancourt, est-ce que vous serez la personne pour les réparer?

JD: Si on le demande. Pour l'instant commercialement nous sommes en concurrence, mais bon. Si j'avais 20 ans de moins, j'aurais dit non non, mais bon.

Ce que je vois dedans je ne veux pas le faire, moi. Donc je ne vais pas copier [laughs]. Moi je veux vraiment pas faire des ondes comme ça. Je ne voudrais pas changer, (en général). Des petites choses, quand même, mais...

[is distracted by phone, then shows me photos]

Ça c'est la nouvelle ça c'est le prototype de la nouvelle au conservatoire. Vous voyez, je n'ai pas changé les designs, hein?

DS: Donc c'est sur lequel que j'ai joué moi-même le mardi avec Natalie?

JD: Non non c'est la mienne, elle est en cours de fabrication.

DS: Ah c'est le nouveau (!)-

JD: C'est le nouveau modèle. Mes photos ne sont pas excellentes, hein. C'est dommage, on ne voit pas bien les pieds. Ah, voilà. Donc j'ai gardé les pieds droits, c'est pas mal.

DS: Est-ce que c'est un peu plus compact?

JD: Non, ça fait 20 par 1. C'est pareil. Sauf que là c'est moins haut. Là j'ai fait une petite enceinte.

DS: Donc ça n'a pas changé beaucoup, mais quels sont les détails-?

JD: Plus léger. (DS: Ah.) En fait quand est-ce qu'on voit là, ici c'est une feuille de bois avec de l'aluminium derrière. Devant aussi. Le châssis en dessous, c'est de l'aluminium aussi, on ne le voit pas. Il y a une toute petite pièce de bois en dessous pour faire joli. Et les pieds j'ai gardé en chêne. On a l'impression, enfin c'est le sentiment j'ai, que c'est une Martenot 'de maintenant'. Une petite évolution comme ça. Elle est très fine, très très fine. Le tiroir, c'est pareil. J'ai mis des vraies glissières (DS: Ah oui) [opens the drawer of one of the ondes Martenots in the workshop] Celui est encore pas trop mal, mais il y en a des autres [laughs] c'est vraiment...Maintenant j'ai les tiroirs, ça coulisse bien. Tout ça c'est pareil, j'ai gardé exactement- Martenot, pour moi il a mis les potentiomètres à l'envers [shows sliders in the drawer]. Vous faites plus fort quand vous vous êtes là. En général quand tu fais plus fort c'est comme ça. Ah oui. Et là c'est pareil, c'est plus fort quand tu fais ça. Mais ça je l'ai gardé encore.

[interview interrupted by Jean-Loup's assistant]

DS: Donc mes recherches, j'avais dit, c'est sur l'évolution de l'instrument et la relation avec le social, les gens, et comment est-ce qu'ils ont influencé les design des autres-

JD: Moi, non. Je n'ai reçu aucune demande à ce sujet. En fait, les ondistes ne sont pas très accessibles à des changements, ils veulent la même chose.

DS: Est-ce que vous pouvez me dire en quelle année les ondes sont devenues un instrument stabilisé, et que dès ce moment-là tous les ondistes voulaient ce modèle?

JD: De toute façon, moi j'ai toujours connu les ondes avec des défauts avérés par les ondistes. Ils étaient toujours en galère, en disant, est-ce que ça va... Madame Hartmann par exemple, quand elle joue un concert elle en a toujours deux.

DS: Comme les Mellotrons.

JD: Oui, oui. Moi j'ai toujours des récits de Madame Hartmann parce que je la connais bien, des problèmes au dernier moment, des pannes pendant le concert, des trucs... ça ça a été toujours la crainte, l'angoisse des ondistes. On essaie de faire des trucs qui tiennent bien, quoi, c'est pas facile. Mais sinon au niveau de design, il y a pas eu de demande. A mon avis ils paraissent un petit peu recroquevillé sur eux, ils

ne sont pas très ouverts. J'ai le sentiment que ça va doucement. Dès qu'on propose une petite nouveauté... parfois c'est justifié. Par exemple, j'ai placé sur mes nouvelles ondes à l'intérieur une réverb numérique. En discutant avec les ondistes, notamment avec Nathalie Forget, je découvre que c'est passé, le numérique, ça fait pas ce que fait Martenot. Mais il y a un compromis des deux. La résonance Martenot, il y a des problèmes de fiabilité. On est pas sûr que ça va marcher tout le temps, est-ce que le haut-parleur va pas être décentré? Il y a cet argument-là, alors que le numérique, ça marche quoi, ça fonctionne. Puis, avec Nathalie, moi j'utilise une marque de petites boîtes comme ça, off, c'est très bien. Et avec l'ordinateur on peut les corriger, les trucs. Donc on est en train de se rapprocher- (DS: Chercher les timbres...) voilà. Et elle m'a dit, ça, c'est beaucoup mieux. Alors on va y continuer à changer pour se rapprocher. On doit être conscient, ça ne remplace pas l'original. C'est une technologie très particulière qui d'ailleurs a été trouvée dans les studios d'enregistrement. Ce sont des plaques qui entre vibration, Martenot c'est ça, il y a des ressorts en bronze qui sont reliés au haut-parleur et tout ça, ça vibre. Ça fait une très belle réverbération.

DS: C'est la question: conservation ou utilisation?

JD: Et bien au moment on peut faire un choix, ça dépend peut-être aussi des morceaux, des partitions. Et les partitions on a besoin d'un peu de réverbération, elle est en arrière-plan, c'est pas nécessaire d'avoir un réverb Martenot. Voilà. Et puis aussi, Nathalie elle fait des concerts jazz rock, d'avoir une réverb numérique qui est bien réglé, ça va bien faire l'affaire. Et puis elle s'affranchit des soucis. C'est comme, on arrive aussi à faire ça, avec le gong. Mais le gong, j'avais trouvé une solution. Je le fixe sur le moteur, ça se transporte assez facilement. Le son n'est pas tout à fait pareil, un peu plus aigu, là y'a peut-être à chercher. Mais c'est pareil, ce sont des enceintes qu'ils ne faut pas déplacer.

DS: mais la nouvelle génération peut utiliser les nouveaux trucs et ils n'ont pas connu les autres...

JD: Mais il suffit qu'ils les entendent pour qu'ils les veuillent: mais moi je veux ça!

Mais non on peut essayer d'améliorer ce qui a été fait, il faudrait pouvoir démonter-

par exemple quand on parle du métallique, ce qui est redoutable c'est quand ça tombe donc on peut peut-être trouver des solutions. Je pense qu'il faut chercher, tant que j'ai pas fini ma dernière-là, je continue à m'occuper de ça. Mais tout en restant dans le domaine Martenot. On pourrait faire aussi des métallique de tailles différents. on peut mettre aussi un micro sur le gong et leur amplifier. Ce qui fait qu'on pourrait envoyer, utiliser un amplificateur de faible puissance pour jouer doucement, de façon à éviter toutes les distorsions, récupérer le signal et l'amplifier.

DS: Oui j'ai parlé avec Nadia aussi qui était très intéressé par des nouveaux timbres, tout le temps, et il y a déjà beaucoup beaucoup de timbres à utiliser pour faire quelque chose de nouveau, mais encore, c'est pas suffisant, on est en train de chercher plus!

JD: Oui, il faudrait pouvoir utiliser des synthétiseurs. Ça c'est une approche très intéressant. Il faut du modulaire, il faut pouvoir bien utiliser des sons, puis les utiliser comme un timbre. Je pense que c'est la solution. On peut le faire dedans, dans l'onde, mais on se limite, quand-même.

DS: Il n'y a pas beaucoup de place, ou-

JD: Oui, c'est limité, j'ai été obligé de faire quelque chose de précis qui va pas convenir à tout le monde. Alors que là s'il y a un petit synthétiseur, j'y pensais aussi, comme un expandeur qui se met ici en dessus et on fabrique des sons...

DS: Parce que le nouveau Ondéa a du MIDI, c'est une méthode de faire plus de timbres, mais c'est digitale...

JD: Alors, ça ne va pas. Moi je ne jamais je mettrai du MIDI. Parce que déjà du MIDI pour la bague, il n'y a pas beaucoup d'instruments qui- le MIDI.. Bien alors c'est un système entre l'onde et l'expandeur qui est fait pour. Mais pour aller, en MIDI, sur les synthés, ça ne marche pas, il ne va pas le reconnaître. La bague, il ne la reconnaîtra pas.

Il n'y a que l'analogique qui marche. Directe. Sans problèmes. En fait il y a très peu de chose pour faire marcher de l'analogique. Il faut le gate et le CV, *control voltage*, c'est tout.

DS: C'est peut-être une question un peu controversée, je ne sais pas, mais: l'onde Martenot, est-ce que c'est un instrument électronique ou acoustique?

JD: Ben, c'est plus électronique qu'acoustique, mais ça serait acoustique quand on utilise les enceintes spéciales. C'est difficile... c'est entre les deux, hein. D'ailleurs, on s'aperçoit que quand on va vers l'acoustique avec le reverb, la résonance, et le métallique on va vers l'acoustique. Et là c'est un son très intéressant, quand on prend les sons brutes de l'ondes, la carré, la sinusoïde, ... Quand vous les écoutez comme ça, ça a un caractère! Heureusement qu'il y a la touche d'expression, le vibrato. Le creux, le creux est intéressant. C'est un son qui est déjà travaillé... il a un son de bois.

DS: Donc c'est plus d'harmoniques-

JD: Oui, c'est très agréable.

DS: Je me demande, parce que j'ai fait des recherches d'organologie et classification, et la classification la plus ancienne a mis l'onde Martenot dans la catégorie des instruments électroniques, et pas électro-mécaniques ou électro-acoustiques. Mais je parle avec les ondistes et ils me disent 'c'est électroacoustique'. Et la base de la catégorisation c'est la génération du son. Donc si la génération du son est électronique, c'est un instrument électronique, pas électroacoustique, c'est les pick-ups, etc. Mais ça peut-être ne suffit pas, parce qu'on ne peut pas expliquer qu'il y a un aspect acoustique dans le technique et les diffuseurs aussi.

JD: Ben oui, c'est électroacoustique, je pense. C'est la mélange de l'électronique et de l'acoustique, oui. Je ne voudrais pas que ça devient trop, euh, électronique, quand-même. Avec les plug-ins j'ai vu déjà... C'est pas tout à fait pareil.

DS: Est-ce que l'onde Martenot est votre instrument favori?

JD: Personnelle? Non. Mais j'aime bien les orchestres, j'aime bien l'opéra, tout comme ça. L'onde Martenot c'est un peu loin de mes plaisirs personnels- j'en écoute, hein, j'aime beaucoup Messiaen, mais c'est pas... Si je devais apprendre à jouer d'un instrument bien, ça serait pas l'onde Martenot! Ça serait le violon, le piano, comme ça. Ça paraît plus attachante. Ça peut évoluer, hein. Quand j'arrive à être musicien, c'est violoniste ou pianiste (!), pas ondiste [laughs]. Je tripote un peu, je fais mes gammes, quelqu'un qui me surprend peut croire que je suis musicien, mais non

[laughs].

DS: Je sais aussi que vous avez travaillé avec Jean-Michel Jarre. Est-ce que vous étiez le réparateur de ses instruments, et-

JD: Je fais toujours. J'ai eu- il m'a appelé il y a dix jours. Je dois lui refaire un système 55, un Moog modulaire.

DS: Je l'ai vu live en Angleterre l'année passée, c'était magnifique. J'ai essayé de le rencontrer, mais on n'a pas lui donné mon message... Est-il intéressé par les ondes?

JD: Oui, mais il voudrait que je lui donne. Vous comprenez?

DS: Sans payer?

JD: Oui, ou pas beaucoup. [laughs] Parce qu'au début, il a su que je faisais ça, il m'a téléphoné, 'oh c'est formidable, t'sai mon père il a joué avec Boulez dans leur jeunesse'. Maurice Jarre, il l'a utilisé dans *Doctor Jivago*, dans *Laurence d'Arabie*, il a fait d'autres morceaux où on entend bien l'onde Martenot.

DS: Mais il ne veut pas payer [laughs].

JD: Non. Il a l'habitude qu'on lui donne des trucs, hein. On a regardé le nombre de visiteurs sur les morceaux Youtube, et Gotye qui m'avait acheté l'onde, c'était déjà à des milliers! Gotye c'est vraiment un type sympathique, il touche à tout: vous devriez le rencontrer. Il a une ondeline, il aime bien les anciens instruments. Il est très gentil. Il me fait penser à Jonny Greenwood, on a l'impression que c'est un petit garçon qui vous écoute. C'est très agréable de rencontrer des gens comme ça, qui sont pas..

DS: Je ne savais pas pourquoi vous et Mr Bloch ont visité Mr Greenwood: c'était juste pour transporter?

JD: C'était de l'opportunisme. Thomas avait un concert à faire, au Barbican Center, et il m'a dit 'j'y vais, et je vais y aller en voiture'. C'est lui qui m'a présenté, tout ça: 'je vous emmène, l'hôtel sera payé par Barbican Center et on ira voir Jonny le lendemain!'. C'était formidable, on a bien discuté, ça fait des relations commerciales; même Thomas, il entretient les bonnes relations. C'est comme ça que ça s'est passé, et ça m'a bien arrangé.

DS: J'ai visité Bloch la semaine avant la rencontre de Jonny Greenwood: c'était avant mes recherches doctorales.

JD: Eh oui, c'est grâce à lui que j'ai pu mettre le pied dans le milieu. Il m'a soutenu. C'est un monde assez petit, finalement.

DS: Dans mes recherches, j'écris 'la communauté' Ondes Martenot, et on m'a dit que tout le monde était amis?

JD: [laughs] Il y a des clans! Moi je fais parti du 'clan' Madame Hartmann, elle était très stricte dans sa façon d'enseigner, de pratiquer l'instrument, c'était très bien! Les autres... Elle aurait jamais accepté de jouer sur une Ondéa!

DS: Est-ce que c'était traditionnel de protéger la culture?

JD: Eh oui. C'est elle qui fait beaucoup de concerts, et les autres sont derrière.

DS: Je me demande: pourquoi ne parle-t-on jamais de Cynthia Millar? Je n'ai pas pu la contacter, il me semble qu'elle est un peu isolée?

JD: Elle m'a contacté une fois y'a très longtemps. Je l'ai connue par l'intermédiaire de Monsieur Ball, vous connaissez? Malcom Ball, en Angleterre. Et j'ai l'impression que c'est pas une grande virtuose.

DS: Elle joue le *Turangalila*-

JD: Elle est peut-être un peu restée dans son île.

DS: Je ne sais pas qui est son ancienne instructrice, d'ailleurs? Je vais rencontrer Pascal Rousse-Lacordaire.

JD: [laughs] C'est pas de l'amitié, ça! C'est pas une communauté qui se tient. Moi je connais que l'église Hartmann donc je suis pas non plus objectif, et elle favorise ses élèves. Par exemple, le concert de *St François*, faut trois ondistes: elle prend Bruno Perrault et Nathalie, ce sont ses élèves. Et les autres sont là 'arr' (jaloux). Alors ils se connaissent bien entre eux, il y a de l'amitié.

DS: Je suis allée à Montréal et on m'a dit que c'était nécessaire de travailler ensemble parce qu'on a tous besoin des choses de chacun: câbles, etc..

JD: Et ça ça pose des problèmes oui, y'avait un déficit total d'instruments, c'est pour ça qu'il y a eu l'Ondéa. Les gens se prêtaient rien, c'était une question de survie; si vous prêtez votre enceinte et qu'elle est flinguée, c'est vous qui êtes dans l'embarras. Et ça a pas arrangé les choses. C'est le fils Martenot qui en est responsable; il aurait dû prolonger la grande famille Martenot. Il aurait pu aider tout le monde, il détenait les clés du pouvoir.

DS: Je pense que j'ai juste une grande question: je pense que c'est vrai que les Ondes Martenot sont plus visibles qu'avant, il y a du momentum, quelque chose se passe; mais je ne pense pas que le futur des Ondes soit sûr: de quoi les Ondes ont besoin pour survivre?

JD: Je crois qu'il faut surtout des compositeurs. Il faut que les répertoires soient là.



Tout va s'enchaîner: des bons interprètes, ça se voit. Il va y avoir des appels, des jeunes qui apprennent, ils vont acheter des Ondes voire des ondes d'occasion, il va y avoir quelqu'un pour s'occuper de les entretenir. Il faut que ce soit des compositeurs connus, ça serait bien.

DS: Avez-vous quelqu'un qui vous assiste avec ça ou êtes-vous la seule personne?

JD: Je suis seul, oui. Pour l'entretien ou la fabrication?

Assistante: T'es tout seul, Jean-Loup. Pour des réparations, les gens viennent te voir toi, Jean-Loup.

DS: Est-ce que vous pensez à enseigner quelqu'un?

JD: A Stéphane, mais on verra. Il serait plus intéressé d'entretenir une maison que ça. Parce que là tant que je suis là ça va, mais après... Ca fait appel à des connaissances de long-terme. Des années [19]70-[19]80 et avant; y'a un savoir-faire qui se perd. Les gens font que du numérique. Ils cherchent même pas à comprendre.

Assistante: Jean-Loup c'est quelqu'un qui a commencé avec les amplis alain[?], il a vraiment une assise de folie. Quand on voit toute cette évolution jusqu'à l'électron de maintenant...

JD: L'année prochaine, ça fera 50 ans que je tripote de l'électronique. J'ai toujours fait ça! J'ai eu un premier emploi dans la téléphonie, je suis parti tout de suite, à l'époque on trouvait tout de suite du boulot. Je suis allé travailler dans un magasin de musique à Pigalle, qui vendait des guitares et des amplis, à l'époque des Beatles: des Vox, des Fender. C'est ça que je réparais. Marshall, tout ça. Et puis j'ai réparé les orgues, les synthétiseurs. C'était très marginal: premier synthé que j'ai réparé c'était un ARP Odyssee. Et après, je savais pas que c'était le boulevard après.

DS: J'ai encore plusieurs questions, mais je dois-

JD: Oui.

[end of interview]

## Appendix H: Interview with Nathalie Forget

Conservatoire National Supérieur de Musique et de Danse Paris, 12

September 2017

DS: What I'm looking at right now, I've got one main question and a bunch of other questions below that. So my main question is whether the Ondes Martenot is a stable instrument that is not going to change much in the future, or whether it is not stable yet and there's going to be many more versions of the Ondes Martenot—

NF: It has never been stable. You can see in the room in this conservatoire, we have for example four, well we have seven, eight instruments, but four are working, and they are all the same period, and they are really different. Each of them. Each loudspeaker is different, so you still have the same global idea, but it has never been stable. And each, even Martenot himself, each time made some different instrument. I think because of him, because he was always searching, but also because of ondistes. You can see that the instruments, they are different, because of the ondistes who asked something, who are playing like that-

DS: I'm very, very interested in that.

NF: So it is very linked to the ondistes for me. The Ondes. You cannot separate—perhaps it's my opinion of course, [DS: No, no] but I really feel like that. And also if I compare my Ondes, I have different models of Ondes, and I ask different things, for myself. I feel like a violinist, you know, I am searching my sound and with the Ondes Martenot it's crazy because you have the body, where you can fix some things, and change some things, and you also have four or even more if you want but minimum four loudspeakers possible, so it's like, but you can — *multiplier* [DS: Yes] search and change the sound. With five ways, four loudspeakers and the body, and it's quite infinite cause you can plug it in what you want. It cannot be stable. The instrument is a glissando, and the sound, the first idea for the loudspeaker was to make an acoustic resonance, so to make it like *irréel* and not stable at all. The idea is not to be stable, is to be not always glissando but something between... not material, not fixed. Material is really... [whistles]

DS: Yeah, yeah. In terms of stability, I was thinking more in the lines of — you've

got a certain technology and at the start it takes on different forms and maybe other people make different versions of it, etc. But after a while, when you ask someone what that technology looks like, they can picture something in their mind of what that technology looks like that's quite general. For example, when you ask people, can you draw a violin, they're always going to be drawing the same shape, and the same features. You know, it's quite a stable sort of technology now. And the Ondes Martenot, I feel... I'm in two minds. Sometimes I think no, it's not stable, because sometimes you have these loudspeakers and sometimes you have different configurations and different possibilities, especially with the modern versions.

There's the Ondéa, the Ondes Musicales Dierstein. But on the other hand, um, the core of the instrument has not really changed much and all the newer versions are still trying to at least incorporate the most important features. The button-

NF: You have to keep that, because if you don't keep that- this is the problem of the ondomo for example, because you make everything a little bit smaller. For me it's not a problem if you don't play the classical score, but it would be a problem if I first would teach on this instrument and then after to a big one you have to change everything, it's not easy. But it's not a problem if you play something else. But the other one, they really have to keep the same size, because if not we are like- it's too difficult. It's even difficult to change of the instrument the sound, and if you change the size it's just for every instrument it's like, it's too difficult.

So we keep the size, we try, but they change sometimes. The first time Dierstein made something... *plus haut* (DS: Too high), but then my student asked him 'no, please, keep the-' because we are used to that (DS: Yeah) and it's ok- you will always have people taller, smaller- it was not a bad idea but we are used to that height so they have to keep that. Martenot's son changed that. It was a mistake. For his *numérique* digital 1 you have the drawer like that and it was not possible to play the piece, because you have to- and then when you have pieces you have to [makes sound] do that. So you have to keep the size. The timbre, the pedals, everything. And you can change the rest. You can change the size of the loudspeakers also, because we are not used to act inside so it's not a problem.

DS: So which model do you think was the model that everyone is now seeing as the standard?

NF: The standard model for me, I think, but I've never heard it well, was the tube model, where all of the most important pieces have been written. But then actually

nobody plays with this model. But this was the sound of the Ondes Martenot first during all the period until '70, the tube model you can hear on the recording, it's very different. And even Jeanne Loriod, she had a lot of difficulty to change instrument and go to transistor instrument because it was really different, the sound was really different, it's really different. But the problem my generation they've never heard (DS: Exactly) a tube instrument. I have one, but it's like crazy- we have to here, they are crazy, they are like ~pwoo, they make some noise- we saw them, it's too difficult to restore, so yes. Too expensive. So for me the standard with the *palme* and the *métallique* we have to keep in mind I think, even if we cannot rebuild that. We have to keep that. We have recording, we have still some instrument, uh.

DS: So if you could go back to that sound, that would make the Ondes Martenot complete?

NF: No no, I don't want to go back. For me it's just a reference, important. We cannot cut. It's the first instrument during like, fifty years, that was the Ondes Martenot first. And the transistor is just an extension something new and so on and now the models, they are all changing. But we have to keep that because it was the birth of the instrument. Really important, I think. But I don't want to go back to that, no. I don't care, I'm really open to every model, and there's no one model best than other, I don't think so. I think it's good to be open because if people like Oliva, Dierstein, Mr Kean, they all want to add new things to- they all want something good and linked to the past, it's interesting. Everything is interesting. We just have to keep some basic things to be able to play most of the pieces because it's not easy for us, we have to change instrument and so on. And even Ondomo, it's interesting I think. Because it makes some, it's something different, but it's in the heart of the Ondes Martenot and what he wanted to open to other people. And I think it's important now because I feel that since ten, fifteen years more and more people are coming back to Ondes and you have some big interest from other countries also for this instrument. And this is the first time we have so many people building it, repairing it. (DS: Very exciting) It's very nice, yes. Something changing.

DS: Can you elaborate more on how you first saw things changing? When you first thought, ooh, there's something happening?

NF: For example, the young composers are coming back to the Ondes, they are discovering again the Ondes. Whereas in France, during a few decennia, we had Messiaen, Jolivet, Murail, it was closed in that little cave. People were a little bit

afraid to touch the instrument, because of Messiaen. They wanted to kill the fad in a way, I don't know, to say 'I'm not like Messiaen so I don't choose that instrument' something like that, or Jolivet. And it was also we have a lot of religious music, like Messiaen but also Jolivet in a way is also full of religiosity. Lots of composers felt that they wanted to break with that, with that kind of conservative. Ponce, after the war, Messiaen is really like a something conservative to say we can still believe in God, in light, so. (DS: True) You have people like Boulez, he plays the Ondes for example but he says ok, it's finished. And most of the people thought that it was just an instrument to go to synthesizer, which is not the case actually because it's really different, and so I feel that the new generation of composers, they are discovering- they are not- they are out, they are far from this now. It's like two generations after Messiaen, Jolivet, and so they are like, [blows raspberry] they know about Messiaen but they don't put the Ondes with Messiaen. They are more open to Radiohead and more open to other music and so they are, it's more free. We are not in the little, *comment on dit...* And now you also have more people building it.

DS: Do you feel that first there was a change in the interest in the Ondes Martenot from a composer perspective and only then people starting to build Ondes Martenots?

NF: No, I don't know, it's difficult. I don't really know. I think it's linked. The fact that for a few years, many people thought it was finished because it was not possible to build it. Perhaps [the family] were too much in control, who has the right or not, to keep it within the idea of only good musicians, you know.

DS: Do you feel Maurice Martenot himself was a little bit protective as well?

NF: I think so, but I don't know, I'm not sure. But I feel that, yes, he refused some times to sell to these people. Perhaps he doesn't feel it, he was in- but it was something- I don't think it was about money, it was about feeling energy.

DS: Jean Laurendeau's new version of his book has just come out, I just received it in the post, and it has a section about the new instruments, trying to build new instruments, and having difficulty-

NF: But now it's ok. From the Ondéa, it's open. Then Dierstein- everybody can build something, you just have to don't put the name, and even perhaps Dierstein will have the name. I think the daughter is more open. So they want again to have the name so probably it will come back.

DS: What is your opinion on the Ondes Martenot name? Do you think it would be

best for the future of the instrument that every instrument has the same name? Or is it important that you can distinguish...

NF: For me the score written for Ondes Martenot. I think it's a mistake to make some score for this model and this model and this model. Even if it has already been done. Because some composers they really like the Ondéa, what you can do, this. I told them: then I will not be able to teach it, I will not be able to give it to other ondistes, but sometimes they don't care, so if they are really aware about that and they don't care- I agree it's ok. I can understand you have some composers, they like, they don't care, they write for one person. It's nice, also, it's like a love story. So I did that for example for Pascale Criton. And yeah, it's something about love, you can only you play that piece with this model and this loudspeaker... But she was really aware of this, she knew all the models, she knew that I won't be able to teach, and *voilà*. But now I'm always clear about that, and most of the composers, they want to write for everybody. (DS: Yeah) So then they have to- *l'instrument de base c'est le Martenot*, we have here with some difference - Dierstein- they know that, and then every model can be able- has to be able to play that. Except the Ondomo, which is probably more depends on the piece. Some piece can be played, but not every. So you have to- and when you are in orchestra, it's Ondes Martenot. When I play with my Ondéa, it's Ondes Martenot. Messiaen it's Ondes Martenot. All the most important composers it's Ondes Martenot. It's written: 'Ondes Martenot'. You cannot- if you want to build another instrument, you cannot- it's a real mistake to put that in there and say, oh I play another instrument. The people, they ask for Ondes Martenot. And they don't care if you play this model or that one. (DS: That's really interesting) I mean, if you have the Ondes Martenot in your head, you will play with every model, it will sound like an Ondes Martenot.

DS: I came at this topic from the angle of always having to explain the research that I do. People don't understand what I say when I say Ondes Martenot, because it's a French word in an English sentence. They stumble over the different syllables, and they can't really picture how it's written- it's a bit of a stumbling block. And I read in Laurendeau's new book, there's a letter from Olivier Messiaen, who urges people to- I think this was in the Nineties, who urges people to try to create a new Ondes Martenot. And even if it's different from the original Martenots, to just call it 'onde', [spells out] O N D E.

NF: Martenot himself, in his technique in a book he called 'onde musicale'. In the

*répertoire type* Martenot. So then you can open like that, but on the score, most of the score, it's written Ondes Martenot. You can say *ondes musicales*, but it's not easy to keep that name, because everybody knows it like Ondes Martenot, non? I think.

DS: It's just maybe a bit long to stick- but I know lots of people who've become really interested in it, and then it's not a problem anymore, once they know how it's written...

NF: So how do you call it?

DS: I tend to call it Ondes Martenot, but if I'm speaking quickly or I'm just writing, I just do 'onde'.

NF: Yeah, I do the same. (DS: Oh, you do the same?') 'Onde', or 'onde M'. Because on score you can see O.M., in the orchestra, it's O.M. Or onde(s).

DS: Could you tell me in your own words what your relationship with the Ondes Martenot is? So, are you first a musician, or an interpreter or a performer, or are you first a teacher... how do you define yourself?

NF: I feel- *spontanément* I would say I'm a performer. Because I'm coming from visual arts. So it's special, and that's how I came to Ondes Martenot. I was playing piano, but I was doing some visual arts in photography, performance, installation, sculpture, and I was studying quite everything, 'til I was like 14 years old. And then went to Paris and was in the arts university and so I was looking for an instrument to play and to use in my installation. So I was looking for an instrument less famous. [24:43] I was fond of Beuys, you know, the installation with the piano inside the *feutre* and things like that. But I was really looking for an instrument less famous and like, *comme on dit*, you know Marcel Duchamp what he say- *inassignable*. Some things you cannot fix. (DS: Ah, I see) Also in the head. *Inassimilable*. You cannot have it. For me, I discovered the ondes when I was very small. My first teacher of piano by chance was also a player of Ondes Martenot, was a student of Messiaen, Michel Foison. And Tristan Foison, his son. And so my father told me, 'Remember this instrument? You were really in love when you were five years old', and ok. And then I tried to learn when I came to Paris and really fell in love, and then it changed my life, because then I did more music than visual arts now. And I never stopped. And I did Boulogne, where you will go. That was my first teacher, Pascale Rouse-Lacordaire, and then I did here. And then, it's like that. So I'm more a performer, for me, and improviser, because I came to the Ondes first with

improvisation, that was really my, like, to improvise. I do, when I can, improvisation with my students. I think this instrument is really great for improvisation. (DS: Is it?) Because you can always change everything, you know, you can really, you know, make your sound and it's infinite. There are so many scores that have not been written. Nobody knows what you can do with this instrument. You have classical things, melodic things, but you have so many things.... So it's really nice, improvisation, because you can go and mix with every instrument very well, you won't have difficulty because you can change your timbre. [27:06] Your loudspeakers, your *tessiture*, you can go from tuba from piccolo, you can fit with everybody. The most difficult is with *harmonique* instruments. But well. With *monodique* instruments you can go everywhere, it's crazy. And also with dance (DS: Yeah?) it's very interesting. Because you can really follow with the timbre, with the *fréquence* and follow the body, really, comment-on dit, *pâte à modeler sonore incroyable* that you can really have on your fingers.

DS: Do you see lots of your students improvising from a very low level, or do you have to pass a certain level to...

NF: No no, that's for me the interest, I do most improvisation with *débutants*, the ones who have never played Ondes Martenot before. This is more difficult for them to play a score, because then when you have the score you have the frequency, and then you can hear the mistake, it's not tuned. It's very difficult, it's like when you begin the cello, the violin — it's, *phwoar*. Whereas if you improvise you can really you are like a child. Nothing is wrong, nothing is true. I have some students in option, they are just beginners, they learn new things, really, because I'm like, where did you find this sound? Like the guy you saw. (DS: Yeah) He makes some sounds sometimes everybody in the class was like, where do you make that, because he just finds some things- And also they have some bad things I cannot do. They find new things, new technique because they don't know how to play, they are really childlike, free, you know. *Libéré*. The technique is really good to play something, to play together some kind of music, but sometimes you have to also- it's not easy, and I feel, I learn I learn I learn, and when I go out here, it takes years for me to get free from all that learning. And that's why I came to rock music, for example, because it helped me to get free, because in rock, I could do [makes noises] everything was really free, and I was trying to play some bad sounds. For years and years trying to make the most good gesture, sometimes it's good to be free, when you don't know,



and also you can learn with improvisation.

DS: So you studied for how many years before you went to rock?

NF: To rock music? I don't know. 13? I made like seven years of conservatory. I think. But I was in a hurry, I wanted to go quick. But I worked a lot, when I was here I was really working all the day. And I feel really more free when I had 10 years of practicing. I think it's like other instruments, in fact. 10 years of work, and then you can feel like, ah, ok, then you are more natural. And then it makes like two, three years to get more free and to say ok, I want to push that.

DS: Did you go out into the rock area yourself, did you present yourself and say 'I want to do something different', or were you asked to play in a rock band? How did it happen?

NF: It happened by meeting, I met a composer who had a project with a player of concrete mixer, you know, the machine making *béton* (DS: Ah, yeah) it was a guy from rock from *industriel*, from krautrock in Germany, and I thought that project with orchestra, I say 'oh, I want to be here', so I contacted the composer and I say, please, I want to be there, I know you like the Ondes. And I feel that project is really great to mix that really industrial rock with the orchestra, and if you make the Ondes it's like the opposite. Very sophisticated. Whereas we can make some very bad noise, but we know the Ondes like angelic. And then he asked the rock guy and he said 'yes, why not', so that rock guy came, that was my first real meeting with rock, he came to see me in Hamburg, because he was living there, for Messiaen liturgies. You know, the very religious, and I was like I don't know if you have to come, but he said I'll come, I'll come, and I was in a red dress and everybody like 'ah, Jésus'. I was worried what he was thinking, because his music was really [makes loud noise]. And then we met and he said 'what do you want to play with me?' and I don't remember what I answered him, I said 'I don't know, I feel like it has to be like that, you know, I am your opposite, and we have to meet, no?' And he said, ok, and then he invited me and then we met and that was [name unintelligible] he invited me in his band first, and in his festival, and I met other guys... Actually I'm not doing so much rock, but I miss it. I miss it, really. Because I think, it's really interesting, I feel like I cannot have everything I need in one kind of music. It's very interesting in rock also, the physical things, because in the Ondes we are really- we try to push hard the body more and more with little gestures, and I'm really asking myself what the instruments mean as I'm coming from performance, from body art. So my feeling

was really strange to fall in love with the Ondes. Which is a little bit the opposite, you know like, very religious and *mentale*, and with the sound and.. but it's not so different. (DS: You saw an opportunity) Yes, and I really like the opposites who meet. I think that is really interesting. And the Ondes is material, it's not so mystic. You have some... You know Gaston Lagaffe? It's a cartoon it's a French cartoon, a guy inventing crazy things. This instrument has something also like that, because when you go inside you say 'how can it still work?', and sometimes you don't really explain. Even Dierstein, even Oliva told me, 'I don't believe in God, but if there is one God, he's for the ondistes, because it's not possible that that fucking instrument, so many old instruments also, to repair- how can it work?' (DS: [laughs] It should have been broken years ago) I don't believe in God, but there's one God for you, for the ondistes.' Sure. [laughs]

DS: Somebody told me that there is a French-ness in the way that the original Ondes Martenot was constructed. When you open it you see that certain circuits are not entirely necessary or overly complicated and very intricate, and that some things can be simplified.

NF: Yes, perhaps it's true. Who told you that?

DS: I can't remember.

NF: It's right. I think Dierstein also simplified, tried. But he also has his complications. Kean is American, no?

Martenot was not so much *ingénieur*, he was more instinctive. That's what I see when I open the instrument. And he adapted each time, he shuffled things.

Depends on the ondistes also who play, because when you play the instrument, you use it, *comment dire - on l'use*, you will make some bad things depending on your playing. So my instrument will have some bad things depending on my playing. I have for example an instrument of Mme Deslogères, that was an ondiste same generation as Jeanne Loriod. And her instrument has some *défaults* depending on her playing. So when I play her instrument I have in my mind to imagine and to know how she's playing and I have to try to play like her if I want this instrument to make a good sound. And first I was like, fighting with her instrument, like, trying to adapt, and I said, 'no it's not a good way', this instrument has spent like, forty fifty years with her, so I have to understand how she played and how to play like her, not exactly but to go in the way of using the instrument, and now it sounds better.

DS: So is this like, a technique in the right hand or the left hand, or-

NF: Both, in everything. Vibrato, everything. Also it's her body. She is smaller than me, so I have to understand how she was playing, also the- everything. And she has another technique because she's older so we don't play the same way now than Ginette, or.. We don't play the same way. And also the tube instruments, they were very different. And she learned first with the tube instruments, so she had a different technique, different heavy.. *poids*, to play. Everything different. It's really interesting. And I imagine when I will give my instrument, I will have to give it to an ondiste who will do that work, try to play and imagine how I was playing to make it sound.

DS: What sort of sound are you aiming for, or is it just any decent good sound? When you say you have to be different to create a certain sound? Is that from your years of practice from your teachers saying you should aim for this, or is it just your idea of what it should sound like?

NF: It's my idea, and it depends on the composer I'm playing, I think.

DS: You've been an ondiste during the time that Jean-Loup Dierstein was repairing instruments. Did you work with him, or-

NF: I've worked most of all with Oliva. And I've built myself some parts of the instrument, with my father, was helping in his *entreprise, atelier*, it was in 2002-09, we helped for my Ondes but also for all the Ondes Oliva built, we helped with Mr Levine, my father and I, we make some keyboards, because my father makes some wood. So we most of all helped Oliva. I bought two instruments, that was my first Ondes. And with Dierstein I helped less, because I was really tired also. Now I work more with Dierstein because he restored the Ondes here. And also he restored my Ondes, because Oliva, he is getting older and it is not easy for him, he doesn't have a place to restore. So I used to work with him, but most of all, first worked with Oliva, the beginning of Oliva.

DS: So he was the- at the time, he was the person repairing?

NF: A little bit he helped us, but he was most of all building his new model.

DS: So I'm just imagining, in Montréal, you've got Jean Landry as sort of the main repairer, and...

NF: Here we had Jean-Louis Martenot, his son, he was still repairing, but most of the ondistes didn't really feel well with him, because he was not so good. I mean, repairing, it was not his job, he was not so good. Sometimes it worked more or less. We didn't have somebody like Landry. *Actuellement* we have Dierstein. He does that

quite well. Oliva helps us a little bit, but he wanted to build his instrument. (DS: Yeah, yeah) He helped us when he had problems.

DS: So Oliva, was he a player as well, or- (NF: No, no) So what was his interest in creating a new model?

NF: You should meet him (DS: I should), he lives in [redacted], a suburb of Paris. Not easy to find, his house. He has an *appareil* for vision, but he still has a good brain. I don't know, I think he met the Ondes very young. He did many things. He was painter, he made cinema... He didn't have any diplomas, I don't think so. He invented things. When he was young I think heard had a concert, and he was quite *prétentieux* and he told me that he thought 'oh I could make one, a new one' and then he came like 40 years after, I don't know how he has been met, if it's Jeanne Loriod... ah no, I think it was Françoise Cochet, I think who met him, I don't know how, and he was interested in the project- we were looking, the ondistes, to- I was just beginning the Ondes, that time, I think it was just after Jean-Louis Martenot's digital, 1997, I think he built his digital. And then every ondiste said, oh no we cannot use this instrument because it's not 'that', they were looking for a new person, and then they met Oliva. I met him, I was still in Boulogne, 1998 more or less. And then the first Ondéa really appeared in 2002-3.

DS: So you ended up getting an original Ondéa. But you ordered two, did you get the second as well? (NF: Yes, I have the second here) Because I remember some people having ordered an Ondéa and then they never received-

NF: Ah, because Oliva had so much problems, he was *ruiné*. Not only with the Ondes, with many things in his life. And he was like, getting freer and freer, out of that space of material things and money and it was crazy because he spent, I don't know how much money in this, *il a été complètement ruiné*, and then 2 or 3 times we had to move, so we helped with my father to move all the factory in another place. And then at the end I just took that Ondes, but it was not finished, but I saw that he had to go out. There was the *moment de faillit*. Everybody was coming to close the factory. So I just stole my Ondes. It was not finished. I paid everything but I was waiting, but that one has many problems, because it has never been finished.

DS: I see. And do you remember eight years later, no probably less than that, Jean-Loup Dierstein had the idea to-

NF: Yeah I don't know when, uh. First Dierstein was the guy who really repaired the Ondes Martenot, because many Ondistes have need, restoration not every month but

several times every year, because we need that, we have to travel everywhere. So first he was repairing quite good the instrument. And then I think possibly he had the idea with the ondistes to make a new one, yes. More like the old Martenot. Because the Ondéa, the idea was to change a little bit. He thought he will have the rights and the name. And then the clash...

DS: And then he didn't, yeah. I will hear this from him, but I think Thomas Bloch was the main...?

NF: Ah yes, Thomas helped him a lot.

DS: Do the ondistes in Paris have a good relationship? Do you know each other, do you talk to each other, do you meet each other often?

NF: We don't so much meet, because I don't know, we don't have so much time, and everybody's in his... But I think it's better than before, perhaps. Before there was less ondistes. So it was not easy because you had Jeanne was really linked to Messiaen, and to.. And now it's more open, I think, because... Now I know every ondiste, every classical ondiste, and yes, I think it's better. I don't think that inside we really like each other a lot. We are musicians, so personally, I don't really also understand so much how they play. Depends on the ondiste. But I am quite open, it's interesting. [48:38] I'm really linked to my last teacher, I'm linked to a few ondistes, but perhaps, one or two, not more. Or three, but really one. Who is my last teacher. But I think we have good relation. Because we have to, also. We have to play together, we have some sextet, we have some piece with two, three Ondes, so we have to keep good relation. And I think that we have more work, from 10 or 15 years, there's more and more people asking the Ondes. So if we are all, uh... depends on the ondiste, but... For example Nadia and I, we are not fighting, I don't feel so, because she makes many things, I make many things, it's OK. It's not good when people they are waiting, and they don't have a job, and they are no happy. So I think it's OK. I will work with Nadia soon in March [Tectonics festival Scotland]. I've worked with Thomas in sextet... we are in concurrence, which is not easy. For example, we just fight for a concert, Thomas and I, but it's not us, it's just the life. (DS: Yeah, yeah) And sometimes he wins, sometimes I win, sometimes Nadia wins. It's not a war, it's just like that. So I think it's ok. (DS: OK) I feel it's better than before. And it will be better, and the more we will be, the more it will be better. We are not enough, I think, in Ondes. We should have more people playing. It's better.

DS: You would think that that's more competition, then.

NF: Yes, but the niveau then will be better. I think it's better for everybody. You still have people who don't play so well- for the guitar, you have players, not so good, but they invent something... and you have players.. incredible. It's better. If you have not so much people, the level is amateur. Because you have people, they don't know how to play, they don't know what you can do, they don't know who play, or how it sounds when it's well-played or not, they don't know how to ask...

DS: Is this the danger of all these new instruments going to people who don't have teachers? That they will just learn from listening?

NF: Yes, it's a risk, but they have the right to do that. It's like guitar, if you want to learn... the problem is more the people will engage them, take them to play

Messiaen. It's them who make the mistake, because they don't know the difference between a good Ondes player and an amateur [52:17] I don't like that word. (DS: A beginner, or) Yes. And that's true, that for the Ondes you have the place for the beginner. I really fight against that, this is the role of the class here. But we don't have so much space. To really have people who know the instrument and can...

Even conductors who know music very well, they don't know what they can ask you. They don't know at all. So we have to be more and more, and then people choose the ondiste they want. And it will be better, and the more we will be, the more projects we'll have. You will always have a place for people-

DS: So there need to be more people who are trained. Would you say classically trained, or would you prefer not to call it that? (NF: [shakes head]) No. Just trained in a conservatoire?

NF: No, you don't have so many places to learn the instrument.

DS: There should be more places.

NF: I think it would be good. Even if the conservatoires don't want to open a class, they could open an option, like here.

DS: So what's the difference between the classes-

NF: The class is for people who learned before in another place and they pass the test to enter. And then *la matière principale* is the Ondes Martenot, like piano, like guitar. This is their main, uh. In option they are here for another instrument, another class, and they just discover. It's more open, they don't have to work da-da-da, but then they discover the instrument. So I feel that other instruments could open that kind of thing. Also perhaps with the Ondomo, even if it's different, but it's not so expensive. For example, an option to discover and then you see if you want more. I

think it's better if more and more people play. I don't care how they learn to play, what you need is humility. Sometimes people miss that, they don't have humility. But even here, it's not a problem of conservatory, out of conservatory, even here, many people, they lack- *ils manquent d'humilité*

If you have this humility- like Greenwood, when he was asked to play Messiaen, he refused. Because he said, OK, I'm not able. (DS: Yeah) The problem is not for the Ondes for everybody, that you have otherwise people they want more and more and they feel like they want to be God and they think they are God, and *bon*. But you can learn what you want. We should open more places to learn. We should have other countries, you know. Because it's French, ok, Canada, little bit Japan-

DS: We should have something in the UK. Because a lot of people know about the instrument, a lot of people are interested in it. But there is not enough written about it, there are not enough instruments, there are not enough places to learn the technique. I think that needs to start happening. But it's difficult, because in the UK there's only a handful of people who have been taught the technique, and they are busy with other things and they are only performers and not teachers... there's no place to go, even if you buy an instrument.

NF: That's true. I had a student who was coming from Cambridge. It's not easy because he doesn't have the good things when you're in a conservatory, that you have the class you can learn and practice before buying an instrument. So then they had the right to come every day, practice here. But I think it will change progressively, more and more.

DS: Because there are more instruments now, or there will be, I think maybe that was the first step and more will come.

NF: Yes. We should invent some new links also. But actually you can buy instruments, and good instruments. So I feel really that we could make some new links, for example also Dierstein he sold some instruments to recording studios.

They have money you know, it's not so much when you have money, 10.000 euros is not- If you want every loudspeaker it can be more, but even if you have the body, then you can plug, it changes the sound, but you have the base, the body. And if you have some link with a studio, I don't know, a *partenariat*. It's not so expensive, less expensive than before. The Ondéa was more, and it was before so it was really more expensive. So now it's going down and more open. And also for the students, they will love to open an option- they tried to do this already- to learn the Ondes. I feel so

in Germany they should perhaps have something in Berlin, would be nice.

DS: Do you think that there is a possibility to develop online classes?

NF: I don't know, I'm not really aware about that. I've had already a few people ask me, but I don't like that, that's not my feeling. Perhaps too old, I don't know-already! I like to feel, to touch, to see. It's not easy for me. We can do that, we see it sometimes on video... but I am in the old *manière*. I think that somebody who is-don't make the road, you know, It's a bit too easy to have it quickly. If it's in the idea to not meet the people, to not make the road, I don't like that. Always when I receive that kind of asking, it was in the easy way. Quickly, I don't want to pay anything, I don't want to make the road, I don't want to travel. Humility, a little bit. You know. You have to go to somebody, no? But if it's somebody very very far, and I feel that person is really motivated, I could do it. But I never feel that, each time it was like, video... You're not so far, *hein*. No.

DS: What do you think of- if I wanted to talk about the people involved in the Ondes Martenot, I talk about the Ondes Martenot community. Do you feel like that's the correct term?

NF: I don't feel a real community. We tried before to have some association, we had ADOM first and then SCIOM. And it doesn't really work, because they were too much fighting each other. I feel better, and now personally I am out of all those associations, and I feel better like that. And I feel my relations with the others are better like that. I don't feel a real community, because I always think that inside we are in concurrence. We are not fighting but we are, you know, on the same... It's not easy, it's like other instruments, if you asked composers if they were friendly together they would say yes, but other pianists, not really. Humility is good but if we play an instrument... In a way we pretend also we are a little bit like we do better than the other. It's always good to stay down, but we are, *on est prétentieux aussi*.

(DS: It's the nature of the job) To go on stage, we can only be, *comment dire, il faut qu'on soit quand-même un peu prétentieux, prétendre avoir un meilleur son, avoir, enfin, un meilleur truc. Par concurrence, mais, oui, pas de communauté, non*.

*Parcontre*, it's true that we are all linked, as we play *l'instrument*, we are not so much, but... It's good that ondistes also go in other associations, because if we are all together I don't feel it works so much. We don't have the same feeling, *avis*. But we don't care, it's like other instruments. I don't really think there's a community, no. But we have that link, that I think we are intelligent, and we want that instrument



still alive, and we are quite open. And the new generations, it's going better and better. It's not possible, because even here they [students] are quite friends, but they will be 100 times together on the same concerts, and then perhaps one will succeed and the other not.

DS: One thing I noticed in Montreal was that everyone was sharing equipment, they said, 'oh, I just saw Suzanne, she has my pedal', things like that.

NF: We also do that here. I help my students, my teacher helped me, it's more like that perhaps. But perhaps not enough, we could do it more. That would be a good idea. That's why I also go out of CIOM. I wanted that CIOM makes some instruments here to rent. It was complicated, but try to do that. For people who are in another place for orchestra, even students sometimes they cannot always take the instruments here, so we need some place, there's no place to rent an Ondes Martenot.

DS: Except in Belgium. There is a lamp instrument.

NF: Who plays it?

DS: No one.

NF: Ah, so it is not working. An Ondes which is not played, is dying. Here you can rent it, but for student work. It will come I think. I don't know if I answered your question.

DS: Yeah, yeah. It's just for me- I don't want to paint a picture that is not reality. Maybe I need to find a different word to describe the people.

NF: My dream is that everybody will play the Ondes Martenot. It is my duty, my goal. (DS: Yeah?) Even that it would be *obligé*. [laughs] You have to, you don't have a choice. (DS: [laughs]) Yeah.

DS: Do you think the world would be a better place?

NF: Yeah. I really feel that, that everybody should play the Ondes Martenot. That's what I told when I make the *concours* to have the teacher- the exam to be a teacher. I told them that, it really made them laugh. But I really feel that everybody should play this instrument.

DS: What does it do? Why do you feel that everyone needs to?

NF: It just changes the way you feel everything, how to live also. it's just serenity. When I first began the Ondes- I didn't tell you that- I felt like if I took drugs. I was coming from piano, and viola, and I played for 45 mins and, I felt completely stoned physically. And then- now I need it. Then I became used to. But during the first

year, I felt like a drug addict. It depends on the people but physically I was really sensitive about the vibrations entering the body, also with the loudspeakers, it really enters and can make you calm and very sweet and spacey, floating. Your body is just [blows].

DS: Are you naturally an active person or more calm?

No, I was very active, and it made me quiet, the Ondes. You have to be quiet for the Ondes. You know the Ondes is so sensitive that you cannot be stressy. If you do that, you'll make too much big noise.

DS: Have you seen students have the same reaction?

NF: Not so much, because the students I have in the class they already learned the Ondes. Option, yes. They are very afraid sometimes. (DS: Really?) Yes.

[end of interview]

## Appendix I: Interview with Geneviève Grenier

Grenier's home, Montreal, 27 May 2014.

DS: Est-ce que vous pouvez me dire comment êtes-vous rencontré les ondes?

[Interruption for answering phone and talking about pet]

GG: Alors, comment j'ai connu les ondes? Euh, je connais Suzanne depuis que je suis toute petite parce que Suzanne et son mari était des amis de mes parents. En fait Noël, Noël Audet le mari de Suzanne travaillait avec mon père à l'université à Montréal, l'Université du Québec. Et donc Suzanne et les Ondes Martenot sont dans ma vie depuis, on peut dire, très très très longtemps, je me souviens j'avais au moins 5 ans quand, euh, j'ai cette mémoire là, la maison de Suzanne quand j'étais petite était pareil comme la maison où j'ai grandi, euh, pareil, pareil, elle était située d'ailleurs même sur la même rue mais à l'autre bout de la rue, ici à Boucherville et euh, je me souviens de son instrument dans le salon, il y avait un mur en bois et son instrument était là. C'est une mémoire que j'ai. Je me souviens aussi qu'on avait à la maison un disque de l'ensemble d'ondes, lequel? Euh: l'ensemble d'onde européen avec *les Fêtes des Belles Eaux* dessus. Et je me souviens du son des ondes et je me souviens que j'aimais pas le son [DS: ah ouiii] J'aimais pas ça je trouvais que ça sonnait comme un petit orgue. Il y a quelque chose dans ça qui me déplaisais. Mais je me souviens que mes parents écoutaient ça de temps en temps parce que j'ai la mémoire de ça. Et, euh, un autre souvenir c'est qu'on était chez Suzanne parce qu'ils étaient des bons amis mes parents et eux, et on était dans une pièce de la maison et il y avait la télévision et on voyait Suzanne qui jouait à la télé, mais Suzanne était là. J'étais encore assez jeune pour dire, ah c'est spécial, de la voir et elle jouait des ondes à la télé dans une émission, je me souviens pas ce que c'était, mais euh, on la regardait et puis on était avec eux à ce moment là. Donc ça c'est des souvenirs que j'ai euh, des ondes.

DS: C'est les années...?

(0:04:21)

GG: C'est le début des années 70. Parce que moi je suis née en 1965 donc 5 ans en [19]70, donc t'sais dans ces années là, au début des années [19]70. Et euh, c'est ça, ça c'est la mémoire que j'ai. Euh, j'ai demandé souvent à ma mère, moi je prenais

des cours de flûte à bec, j'allais dans un petit cours en groupe, on jouait du xylophone, on appelait ça initiation à la musique. J'ai fait ça pendant plusieurs années tout le long de mon école primaire et euh souvent je demandais à mère pour prendre des cours de piano, et tout le temps elle me disait, va voir Suzanne. Mmm et moi j'allais pas voir Suzanne, j'étais trop gênée, il aurait fallu que j'aille voir Suzanne. Donc Suzanne est dans ma vie, on dirait elle a été placée dans ma vie pour, je sais pas quoi, t'sais quoi ça aurait pu commencer beaucoup plus jeune, t'sais si ma mère elle m'avait pris par la main et m'avait amenée chez Suzanne j'aurais commencé à faire du piano avec Suzanne et je crois que par la bande j'aurais commencé à faire des ondes aussi. Et, euh, mais ma mère elle m'a pas pris par la main et me disait tout le temps va voir Suzanne. Alors, je suis jamais allé voir Suzanne. Et j'ai continué la flûte, et puis un jour j'ai pris des cours de piano, j'ai eu le piano en héritage de ma grand-mère, d'une de mes grand-mères. Mais je m'amusais beaucoup, sur le piano puis, j'ai pris des cours un peu, t'sais pour apprendre un peu mais j'étais pas structurée au niveau de la pratique. J'avais pas envie de...je voulais que ce soit facile et puis que ce soit agréable. Puis je...t'sais de me restreindre à une discipline, j'étais pas là dans ma vie d'enfant, non j'avais pas...même adolescente ça a pris du temps avant que j'accepte que pour apprendre bien il fallait que je me structure. Et, euh, alors la flûte à bec, le piano ensuite, j'ai, euh, j'ai acheté une flûte traversière, et là j'ai pris des cours de flûte traversière, j'en ai joué, je me suis pas rendue au niveau professionnel mais quand même j'étais capable de jouer des sonates de Bach et le concerto de Mozart, puis un jour là, ben quand j'avais 20 ans, et euh, alors c'est ça. Et donc dans mon parcours de musique, j'ai fait des camps musicaux l'été, à 14, 15 et 16 ans, je suis allé dans des camps d'été, 3 semaines, et là j'ai adoré le fait de faire de la musique, d'être avec d'autres, faire de la musique avec d'autres, de vivre avec d'autres, t'sais la vie communautaire avec un projet musical. J'ai beaucoup beaucoup aimé ça et c'est dans un camp, qu'un professeur m'a dit quand j'avais 15 ans, si tu veux faire de la musique, t'en aller en musique tu as le talent pour. Puis ça m'a fait genre...Ah, c'est la première fois, moi je sentais que j'étais musicale, que j'étais expressive, que j'avais quelque chose à dire. T'sais comme quand j'étais fâchée je jouais plus fort puis j'sentais beaucoup la musique dans, dans, dans mon Coeur, et euh, voilà. Puis ça ça a été un déclencheur, ok je m'en vais en musique. Parce que ma mère est artiste, j'ai toujours dessiné, j'étais beaucoup dans le monde des arts, j'étais comme pré-destinée à m'en

aller en arts. Et tout à coup j'ai fait [makes sound] *crrrr*, je m'en vais en musique, puis ma mère elle m'a dit, tu seras jamais capable, tu pratiques pas, alors ça ça a été, le coup de pied pour que je me mette à pratiquer. J'ai beaucoup fonctionné par opposition avec ma mère, donc, euh, ma mère m'a dit t'es pas capable, tu réussiras pas, alors voilà [rire]. Je me suis mise à pratiquer et voilà. Et à un moment donné dans les études on fait, on a l'école primaire, le secondaire ou le high school, mais ici c'est l'école secondaire. Et ensuite on a encore deux années à faire comme le collège qu'on appelle ici aussi cégep [Collège d'enseignement général et professionnel], et j'ai fait une audition pour rentrer en flûte au cégep, il y avait deux étapes, il y avait l'examen de flûte et ensuite il y avait l'examen, toutes les matières théoriques, le solfège, la dictée, la théorie musicale. Et j'ai été acceptée dans l'examen de flûte mais ensuite mon professeur il m'avait pas préparée, je connaissais rien en théorie, j'avais jamais de solfège, j'avais pas fait de dictées musicales, alors j'ai été refusée. Et ça ça a été un choc dans ma vie, tu sais, ça a été comme le premier mur, parce que je voulais m'en aller en musique c'était comme vraiment une passion, j'étais pas bonne, j'étais pas avancée, j'avais tout à apprendre, mais c'était en dedans. Et c'est là Suzanne, qui revient dans le décors et qui m'a dit, je vais te donner des cours d'Ondes Martenot, tu fais ton audition au Conservatoire, puis tu verras après ça tu bifurqueras vers la flûte si tu veux.

DS: Mm, mm

(0:9:10)

GG: Voilà, elle m'a prêté son instrument à lampes pendant un été, et j'ai pratiqué un peu, à peine, tu vois j'étais pas...c'étais quelque chose j'avais 17 ans, réapprendre un instrument à zéro, c'est quelque chose. Et quand même j'ai fait l'audition au mois d'Août pour le Conservatoire. Donc, il y avait de la place, il y avait une élève en Ondes Martenot, alors il y avait de la place. J'ai fait l'audition...ils m'ont auditionné aussi en flûte parce que j'étais tellement débutante, ils voulaient voir, t'sais si je connaissais déjà un peu la musique. Puis, euh, alors je suis rentrée au Conservatoire en Ondes Martenot, en commençant à zéro, donc dans la classe de Jean Laurendeau. Et, euh, c'est ça, donc pendant deux ans, j'étais pas certaine, je continuais toujours mes cours de flûte en parallèle, je progressais en flûte, j'enseignais la flûte, j'avais des élèves en flûte. Et, euh, puis ça a pris 2 ans où, j'avais toujours dans la tête, moi je m'en vais en flûte, et il fallut que j'aille, j'aille vérifier aussi, j'ai fait une audition au Conservatoire pour la flûte. J'avais pas été acceptée au Conservatoire, c'est

tellement haut. Ensuite j'ai fait un peu plus tard une audition à l'Université de Montréal, puis là j'ai été comme accepté, mais comme, avec une année comme de probation. Là je me suis dit, ok, j'ai le niveau. T'sais pour moi j'avais besoin d'aller, ça, t'sais qu'au niveau de l'estime, de mon estime personnelle, de savoir que j'avais atteint un certain niveau sur un instrument parce que aux ondes, j'avais pas encore de niveau, alors ça, ça m'a calmée un peu, je me suis dit, ok, je suis capable de...t'sais, parce que j'ai commencé, on va dire, la musique avec un refus, t'sais, et euh, j'avais besoin d'aller vérifier que j'avais du talent. T'sais, pas juste parce que je suis rentrée au Conservatoire parce qu'il y avait de la place dans la classe tu sais? Et, euh, et voilà, puis après 2 ans, euh, qu'est-ce qui c'est passé?...j'entendais, il y avait une élève qui était là, elle avait un an peut-être de plus, une autre fille de Boucherville, c'était une élève de Suzanne aussi qui s'appelait aussi Geneviève, Geneviève Lalonger, et moi je l'entendais pratiquer à travers la porte. Parce qu'il y avait un instrument au Conservatoire et on allait toutes, bon, pratiquer, il y avait aussi Estelle Lemire, donc on était 3, pendant plusieurs années on était 3, donc on se partageait la journée: 3 heures, 3 heures, 3 heures. Et on échangeait, on se montait un horaire puis on allait pratiquer tous les jours comme ça, donc on s'entendait répéter. T'sais quand j'arrivais moi, puis l'autre avait pas fini, ben on entendait le son à travers la porte [DS: oui], puis on, on s'écoutait, on faisait des concerts, on assistait t'sais on était une petite équipe, t'sais, et je ne reconnaissais pas le son que je n'aimais pas, de quand j'étais petite [DS: ah ouais...]. D'ailleurs avant tout ça, avant tout ça, avant même l'histoire que Suzanne, avant l'histoire du conservatoire. J'étais peut-être en secondaire 4, donc Geneviève Lalonger que je connaissais de l'école secondaire, on allait à la même école, euh, elle était en secondaire 5, elle avait quand même, une année de plus que moi, et à un moment donné on parlait puis, elle a mentionné ça, les Ondes Martenot, puis elle a parlé de Suzanne, tout ça, puis t'sais ça m'a fait comme: ahh!? Tu prends des cours d'ondes avec Suzanne? Moi je connais Suzanne tout ça, et à cette époque là, j'écoutais de la musique de, harmonium, et Beau Dommage c'était mon groupe que j'adorais, et dans ces musiques là, en fait j'écoutais aussi du Vangelis, j'écoutais beaucoup de musiques, t'sais, électroniques, t'sais euh, mais, smooth là, c'était pas de la musique contemporaine, j'aimais ça beaucoup cette musique là. Puis je me disais, ah moi j'aimerai ça apprendre le synthétiseur, puis en même temps ce que j'entendais, c'était une musique électronique mais, avec...expressive, puis c'est ça que

j'entendais dans l'harmonium, j'entendais quelque chose, surtout dans Beau Dommage, Est-ce que tu la connais la pièce de Beaux Dommage, euh, je vais te chercher mon ordinateur puis tu vas entendre...c'est tellement beau... quelque chose qui me touchais beaucoup beaucoup [DS: ouais] et qui me faisais dire ah je veux apprendre le synthétiseur, mais c'était pas un synthétiseur! C'était des Ondes Martenot, puis je savais pas vraiment t'sais [cherche à l'ordi]. Bon ça commence comme ça, ça raconte, c'est un fait divers dans les journaux, ils ont trouvé le corps d'une femme qui s'est noyée. Puis c'est son chum, qui parle, son amoureux parle, t'sais comment ils ont retrouvé sa blonde morte, alors [change, ou chercher plus loin dans le morceau] Faut trouver, c'est dur parce que ça dure à peu près 20 minutes la musique. Voilà on arrive, t'sais c'est la fille, c'est la femme qui raconte, puis c'est très beau. Ça c'est pas du tout le son que moi je me souviens de quand j'étais petite. C'est le son qu'on a ici. [Cd joue toujours] très expressif [DS: oui, oui]

(0:17:17)

DS: Qu'est-ce que c'est le nom de...?

GG: *Un incident à bois-des-filions* (17:24)

DS: Bois-des-filions?

GG: Oui, une région au nord de Montréal. Et c'est le groupe Beau Dommage. Alors la pièce elle dure à peu près 20 minutes et puis ça revient plus tard, là elle explique qu'elle est arrivée là puis qu'elle a glissée, tout ça, puis euh, plus tard ça revient, la même chose, puis là elle chante autre chose. Finalement elle sent qu'elle est bien dans l'eau puis elle parle de sa mort, tout ça. Puis, pour, moi c'est pas du tout le même sens que quand, euh, de la mémoire que j'ai. Alors, ça c'est important peut-être aussi dans la recherche, euh, sociologique que tu fais où...?

DS: Un peu

[0:18:24]

GG: Parce que en France, ils jouent pas de la même manière qu'ici, les ondes. Et qui joue là, c'est Marie, Marie Bernard. Donc moi ce que j'entendais dans mon oreille c'était le son de Marie Bernard. Et quand j'étais au Conservatoire c'est ce son là que j'entendais aussi quand, euh, Geneviève jouait. Et ce qui me fascinait c'était le ruban, quand on glisse là, le pouvoir d'expression du ruban. Ça là, (cela), je voulais, il y avait une pièce que je voulais jouer c'était dans le coin des animaux: la berceuse du faon [chante]. T'sais c'était une belle mélodie un peu tristounette là, mais très sensible puis...c'est ça. Donc, j'ai comme redécouvert sans savoir que c'était des

ondes. Parce que dans ma mémoire c'était pas quelque chose qui m'attirait.

DS: Oui, oui...voilà, c'est tout une histoire, c'est accidentel.

[0:19:34]

GG: Oui mais en même temps, je me suis toujours demandé si on a pas comme un destinée, une pré-destination. J'ai l'impression que Suzanne, elle est dans ma vie, elle est un pilier important dans ma vie. Puis maintenant on joue ensemble, Suzanne, je l'adore, ben tu sais comment elle est adorable t'sais. Puis, t'sais dans la joie, puis on se ressemble beaucoup dans ça, t'sais beaucoup d'espoir, beaucoup de: oui c'est possible, puis, euh, les deux ensemble on est capables de faire lever des choses, en même temps ben, tu sais on est 5 là, à jouer des ondes, pff, quand on est deux pour 5 à faire bouger les choses à un moment donné on s'épuise.

DS: Oui,

GG: Alors, euh, alors, c'est ça. Puis, euh, un moment aussi qui a été décisif c'est quand il y a eu la *Turangalila Symphonie*, à l'OSM, l'Orchestre Symphonique de Montréal, ici. Je pense que c'est ça les deux ans là. C'est mon professeur qui jouait les ondes, puis je sais pas...

DS: Quand est-ce que c'était?

(0:20:44)

GG: C'était, il me semble en 1985, c'est ce qui me reste, donc ça faisait deux ans, deux ans et demi que je jouais des ondes. Et est-ce que c'est les ondes là dedans, il y a eut quelque chose en tous cas dans cette musique là, euh, Messiaen peut-être, j'avais pas...jamais entendu cette musique là. Est-ce que tu connais la...?

DS: Oui, oui

GG: Avec le cinquième mouvement, avec le crescendo à la fin qui en fini plus, qui en fini plus, puis les ondes par dessus [chante] puis ça finissait plus, puis moi j'étais assis là, j'étais comme ça, puis ça montait le crescendo, ça montait, ça montait, puis là j'étais comme ça [rire]. Je tombais à genoux, j'étais complètement blastée comme la musique me rentrait dedans, en travers, ça, ça a été un moment charnière. Après je me suis dit, c'est mon instrument.

[0:21:38]

DS: Oui.

GG: Ouais. Là après ça, j'étais plus décidée après là, parce que je faisais...puis la relation avec Jean c'était pas facile, tu sais moi je, je savais ce que je voulais puis, il me faisait jouer des choses de flûte à bec. T'sais [rire] moi j'avais joué ça depuis que



j'étais petite, *À vous dirais-je maman* [chante], t'sais, je commençais tellement à zéro, puis au début c'est tout le contrôle de la touche puis euh...

DS: Oui, je l'ai rencontré et il m'a dit quelque chose sur sa technique d'enseignement, euh, et c'est oui c'était très presque facile, des petites exercices, euh, faciles mais très difficiles à, euh, pas contrôler mais, à faire bien...

[0:22:34]

GG: oui, oui, exactement. Mais moi j'enseigne aussi, j'ai des élèves aux États-Unis, des élèves adultes aussi et...

DS: Caroline m'a, on a parlé d'un couple de personnes?

GG: Oui, il y a Tim et Suzanne à New York, il y a aussi, euh, David, il a pas encore d'instrument, David Matthews à Pittsburg. Hum, alors les gens ils arrivent, puis souvent ils sont des pianistes, alors ils ont l'impression que ça va être facile, puis la première chose que je leur dit: je fais ok, assieds-toi à l'instrument puis, essaie de jouer quelque chose avec la touche ici, t'sais, puis je leur explique que ça c'est l'âme, t'sais toute la sensibilité vient de là. Puis là je leur donne juste un...je dis: tu vas juste faire un petit exercice, et là t'sais... c'est les exercices de Jean, avec le petit [chante]. Puis et là ils essayent quelque chose là, et tout à coup là, c'est comme: ah ça va être facile d'apprendre cet instrument, là tout ça là disparaît complètement, ça fait: Ah, Oh, OK! [rire] Parce que c'est pas un instrument facile. Ben, on peut jouer, quelqu'un veut jouer quelque chose, même après les concerts, les gens, moi je fais essayer mon instrument, vous voulez essayer? Venez, essayez-le. Puis il y en a des gens qui naturellement ils s'amuse et ont compris tu sais? Ils ont compris, t'sais, c'est *rough*, c'est, puis, ils arrivent à faire, t'sais quoi ils s'amuse. Puis si j'interviens pas la personne elle reste là. Moi je me dis, ah, t'sais, ça, la piqûre est en train de se faire alors je les laisse un petit peu faire. Mais après ça on a besoin de pouvoir dans la sensibilité, pour pouvoir exprimer, et puis c'est ça qui est fascinant que cet instrument là, c'est toute la finesse, la délicatesse qu'on peut aller chercher, dans notre expressions parce qu'on a pas la contrainte de devoir couper la phrase pour respirer. T'sais, on arrive au bout l'archet on...t'sais? Alors c'est une phrase qui peut être infinie, donc tout le temps vivante. Alors c'est ça qui est fascinant, en même temps c'est ça qui est difficile, quelqu'un qui l'a pas, jouer des ondes ça peut être vraiment laid. Alors il y a des gens qui l'ont pas, t'sais, ils jouent des ondes puis c'est...on s'ennuie, comme n'importe quel instrumentiste qui joue puis t'as beau faire plein de choses virtuoses, oui c'est flamboyant mais on dirait que ça rentre pas

ici.

DS: Mmm

[0:25:32]

GG: Tandis que les ondes, je trouve c'est ça qui est important puis d'arriver à, moi en tous cas, je veux transmettre ce que je sais, je trouve c'est important. En ce moment je suis la plus jeune au Québec, je vais avoir 50 ans puis je suis la plus jeune à jouer là. Alors de transférer ça aux autres, pour, euh, puis c'est de le transférer mais justement dans le...dans l'idée de la capacité d'expressivité de l'instrument, et ça justement ça part de la qualité, la possibilité de la personne de s'exprimer, c'est pas juste l'instrument. C'est, ça part de l'être, c'est la musicalité, c'est la même chose pour tous les musiciens. Il y a des musiciens qui jouent d'un instrument, qui ont une technique, puis il y a les musiciens qui arrivent à jouer d'un instrument vraiment, à dépasser la technique.

DS: Mm, mm. Est-ce que vous pensez que, hum, les ondes sont différents des autres instruments, j'ai eu beaucoup de gens qui m'ont dit que c'est plutôt un instrument acoustique, la sensibilité, c'est comme un violoncelle. Euh, comme, euh, comme un flûte un petit peu...

GG: Tout à fait, moi je suis d'accord.

DS: Donc, euh, qu'est-ce que c'est qui est différent des ondes?

GG: Par rapport à un instrument acoustique?

DS: Euh, plutôt tous les instruments qu'est ce que c'est si spécial les ondes?

GG: Ben c'est ça c'est le son, la possibilité de...pas la sonorité, la possibilité d'avoir un son ininterrompu et constamment malléable. Il y a pas de...c'est ça, il y a pas de contraintes à ce niveau là. Puis ça je trouve ça assez extraordinaire. De pouvoir comme, être expressif, tout en, sans, euh...c'est ce qui fait qu'on peut constamment aller récupérer t'sais, moi je dis souvent aller décrocher le cœur des gens, t'sais rentrer puis, t'sais là faire un petit crescendo, là tu montes, tu glisses un peu, ça fait hoa! Mais c'est que ça continue, ça continue, tu vois tu rajoutes quelque chose d'autre ça fait ça hoa! [rire] Je trouve que ça rentre en nous. Dedans. Puis, euh, le fait que le son soit ininterrompu, la possibilité parce qu'on peut l'interrompre, mais euh, cette possibilité, là.

DS: Est-ce que vous pensez que dans le répertoire, il y a beaucoup de pièces qui utilisent ça, ou, parce que ça, euh, on peut l'interromper quand on veut, est-ce qu'il y a des compositeurs qui voulaient plutôt que ça sonne comme les autres instruments,

donc euh, plus de, plus de phrases et pas le son [GG: continu?] continu?

[0:29:00]

GG: Ben je pense que c'est un mélange. Il y a un mélange de tout ça hein, c'est...dans le fait que le son soit pas interrompu, je pense qu'il y a aussi quelque chose dans, euh, le fait que le son peut être soutenu avec le volume là, je pense mettons à Messiaen dans l'opéra *Saint-François d'Assises* où il y a un mouvement où il y a 3 ondes qui se passent...t'sais une mélodie vraiment diaphane et tellement comme un ange par dessus l'orchestre, les cordes qui sont tellement tellement douces. C'est sûr qu'à un moment donné le son il coupe, puis ça part d'un instrument à l'autre mais qu'est-ce qui fait que c'est si beau?

DS: Mmm

GG: Je pense que c'est ça, c'est comme vraiment une ligne, c'est une ligne, une ligne musicale, puis les ondes utilisées comme un autre instrument mettons dans un orchestre, euh, ben parfois on entend pas les ondes, ça vient enrichir le son orchestral mais on peut pas nécessairement savoir qu'il y a des ondes, parfois on le sais parce que tout à coup ça ressort soit parce que la ligne est vraiment par dessus tout le reste ou alors parce que justement là ça glisse, c'est rare tu sais le trombone des fois va glisser, les cordes des fois vont glisser, mais c'est plutôt des effets, tandis qu'aux ondes c'est pas un effet c'est, ça fait partie du jeu des ondes. Les ondes sont utilisées comment quand elles sont dans un ensemble, euh?...je pense que les compositeurs qui utilisent les ondes c'est parce qu'à un certain moment ils ont envie d'avoir les qualités de l'onde sinon ils vont prendre un basson, s'ils veulent avoir une basse, ils vont prendre une flûte...un piccolo, euh, alors...

DS: Est-ce que vous avez beaucoup de conversations avec les compositeurs des ondes, qui utilisent les ondes et...?

GG: Non, pas vraiment. Je suis pas trop dans ce milieu là. Je suis pas...tu sais les Ondes Martenot c'est beaucoup, en tous cas à Montréal, ça a été beaucoup dans la musique contemporaine, le conservatoire, tout ça, c'est une musique très, euh, musique moderne, pour moi c'est rarement, moi, une musique qui me touche, moi j'ai besoin d'être touchée. Euh, alors je suis pas beaucoup dans ce monde là. Alors j'en ai fait, j'en ai joué, avec, autant dans mes études, autant avec l'ensemble d'ondes, c'est pas mon choix personnel. D'ailleurs, ma musique à moi, si moi je laisse la musique de moi sortir, comme sur mon album, j'ai décidé de pas me censurer. Ben c'est pas du tout cette musique là. C'est une musique beaucoup plus,

euh...

DS: Est-ce que vous pensez que les compositeurs, hum, connaît les ondes beaucoup ou est-ce que c'est juste parce que c'est disponible pour lui.

GG: Disponible je dirai pas ce mot là c'est pas très disponible. J'ai fait un concert à Pittsburgh en avril et puis il y a deux compositeurs de là-bas, dont David, mon élève, qui ont composé une pièce pour ondes sans connaître vraiment l'instrument. Puis ce que ça donne c'est, euh...il y a un des compositeurs, il a beaucoup aimé, il m'a entendu jouer, moi je fais beaucoup de tremolos, et puis il m'a entendu jouer comme ça puis il a composé une pièce juste avec ça. Alors il connaît pas bien l'instrument, hein, moi je trouve qu'il a pas exploité les ondes, d'ailleurs c'est une pièce qui peut être jouée par des synthétiseurs aussi, 3 synthétiseurs ou 3 Ondes Martenot, ou moi j'ai fait une Ondes Martenot avec deux synthétiseurs, alors j'ai pas encore l'enregistrement de ça mais c'est un effet. T'sais il a profité du fait qu'il y avait des Ondes Martenot sur place pour composer quelque chose, puis faire découvrir aux gens qu'est-ce que c'est sans pouvoir aller dans l'aspect, moi je trouve, expressivité, vraiment grande de l'instrument parce que c'était quand même assez euh...on est resté dans un aspect de l'instrument, tandis que l'autre compositeur écrit pour le ruban. Euh, beaucoup, beaucoup de ruban parce qu'il sait que j'aime le ruban, mais beaucoup beaucoup des phrases hachurées, des petits bouts de quelque chose, même que je lui ai demandé, il m'a envoyé un partition un mois avant le concert puis c'était injouable, injouable. C'était une musique très euh, très contemporaine, mais beaucoup euh, tu sais comme quelqu'un qui est vraiment dans sa tête qui est un peu [rire] en pièces, en morceaux. Alors, puis, il y avait pas de tonalité rien, pas de repères rythmiques, les instruments faisaient toutes sortes de choses, et c'était bien trop difficile alors, je l'ai renvoyé écrire. Je lui ai dit, écoute, utilise les ondes, fait des phrases, permet moi de chanter, mets les ondes par dessus tout ça plutôt que de faire...et puis c'est ça qui a fait, il a refait la partition avec beaucoup plus de moments chantant, t'sais, là on entend beaucoup plus les ondes je crois que si les ondes avaient fait des petits trucs partout mélangés avec...mais ça aurait été jouable, mais j'avais pas le temps, moi c'était pas assez, euh...pour faire ça puis euh...alors finalement ben on le fait, puis il y a un enregistrement, puis je suis [sic] pas entendu l'enregistrement encore, ça va finir par arriver, mais. Donc c'est ça les compositeurs ont pas, je crois, connaissent pas bien l'instrument, connaissent pas les possibilités de, expressives de l'instrument.

DS: C'est ça que je pensais ouais...

(0: 35:40)

GG: Ou, comme je disais tantôt, le musicien en dedans pour pouvoir exprimer quelque chose doit avoir la capacité d'expression. Il y a des compositeurs aussi, ils ont pas développé la capacité lyrique, chantante d'expressivité. Le compositeur est comme un musicien, il exprime ce qui est en lui, mais ce compositeur, c'est ça qui me désole: oui mais c'est comme ça dans ma tête [rire]. Je voudrais pas être dans ta tête, vraiment pas, vraiment pas, pour moi c'est, il y a quelque chose qui n'est pas harmonieux, c'est c'est...mais c'est comme ça, lui c'est ce que son monde intérieur lui permet d'exprimer, c'est ça qui sort de lui, alors ça donne une musique comme ça, bon, les ondes sont utilisées comme d'autres instruments, mais bon, est-ce que en connaissant mieux l'instrument il aurait été capable de faire quelque chose d'autre, je sais pas, parce que ça dépend de la personne, de ce que la personne est capable elle. La personne est-elle apte à entrer en contact avec sa propre sensibilité pour demander, pour écrire quelque chose et demander à quelqu'un d'autre: exprime ma sensibilité.

DS: Oui, euh, je pense que, oui, j'ai l'impression qu'il y a beaucoup de personnalité dans les jeux de, les ondistes c'est différent, et je me demande si c'est différent d'avec les autres instruments ou si c'est juste parce que c'est une communauté très petite et je ne sais pas quoi, ce que c'est la réponse de tout ça mais, hum, je pense que c'est Suzanne ou peut-être Jean qui m'a dit, tout le monde joue différent. Et c'est, *a different approach*, hum, peut-être, donc euh...Donc le vôtre c'est ça doit venir de dedans? Oui.

GG: Ouais

DS: Et, est-ce que vous pouvez, euh, je ne sais pas le mot en français, *describe*?

GG: Décrire? Décrire, oui.

DS: Votre technique, hum, des ondes, en comparant avec les autres.

GG: Ok, je vais répondre avant peut-être à, tu questionnais sur est-ce que le jeu des ondistes est vraiment différent par rapport à d'autres instruments.

DS: Oui

GG: Ici, on est très peu, hein, on est peu d'ondistes par rapport, mettons, à des violonistes, il y en a plein de violonistes. Mais si on prend 5 violonistes ils vont tous avoir un jeu différent, mais il y en a tellement que souvent on entend la crème, on entend les meilleurs, alors, t'sais, c'est sûr que...nous ici, on est peu nombreux, la

technique de l'instrument est pas encore, elle va encore évoluer beaucoup, beaucoup beaucoup, moi mon clavier est quand même limité, je suis pas pianiste puis, je peux pas jouer n'importe quoi au clavier, t'sais, il y a du monde qui sont bien meilleurs que moi pour ça, puis euh, mais par contre le jeu à la bague, je pense c'est une de mes forces parce que justement j'ai pas la contrainte de devoir...les doigts, puis j'ai comme un stress quand je suis au clavier, euh, donc c'est sûr qu'on voit plus le niveau de chacun, le niveau, bon, moi je sais que le clavier, euh, je suis quand même capable de bien jouer du clavier, je suis capable de faire des concertos, puis tout ça là. Mais on peut sentir le confort, ou, en fait les ondes où les gens se sentent plus à l'aise. Bon il y en a qui vont être plus techniques, il y en a qui vont être plus expressifs, il y en qui vont avoir une recherche plus au niveau de la sonorité, qui vont t'sais, qui vont vouloir chercher à, t'sais, qui vont travailler plus les timbres, jouer avec certains timbres, des fois ça fait, ah, moi j'aime moins ça mais si l'autre personne aime ça, t'sais ça dépend à quel niveau on...qu'est-ce qui est important pour nous. Moi c'est sûr que la musicalité c'est super important, la musicalité, l'expressivité, le lyrisme c'est important parce que, pour moi, ça veut dire, c'est qu'on exprime quelque chose. C'est pas juste, faire de la musique, on la joue puis on dit quelque chose puis c'est ça que j'essaye de faire passer à mes élèves, même quand j'enseignais la flûte, j'enseigne plus mais quand j'enseignais la flûte c'était tout le temps: raconte moi quelque chose. Tu vois je disais, dépose ton instrument, raconte moi une histoire, raconte moi quelque chose, puis quand on parle, puis qu'on parle de quelque chose puis qu'on est impliqué, on s'implique pour mettre de l'émotion, ok maintenant, raconte moi ta même histoire, prends ton instrument, raconte moi ton histoire. Mais pour arriver là on a besoin d'avoir une certaine technique.

DS: Oui, c'est vrai.

GG: Hein, aux Ondes Martenot, j'étais pas capable de raconter des histoires avant longtemps puis un jour à un moment donné, il y a quelque chose qui passe, tout à coup on y arrive, et...c'est pour ça que c'est important de dépasser le fait d'apprendre comme ça juste pour le plaisir, c'est génial d'apprendre juste pour le plaisir, le plaisir c'est la base de beaucoup de choses, je trouve, mais pour avoir ce niveau là qui permet de dépasser la technique pour pouvoir se mettre à chanter son instrument, à vraiment rentrer dans l'expressivité...

DS: Les limites.

[0:41:57]

GG: C'est ça. Oui, puis je trouve que c'est quand on arrive là, c'est là qu'on présente bien les ondes. Parce que, t'sais, il y a des gens qui jouent du violon, t'sais dans leur maison, puis ils ont beaucoup de plaisir, puis ils font leurs chansons mais est-ce qu'ils vont être de bons ambassadeurs pour présenter le violon au monde entier. Il y a peut-être des gens qui vont dire, ahh, ah, [rire], ok, j'aime pas trop le son, il me semble que des fois ça sonne, t'sais, ça peut-être un peu faux, ça peut sonner, t'sais?! Alors il y a ça aussi, dans le, t'sais, on fait connaître les ondes là, on voudrait démocratiser les ondes, on est en train, t'sais, il y a des instruments qui sont en train d'être construits, on essaye de faire baisser les coûts pour que les gens puissent en acheter plus t'sais, mais, euh, c'est ça, le danger dans ça c'est que les gens croient que c'est facile à jouer. Puis qu'ils se disent, oh, je vais m'en acheter un puis je vais jouer dans mon salon, mais pour présenter les ondes au monde, la belle partie des ondes, il faut être capable de bien en jouer. Parce qu'il y a des enregistrements affreux, avec les Ondes Martenot. Il y a des choses vraiment c'est épouvantable.

DS: Oui?

GG: Oui. Vraiment, c'est pas, euh, moi je dirais pas écouter ce disque là, il y a des Ondes Martenot dessus là, non. C'est pas des références alors, c'est pour ça que c'est important d'arriver à avoir ce niveau là. Puis même si c'est très simple mais au moins, arriver à exprimer quelque chose.

DS: Mmm, mmm

GG: Moi, c'est mon, c'est ma force, c'est mon jeu à moi,

(0:43:40)

DS: Oui, c'est vrai. Est-ce que ça, est-ce que vous connaissez beaucoup de l'intention de Maurice Martenot? Au passé, l'intention de, euh, comment le jouer, comment les apprendre, la technique et...

GG: Maurice Martenot moi, il était décédé, il était déjà mort quand j'ai commencé à jouer des ondes. Alors, je l'ai pas connu du tout, ce que j'ai connu de lui c'est ce qui m'a été enseigné par Jean Laurendeau, donc euh, l'instrument c'est moi, en premier, l'aspect d'être détendu, l'aspect d'être...du calme intérieur, justement pour laisser passer la musique. Puis en même temps, ben, quand on commence c'est pas évident, c'est comme toute une philosophie un peu méditative, qu'il faut être prêt pour ça dans sa vie. T'sais, aujourd'hui si j'apprenais ça je le comprendrais plus que quand j'avais 17 ans, où là j'étais beaucoup dans...j'avais besoin que ça bouge, j'avais

besoin que ça aille vite, puis c'est quand même me détendre! oh, t'sais pour moi ça me semblait plate (ennuyeux), une inutilité, faut que ça aille vite. Moi j'étais comme ça, Jean il était découragé, je pense qu'il est encore surpris que j'ai persévéré.

DS: Ah ouais?

GG: Ouais. Je pense, il s'est dit souvent, elle, elle va arrêter, elle va arrêter, puis euh, ben je crois qu'il est surpris. C'est ça. (0:45:23)

DS: Oui c'est intéressant, à vous entendre parler j'entends beaucoup de la philosophie de relaxation [relaxation] et de pureté peut-être, donc c'est, très intéressant, et je l'ai vu dans beaucoup d'ondistes que j'ai parlé, c'est quelque chose, profondément...?...ou, il y a une relation avec l'instrument qui est tellement émotionnelle et très comme le coup de foudre. Avez vous vu ça dans votre élève?

GG: Des coups de foudre? Ah oui!, Ah oui, oui! Ben c'est des passions. [DS: ah c'est très intéressant parce que ouais...] Ah oui vraiment, pour que quelqu'un...souvent c'est la pièce de Messiaen, la *Turangalila Symphonie* qui crée quelque chose chez les gens, et ensuite, moi, les élèves, il y a quand même, bon, 3 personnes qui sont venues ici, il y avait une autre femme de Toronto qui était venue mais elle, elle a pas...elle est venue pour voir mais elle a pas persévéré. Mais, euh, les autres, euh, Suzanne Farrin de New-York elle est venue ici il y a 5 ans et elle a pratiqué un peu sur mon instrument peut-être 2 jours, 2-3 jours, elle est repartie avec le: ah, je veux revenir! Elle est revenue quelques mois après encore pour jouer, elle a eu son instrument presque 4 ans et demi après, elle a eu un instrument, mais tout ce temps là, la passion continuait c'était le rêve, là, et...et elle a acheté un instrument! Donc elle a payé, je sais pas combien, c'est une fortune les instruments, elle a acheté un instrument.

DS: Les nouveaux de...?

[0:47:46]

GG: De Mr Dierstein oui. Ouais, c'est ça, donc elle a cet instrument là. Et, euh, bon, euh, il y a David Matthews à Pittsburgh, qui aussi a pas encore un instrument, mais lui est venu ici, il y a 3 ans presque, juste pour me rencontrer. Il est revenu un an après, en fait c'était tellement un coup de foudre, lui c'est une belle histoire: il a demandé à Pittsburgh, un organisme, euh, pour l'aider financièrement, il a demandé une bourse pour venir étudier les Ondes Martenot avec moi pendant une semaine. Et son projet était tellement particulier, les gens ont dit: mais ça se reproduira peut-être pas dans sa vie, alors il a eu la bourse! Ils lui ont accordé l'argent et il est venu



pendant 5 jours ici puis, on avait installé l'instrument dans une chambre, la maison est grande. Et il pratiquait, puis il y avait un cours tous les jours, et puis de temps en temps je l'entendais, puis je cognais et je rentrais...toc, toc, t'sais ce que je t'ai dit tout à l'heure là, faut focaliser un petit peu plus, et c'était vraiment fou! Et à partir de ce moment là, on a dit, est-ce qu'on organise un concert ensemble? Lui est chef d'orchestre d'un ensemble à Pittsburgh, et c'est le concert que j'ai donné le 19 avril là-bas. Donc on a organisé tout, ça a créé quelque chose, il rêve d'avoir un instrument, il l'a pas encore, mais ça s'en vient. Mais l'autre c'est Tim, euh, je sais pas comment on dit son nom, aussi à New-York, lui il sait pas jouer, zéro, il a acheté un Dierstein! Zero cours! [DS: mm, mm], et il connaît pas la musique plus que ça, il joue, c'est un autodidacte, il compose, il fait des trucs avec, t'sais des synthétiseurs, il s'achète des Ondes Martenot. Il sait pas comment ça marche, il sait pas comment brancher l'instrument, comment jouer. Alors, c'est fascinant, parce que lui aussi t'sais c'est comme toi, tu dis c'est Radiohead aussi, [DS: oui] alors t'sais, il y en a beaucoup qui sont touchés par Radiohead. Alors il y en a dans ça qui, le coup de foudre, j'achète un instrument mais si la personne a l'argent pour acheter un instrument il l'achète mais ensuite mais c'est d'apprendre à jouer. [DS: oui] Alors, euh, c'est ça. Tim, euh, je, on a découvert son instrument ensemble, et puis c'est là j'ai dit, écoute, ça, ça fonctionne pas, t'es pas fou! Il disait peut-être que je n'entends pas bien, mais j'ai dit, elle fonctionne pas la réverb, sa réverb fonctionnait pas [DS: ah oui...] on a essayé toutes sortes de choses, je lui disais: regarde, essaye pas de chercher, ça marche pas. [DS: oui] Alors il y avait des choses qui fonctionnaient pas comme ça, donc lui il savait pas, il dit peut-être que je sais pas comment, mais j'ai dit, non regarde c'est juste que...ensuite il a été en contact avec Mr Dierstein pour essayer d'arranger ça, il devait lui envoyer des pièces, tout ça, mais quand même, c'est ça c'est quelque chose. [DS: oui] Nous au Conservatoire on avait Jean Landry, [DS: mm, mmm] t'sais on avait quelqu'un sur place, il faisait les réparations puis tranquillement en observant, on est capable.

[0:50:52]

DS: Oui c'est un problème, un petit peu parce qu'on peut en acheter, avec un violon, il y a quelqu'un dans chaque ville qui sait réparer des choses et puis il y a pas beaucoup de mécanique à réparer mais les ondes...oui.

GG: alors c'est pas évident, puis avec la transformation en ce moment de nos instruments Jean Landry, c'est que là maintenant c'est plus Martenot, on a des

pièces Jean Landry dans notre instrument, et si ça fonctionne pas, comme en ce moment, il y a des choses qui fonctionnent pas bien, alors lui doit continuer sa recherche, puis, j'espère qu'il va aller au bout, parce qu'en ce moment moi, j'ai, il y a des aspects, je suis pas contente. [DS: mm] En même temps je peux pas revenir en arrière parce que mon instrument ça fonctionnait trop mal. Alors il faut aller devant t'sais, mais lui il faut qu'il tienne le coup aussi ça fait 20 ans, 25 ans qu'il travaille avec nous, à un moment donné peut-être qu'il va se tanner, peut-être qu'il va être fatigué de faire ça. L'autre jour j'étais chez lui, puis, je lui disais mais, est-ce que tu vas former quelqu'un? Puis, oui, je pense qu'il va former quelqu'un à Montréal, déjà Montréal, parce que là Sutton, c'est loin, [DS: c'est très loin oui] je crois que je suis allé 5 ou 6 fois à Sutton depuis l'automne.

DS: Oh, oui.

GG: Ouais, avec les voyages en avion là, l'instrument on arrive il joue pas, pff, ça c'est un autre aspect stressant, très stressant.

DS: Mmm. Est-ce que vous avez écouté, ou entendu, je ne sais pas beaucoup, euh, des nouveaux instruments, Ondéa? Le nouveau projet?

GG: J'étais allé deux fois essayer l'Ondéa de Mr Oliva, j'étais allé essayer le prototype, c'était encore un prototype, mais ça avait l'air de sonner dans le bon sens. J'avais un instrument en commande, et puis là, ben ça...alors pendant 5 ans j'ai attendu mon instrument, puis il est jamais arrivé. Alors, euh, on va voir, ça a été racheté pas la compagnie [?] à Calgary là. On va voir ce que ça va donner. J'ai essayé 3 instruments Dierstein. Euh, ça s'en vient, mais encore là c'est pas comme nos instruments Martenot...

DS: Qu'est-ce que c'est que c'est différent?

GG: Toutes sortes d'ajustements, euh, ça peut-être très très mécanique, hein, quand on joue avec le...moi je joue beaucoup à la bague, le ruban, au doigt quand je suis sur le clavier et que j'ai pas le temps de l'enlever et de la remettre. Et puis de temps en temps le ruban, pah, juste entre les notes. Des choses comme ça, alors il est pas t'sais, il est pas à la bonne hauteur, alors des fois ils ont juste changé les distances pour qu'on aie plus de place pour les manettes, des fois ils ont baissé les manettes pour qu'on les voit moins, toutes sortes de trucs comme ça qui font que les repères, la mémoire est plus la même. [DS: ah ouai] C'est fou, à un moment donné on développe des...surtout dans la musique avec l'ensemble, la musique à plusieurs, on a quand même fait, ça fait longtemps que je suis dans l'ensemble, on a fait beaucoup

beaucoup de musique qui demande des manipulations dans le tiroir, des tournes de pages, des changements avec la pédale, le son, t'sais beaucoup clavier, ruban, les effets, on se regarde puis [makes sound] *crrr*, alors si ils se mettent à changer les choses de place, la distance, si ils mettent un autre truc qui est plus dur à manipuler [DS: oui] ça change tous nos réflexes [DS: oui] Alors les techniciens ils ne pensent pas à ça, les autres ils se disent ah ouais ça prends un curseur, on va en mettre un autre t'sais, lui est plus moderne, la pièce en dessous est plus solide, oui mais la sensation est pas la même. Les petits boutons pour changer les quarts de ton là, des fois ils sont difficiles t'sais, quand on arrive pour jouer, hun, hun, ah, alors c'est...Moi ce que je trouve de cet instrument là, ma déception, c'est euh, tranquillement les instruments Martenot, se dégradent, se dégradent, se dégradent, se dégradent et on doit constamment jouer, euh, s'habituer à jouer avec un instrument qui donne moins. [DS: mm] Moins, moins, moins, puis on s'adapte, finalement on...pour moi il y a de moins en moins de plaisir, c'est pour ça que c'était important la transformation. [DS: oui, oui] Mais là je suis encore dans l'étape de de dire, oohh, ça sonne plus comme ça sonnait alors je dois, réapprendre à...c'est ça, c'est constamment de l'adaptation, moi ça me fait penser à...le clarinettiste avec son anche qui doit, il y a un moment donné l'anche elle joue bien, à un moment donné elle joue moins bien, il faut s'adapter, changer l'anche, on recommence, on retravaille, il y a cet aspect là avec les Ondes Martenot. C'est pas un instrument jusqu'à maintenant qui a une constance, qui joue tout le temps bien. Ça dépend de l'acoustique de la pièce, euh, bon moi je joue plus avec les diffuseurs Martenot donc ça dépend, de, de...t'sais ceux qui jouent avec ça, ça dépend aussi de la qualité [DS: mm, mm] t'sais, l'instrument de Suzanne [? 56:36 le gong ça vibre, on était sur la scène avec les tournevis pour: qu'est-ce qui vibre là, ah on va revisser cet vis là et...t'sais ça a pas de bon sens. C'est trop artisanal, à un moment donné on est plus en train de jouer, de faire de la musique, on est en train d'essayer de jouer et que ce soit pas la catastrophe parce qu'il y a tellement de petits bruits partout. [DS: ouais] Ok je vais pas jouer trop fort parce que sinon ça fait: hê, hê. Ou, euh, je peux pas me rendre trop loin sur mon ruban parce que sinon ça risque de débarquer t'sais. T'sais c'est toutes sortes de problèmes mécaniques ou sonores, moi personnellement ça vient gruger mon plaisir. Alors, euh, ça va être bien d'avoir un instrument qui joue bien puis qui est stable, mais c'est pas, euh, c'est pas là t'sais?

DS: Qui ne va pas se dégrader très vite, ou, oui.

GG: Parce que c'est un instrument extraordinaire. Mais dans le fait d'en jouer beaucoup, en tous cas jusqu'à maintenant sur les instruments, je sais pas avec la transformation, mais plus on en joue plus l'instrument se dégrade vite, et alors, euh, c'est d'arriver à trouver l'équilibre dans ça [DS: oui] stabiliser l'instrument [DS: mm, mm]. Parce que quelqu'un qui en joue comme ça, euh, t'sais pour en mettre...quelqu'un qui a un studio puis qui s'achète des Ondes Martenot, éventuellement quand ça va être accessible, ils se fait un petit ooouh, t'sais il se met une petite ligne d'ondes Martenot par dessus sa musique, t'sais, c'est pas important à ce moment là tous les détails mais quand on fait les pièces avec orchestre, les concertos, les pièces d'ensemble puis qu'on joue avec d'autres. Que nos sons sont tellement différents, les timbres sont tellement différent c'est là qui a trop d'ajustements, on passe tellement de temps à essayer de s'harmoniser ensemble, sans compter que là on harmonise l'instrument mais souvent les ondistes, quand on a à jouer ensemble, on ne se choisit pas, parce qu'on est 4/5 ici, si on fait un ensemble, ben c'est nous. Alors ça arrive, c'est arrivé qu'il y ait des conflits de personnalités, t'sais, alors c'est tout un monde assez fascinant.

DS: Oui, oui bien sûr. Non c'est, ça semble que les ondistes, il faut travailler, le, avec beaucoup de limites et beaucoup de problèmes mais...

GG: Oui, et d'arriver à faire de la musique malgré tout.

DS: Oui, malgré, oui

GG: C'est ça, le...

DS: Oui, il y a beaucoup de passion dedans, je vois.

GG: Oui, mais ça s'use, moi je suis usée, par ça. J'ai moins le goût. Tout le temps des ajustements, tout le temps, tout le temps, c'est jamais simple. C'est, quand on arrive à quelque part, là, on branche tout là, puis là, là, c'est comme: est-ce que je vais avoir du son? C'est tout le temps le stress quand on joue. Ah j'ai du son!, ah! Tu vois là c'est comme bon, ok. Mais ensuite c'est: bon, est-ce que ça projette assez, est-ce que...il y a des fois d'autres problèmes.

DS: Et ça, ça a commencé au début avec le premier concert.

GG: Il nous a légué ça. J'ai hâte que, que...on dirait que c'est un karma, hein? J'ai hâte que ce soit fini.

DS: Oui. j'espère avec les techniques, technologies digitales, et toutes les, hum, oui les nouvelles inventions et les nouvelles Ondéa. Je ne sais pas, c'est important de garder la sensibilité mais, peut-être euh, changer les aspects mécaniques, parce que

c'est...mais ce sont les aspects mécaniques qui sont le problème, je pense.

GG: Puis en même temps, ben, il y a des aspects mécaniques qui ont créé des sonorités, qui ont créé des, euh, des possibilités de faire des effets. Tu sais juste la réverbération à ressorts, quand on arrive dans certaines fréquences il y a comme une réverbération par sympathie, tout à coup t'sais on a des woow... et là ça explose et il y a des compositeurs qui ont exploité ça. Moi je peux plus faire ça, ma réverb elle est tout les temps propre et bon, tu sais c'est des choix, c'est parce que des fois ça faisait des ouing, on appelait ça des [makes sound] *ouings* [1:02:10] trop quand on en voulait pas, des fois ça faisait vibrer les lumières, les néons au plafond quand on est dans certaines salles, c'était fou là.

DS: Oui c'est vrai, il y a souvent des erreurs qui sont très intéressants, des petits...problèmes ou

GG: Ouais le fait que la touche à un moment donné elle arrive au fond ça permet d'avoir les percutés, maintenant j'essaie d'avoir les percutés et c'est... c'est plus comme avant là, c'est comme, puis ça c'est parce que moi je sais ce que je cherche comme effet, mais quelqu'un qui commence, oui tu tape sur ta touche t'auras le percuté mais en ce moment c'est plus ça. Ok, il y a plein de compositeurs qui demandent t'sais les [makes sound] *poc, poc, poc, poc*, les percutés, alors en ce moment il faut trouver une autre façon de faire les percutés, t'sais. Donc c'est beaucoup encore d'adaptation.

DS: Oui, mm.

GG: Voilà, c'est un instrument en transformation c'est comme ça, hein, depuis le début.

DS: Oui c'est ça qui est intéressant, quand on voit le Theremin, c'est inventé et tous les Theremin qui sont là maintenant, ils sont les mêmes, peut-être c'est...ce n'est pas développé comme les Ondes Martenot.

GG: Oui c'est ça, c'est différent, c'est différent.

DS: Quand vous parlez avec des personnes qui n'ont, qui ne savent pas ce que c'est les ondes comment est-ce que vous dé... [GG: décrivez?] décrivez, les ondes?

(1:04:14)

GG: Mmm. Ben, je mentionne que c'est un clavier, parce que les gens ils pensent beaucoup en français...Martenot ça ressemble à marteau, hein, [DS: Ahhh, oui!] alors ils pensent beaucoup que c'est un instrument de percussion. Alors ils visualisent quelque chose avec des marteaux, alors premièrement je dis Martenot

c'est l'inventeur. Je dis, c'est inventé sur le principe des ondes radio donc ondes, Martenot c'est l'inventeur donc là, puis je dis c'est un clavier, donc les gens ils visualisent le clavier, je dis c'est un clavier sensible, le clavier permet un vibrato parce qu'il est suspendu sur des cordes, et le son est donné par la touche d'intensité, touche de volume, d'expression. Alors qu'est-ce que les gens comprennent dans ça? Je dis aussi, on peut jouer aussi avec un fil, avec la bague qui permet de faire glisser [chante] les sons. Voilà, c'est ça que je dis, en général on change de sujet très vite, comment vont tes enfants? [rire] Parce que là c'est ça t'sais, c'est particulier, quelqu'un qui connaît pas trop ça, euh, savoir ce que je fait dans la vie, euh, bon, ok, j'ai expliqué, j'insiste pas plus que ça parce que en général les gens vont retenir que je suis musicienne, que je joue d'un instrument spécial puis ça reste très vague, [DS: oui]. Je pense que c'est quand les gens le voit en vrai quand je joue en spectacle, là les gens sont curieux. Et je trouve ça important de toujours présenter l'instrument, à chaque concert je fais une démonstration de l'instrument. Parce que sinon les gens ils se tirent le cou, ils cherchent ils identifient pas bien non plus ce qu'ils entendent alors je leur, euh, je fais ça, souvent il va y avoir une première pièce pour leur laisser découvrir pour rentrer tout de suite dans le mental et ensuite je montre l'instrument. Et j'ai fait ça beaucoup en accompagnant le film de Caroline, il y a plusieurs villes où j'ai accompagné le film, et puis, euh, qu'est-ce qu'on a fait, à Pittsburgh on a même installé une caméra au dessus de moi, et c'était... Oh, c'était à Toronto ça je pense, en tous cas une des villes, où on a filmé mes mains et les gens ils voyaient ça sur le grand écran en avant d'eux. je trouvais ça génial parce que, à ce moment là les gens voient et puis moi je peux leur parler, j'ai le micro, je leur parle, je fais la démonstration, et voilà là les gens sont fascinés, puis après je les invite tout le temps à s'approcher puis à venir voir, alors là il y a beaucoup de gens qui viennent et il y en a, si il y a pas trop trop de monde, j'offre si les gens veulent essayer. Je trouve ça important. Parce que c'est là qui en a qui vont avoir... il y a des gens qui sont très, euh, comment on dit kinesthésiques? C'est beaucoup par le toucher, et là ces gens là vont découvrir quelque chose. Il y en a d'autres c'est au niveau sonore, il y en a qui, ils écoutent puis ils disent ah c'est beau, puis ils visualisent pas là l'instrument puis c'est pas vraiment important. [DS: mmm, mmm] Puis il y en a d'autres, ben c'est ça, c'est l'aspect, euh, ah comment ça fonctionne? Puis tout ceux qui posent des questions sur comment ça fonctionne à l'intérieur. Des, t'sais des ingénieurs, des spécialistes en électronique, moi, j'sais pas [rire].

DS: Le numéro de Jean Landry.

GG: Ouais, ouais.

DS: J'ai vu que c'est un aspect d'être ondiste, un petit peu, les...les démonstrations les, ouais...mais c'est parce que vous êtes...instructrice...euh?

GG: Professeur

DS: Professeur, donc c'est plutôt votre profession aussi...

[1:08:06]

GG: moi j'aime beaucoup parler aux gens, je trouve ça important de, de, puis on parle de l'instrument mais on peut aussi parler t'sais quand on a l'espace pour ça de parler des pièces, t'sais j'ai fait ça pour euh, au mois de septembre ici au Québec on a les journées de la culture, on a donc fin de semaine où les musées sont ouverts gratuitement, où il y a beaucoup beaucoup, de...j'ai été invitée dans un endroit en septembre passé, pour faire un petite démonstration t'sais. Mais ça durait à peu près une heure, mais justement c'est moi qui l'ai monté, j'ai présenté l'instrument, les aspects de l'instrument, et c'est ce que je fait aussi quand j'accompagne le film. Je vais jouer une pièce pour démontrer le clavier, où on va entendre le vibrato, une autre pièce où on va entendre des sons différents, une pièce avec le ruban, puis ensuite je fait un mélange de tout ça dans une pièce vraiment flamboyante. Et euh, tu sais de présenter ça et même quand on peut, quand les gens sont proches là, qu'ils sont pas loin, montrer les partitions pour les ondes [DS: oui]. Parce que quand c'est écrit pour le ruban on dirait des graphiques d'électro-cardiogramme, [rire] on dirait vraiment des graphiques! Alors là il y a des gens qui disent, oh on pourrait prendre des trucs de médecins et puis les jouer. Tout à fait, tu sais, c'est comme ça, c'est une manière d'écrire, alors tu sais les gens sont curieux, puis à ce moment là ça dépasse les Ondes Martenot, ça rentre dans, dans la musique, dans l'écriture musicale, puis qu'est-ce que ça donne comme effet sonore? Comment c'est écrit? Les gens sont beaucoup, beaucoup fascinés pas ça. Comment c'est écrit, est-ce que c'est écrit comme pour le piano? Euh, est-ce qu'il y a des portées? Ben oui, il y a des portées, mais pas toujours,

DS: Pas toujours...

GG: Pas toujours

DS: Ça dépend du compositeur?

GG: Oui. On a des partitions, on a une partition euh, pour 4 ondes et piano, de Serge Provost, une très belle œuvre, ça s'appelle *Les jardins suspendus*. C'est des grandes

pages comme ça là. Et euh, il n'y a pas de portées, on a fait ça quelques fois, puis à chaque fois c'est...on reprend la première partie, puis là c'est comme: qu'est-ce qu'on joue? Qu'est-ce que c'est que ça? Mais qu'est-ce que je fais...? À un moment donné il y a juste des petits points ici, puis là on a marqué des timbres, donc puis qui fait quelle partie. Puis là c'est tout à coup, quelqu'un essaye quelque chose: Ah oui, oui oui! Ok mais c'est parce qu'on a travaillé l'œuvre avec le compositeur au début, puis lui il a peut-être changé des choses puis...[rire]. Mais c'est pas standard du tout. Qu'est-ce qu'on fait avec ça?

DS: Jean Laurendeau m'a dit, pour moi c'est important que les compositeurs, euh, travaillent beaucoup avec les ondistes, et les compositeurs disent je veux un son comme ça ou, je veux un mood, un sentiment, une émotion comme ça, et puis les ondistes peuvent dire, hum [GG: je te propose ça ou ça...], ce timbre, cette technique, euh, c'est plutôt...

GG: un travail ensemble.

DS: oui.

GG: oui, Jean a travaillé plus avec les compositeurs que moi. Non, je pense que, en ce moment comment moi je vois mon présent puis mon avenir avec les ondes c'est de faire connaître l'instrument plus à travers ma musique à moi qui est une musique vraiment accessible, donc d'ouvrir comme ça, on appelle au Québec Mr et Mme tout le monde, euh, peut connaître les Ondes Martenot, comme à un moment donné, un jour il y a eu [Gheorghe] Zamfir qui a fait connaître la flûte de pan, tu sais? On aime ou on aime pas, mais maintenant tout le monde connaît la flûte de pan. T'sais? Alors c'est un peu la même chose, si à un moment donné il y a une grande vedette qui joue, euh, t'sais, de l'harmonica, ben t'sais tout le monde va connaître l'harmonica, ça, ça...moi j'ai vu à l'école de musique aussi, quand il y a des vagues, quand dans un groupe tout à coup il y a eu de l'harmonica, les gens appelaient pour prendre des cours d'harmonica. T'sais donc on fait connaître. Moi je me sens comme ça en ce moment, comme de rendre les Ondes Martenot accessibles, de rentrer dans la vie des gens d'une autre façon qu'à travers la musique contemporaine, parce que ça ça reste quand même assez restreint comme, euh, il y a beaucoup, des gens adorent ça, ceux qui aiment ça, aime ça beaucoup, puis ces gens là je pense qu'ils aiment pas ma musique. C'est comme des mondes séparés, puis c'est vraiment pas grave parce qu'il y a assez d'êtres humains sur terre pour tout sorte de musiques, je me vois comme ça pour, t'sais créer comme peut-être un engouement que les gens disent: ah



c'est beau cette musique là j'aime le son, et que là ils aient le goût d'apprendre, parce qu'on veut former, il faut qu'il y ait un relève.

DS: Oui, mais c'est un problème d'avoir un instrument.

GG: Mais là c'est ça. On a pas après l'Ondéa qui... puis qu'ils baissent le prix, [DS: oui c'est ça] puis d'avoir t'sais quelques instruments, même si on a, je sais pas 2, 3, 4 instruments qu'on peut mettre en location, si les gens peuvent louer l'instrument. Moi j'ai étudié pendant 5 ans au conservatoire avant d'acheter mon instrument, j'ai été 8 ans au conservatoire mais j'ai acheté mon instrument après 5 ans. Mais pendant 5 ans, j'allais pratiquer là, j'aurai jamais investi dans un instrument comme ça, donc d'offrir la possibilité à ceux qui veulent apprendre soit de se rendre sur un lieu où ils peuvent pratiquer ou de louer un instrument. Mais pour ça sa prend des instruments.

DS: Oui

GG: Il y a peut-être un mécène là quelque part, quelqu'un qui a suffisamment d'argent et qui croit à la cause qui va peut-être dire ok, moi je vais, euh, je vous donne l'argent, achetez 2 instruments [DS: oui, voilà]. Ça, ça serait vraiment, vraiment bien.

DS: Il y en a des gens mais où?

GG: Moi j'ai mis ça sur on site web, j'ai, euh, on parle de la société pour le développement des ondes musicales, ici au Québec, et, euh, j'ai marqué ça, que on a le projet de développer l'enseignement ici, et qu'on a besoin d'acheter des instruments. J'ai marqué, euh, on cherche des gens qui sont prêts à donner pour ça. Et j'ai marqué chaque instrument coûte environ 20,000\$ [rire]. C'est comme, t'sais la personne qui disait: oh, j'vais donner un petit 20 piasses [piastres], t'sais c'est comme...ça va en prendre beaucoup, beaucoup, beaucoup. Mais c'est comme ça tranquillement qu'on commence à [DS: oui, c'est vrai] à mettre un fond dans quelque chose, je me suis dit, je le mets sur mon site puis, euh, on sait jamais [DS: oui peut-être qu'un jour], on sait jamais. On va voir on sait pas ce qui va arriver, c'est sûr que si on demande pas, si on publicise pas, il se passera pas grand chose. À un moment donné on prend les rêves, puis on les...on les passe par la parole ou par l'écriture, puis le web, ben, c'est international, hein?

DS: Oui, oui, ben j'espère que ça va se passer, oui.

GG: Ça serait vraiment bien.

DS: Oui, moi aussi je voudrais un instrument pour moi, pour apprendre, mais aussi un pour le département de musique à Leeds. À l'Université.

GG: Leeds, c'est où en Angleterre?

DS: C'est 2 heures en dehors...

GG: Au nord de Londres?

DS: ...de Londres

GG: Oui

DS: Oui. Donc euh...

GG: Ça fait longtemps que tu étudies là?

DS: euh, c'est la troisième année. Je viens de la Belgique et quand j'avais 24 [ans] j'ai appliqué pour une position à l'Université, hum, donc j'enseigne la musique populaire pour 50% et 50 %, c'est des recherches sur les ondes. Mais je, dans mes classes, j'essaie de...j'ai des exemples pour, beaucoup d'exemple de musiques électroniques et d'instruments électroniques c'est les ondes pour moi, donc c'est très agréable, et les gens sont très intéressés aussi. Donc il y a beaucoup de modules, beaucoup de classes dans le système de Bachelor de musique où les ondes seraient très intéressantes à utiliser, il y a des classes d'ensembles, des classes, euh, de projets pratiques. Il y a beaucoup d'opportunités d'utiliser les ondes et de les apprendre aussi. Donc, euh, c'est très, très intéressant. Mais on a besoin d'argent.

GG: Ouais, c'est ça. Ouais c'est important le travail que tu fais, c'est important le film de Caroline. On a tellement vu, moi j'ai vu une différence, les gens connaissent plus les ondes, puis plus le film va se promener plus c'est bon pour l'instrument. On dirait que les gens qui voient le film deviennent touchés par, euh, tu sais la beauté de toute l'histoire dans ça, justement le, la sensibilité des ondistes par rapport à l'instrument, t'sais, toute la philosophie qui est reliée à ça, tu sais quand Suzanne elle parle, et puis qu'elle...les philosophes et puis c'est quoi les ondes, oh, puis...[rire]. C'est tellement, c'est vraiment comme si c'est une part importante, ça part d'en dedans t'sais, de la personne, puis euh...

DS: Le film a une certaine sensibilité, une certaine manière de parler, de...*it has a way of telling the history that is, like a method of getting something accross that's not just the words, but also the music around it and the images...*

GG: Ah c'est beau, c'est beau, ben là je pense que je l'ai vu 9 ou 10 fois le film.

DS: Ah? Je l'ai seulement vu 2 fois.

GG: [rire] Je crois que, avec Caroline, je dois être celle qui l'a vu le plus souvent là, Là c'est une petite pause là c'est correct.

DS: Est-ce que vous avez joué beaucoup dans des contextes musicales [musicaux]

très différents, le répertoire classique, le pop, le jazz et peut-être plus expérimental? Vous avez parlé des pièces plus contemporaines qui étaient pas vraiment votre truc...

GG: Ça dépend lesquelles, ça dépend tout le temps, [DS: mm, mm] ça dépend tout le temps. Ben oui, j'ai fait, ben...avec l'ensemble d'ondes entre autres on a fait beaucoup de créations musicales, la musique, beaucoup de compositeurs d'ici. Et avec l'ensemble d'ondes on a fait aussi du répertoire classique. On a fait du Ravel, du Mozart, du Dvorak, c'est toujours plaisant, moi je...par rapport à la musique contemporaine, pour moi, c'est tout à coup, c'est de revenir à quelque chose de: ahhh, d'harmonieux, t'sais, où on peut vraiment, euh, t'sais que notre jeu peut...on sait qu'on joue ensemble parce que on sait où on s'en va. Dans la musique contemporaine des fois, on sait pas trop ce que le compositeur à voulu, puis souvent c'est des effets, on nous demande de faire des effets, alors on est plus dans une performance plutôt que dans un jeu, euh, le jeu de, ben de rendre la musique belle parce qu'on l'entend, on la connaît puis on sait ça doit ressembler à quoi puis on est touché. Euh, puis la musique populaire, j'en ai fait, j'en ai fait un peu, t'sais j'ai accompagné quelques artistes en spectacle, de la musique de film aussi, j'ai fait de la musique de film, euh,

[1:21:50]

DS: Est-ce que le rôle des ondes est différent dans des contextes différents?

GG: Euh, je me souviens que dans le film qui s'appelle *Aurore*, un film de Luc Dionne, c'est la musique de Michel Cusson, il cherchait l'instrument, un instrument particulier, il cherchait un sonorité, parce que c'est un film sur la violence faite aux enfants, une petite fille, vraiment, euh, tu sais la belle mère elle la torture vraiment alors, c'est très très puissant comme film, puis il y avait besoin de quelque chose de très tortueux, t'sais [chante] quelque chose qui va créer des effets comme ça, mais c'est très beau, hein, il y a des mouvements très très, euh, très mélodiques, euh, je pense qu'on peut entendre un extrait sur mon cd. Euh, donc lui, il cherchait quelque chose puis a pensé aux ondes. Il y avait un autre film aussi, en fait c'est une pièce de théâtre, je me souviens plus comment elle s'appelle mais, ils cherchaient aussi un effet pour, tout à coup il se passait quelque chose, il y avait comme un effet magique. Et j'avais proposé différents trucs, t'sais, et puis je me souviens plus qu'est-ce qu'on avait choisit, puis c'était vraiment pour avoir un effet, quelque chose t'sais? Puis je crois aussi qu'il y avait un film pour enfant qui s'appelle Hugo et le

dragon, et, euh, les ondes avaient été aussi choisies là dedans pour des effets, il y avait toute la mélodie au ruban, il y avait des belles choses dans ça. Mais des passages avec des effets, t'sais parce que les ondes c'est quand même très, euh, très, euh, polyvalent, au niveau, autant ça peut jouer dans le très très aigu, dans le très grave, euh, on peut avoir toutes sortes d'effets. Et c'est pratique quand on est dans quelque chose qui a des images, t'sais musique de film, des trucs comme ça.

DS: Donc c'est plus facile de comprendre ce qu'est l'émotion ou le sens de...

GG: Ça peut aider à soutenir l'image, ou l'émotion ouais, peut-être oui, sûrement...sûrement. Alors j'ai l'impression des fois qu'il y a des compositeurs qui, ils cherchent quelque chose, puis euh, ben il faut qu'ils connaissent les ondes, hein, des fois s'ils connaissent pas les ondes, ils y auraient avantage. Peut-être qu'on aurait plus de contrats, y en aurait plus un peu partout. Mais ça fait partie là de ce qu'on fait dans la découverte, les démonstrations, tout ça. Puis, euh, ben c'est sûr qu'il y a le grand répertoire avec orchestre, puis ça je joue pas souvent avec orchestre mais quand même j'ai des belles expériences, puis, euh, ça c'est tout le temps extraordinaire. Ça c'est des, pour moi là, ça c'est des beaux contrats, j'ai toujours adoré la musique d'orchestre, puis t'sais, il y a beaucoup de monde, puis souvent les ondes là dedans t'sais, ils ont, quelque part, même si c'est pas tout le temps à un moment donné, elles ont le chant par dessus tout ça là, ah, je trouve ça vraiment vraiment beau. Ça c'est des cadeaux ...

DS: est-ce que vous avez beaucoup, euh, est-ce que vous avez eu beaucoup de problèmes avec la position des diffuseurs dans un contexte orchestral?

GG: Dans l'orchestre?

DS: Oui

(1:25:11)

GG: Euh, ça dépend, moi j'essaie, je suis un petit peu de, comme Jean, j'aime bien mettre mon haut-parleur plus loin, pour qu'il puisse passer par dessus l'orchestre, des fois il y a des chefs d'orchestres qui veulent pas. Ils veulent pas. À ce moment là, euh, moi ça m'a été dit, euh, écoute, moi j'ai dit je pouvois balancer mon son, il me dit c'est pas ton travail c'est moi qui balance ton son, tu sais comme genre. Je trouve ça très, euh, pff, castrant. Moi ça m'avait fait, euh, d'ailleurs un contrat que Jean avait pas pris parce qu'il aimait pas le chef d'orchestre, moi je suis allé puis ouf, c'était pas facile. Mais en même temps je voulais faire le...ça a été une très belle expérience musicale, mais ça a été difficile humainement avec cette personne

là. Mais quand même, je regrette pas puis je me suis dit: ok, jusqu'où je veux jouer des ondes? Est-ce que je suis...je dis non, pour une question d'où je met mon diffuseur? En même temps ça limite la diffusion de l'instrument, puis je pense que j'en joue bien, et quand j'ai l'occasion comme ça d'aller faire des concerts avec des grands orchestres, j'y vais. De tout façon je ne joue plus avec les haut-parleurs Martenot. Alors de toute façon, souvent même je demande un haut-parleur là-bas, euh, parce que, pour pas transporter le mien, ça dépend où je vais parce que c'est quand même très lourd. Alors, euh, je croise les doigts que ça marche, puis, euh...on fait de la musique, on est là pour faire de la musique. Ouais [rire]. Mais je sais que Jean il est très euh, [bruit pour dire qu'il est carré/stricte].

DS: Oui je pense que, c'est normal pour moi c'est des sciences, que on a besoin du, de son propre son, des moniteurs pour s'entendre bien jouer, donc avoir les haut-parleurs, euh, les diffuseurs là quand on joue ici, ça me paraît, euh, je ne comprends pas.

GG: Pourtant, euh, pourtant quand on s'entend, mettons que le haut-parleur est loin derrière, puis si moi je suis en avant, moi je vais entendre probablement ce que les gens vont entendre dans la salle, donc moi je peux balancer mon son.

DS: Oui, oui, bien sûr, oui!

GG: Tandis que si c'est juste à côté de moi, je vais jouer, je vais avoir tendance à jouer trop doux, ou si je joue trop fort, ça va être trop fort pour moi, à ce moment là je vais tourner un peu, puis c'est assez directionnel, hein, les...à ce moment là les gens qui sont plus haut là sur le côté ils entendront pas bien, tandis que plus c'est loin, plus les gens entendent le son.

DS: Oui, je dirais plutôt que, Jean m'a dit qu'il y a certains, euh...

GG: Les chefs d'orchestre

DS: Oui les chefs d'orchestre, qui veulent que les diffuseurs sont à côté des gens, euh...

GG: Du public?

DS: Oui, donc juste au, euh, au [GG: devant là?] oui devant tous les autres de l'orchestre.

[1:28:40]

GG: On peut pas mettre le diffuseur en avant de soi, si le public est là je peux pas mettre le diffuseur là parce que là moi j'entends pas, je peux pas balancer du tout. Ou pire, il va être là, je suis là, le public, moi là, mais là [? 1:28:54]. Mais ça, ça

m'est pas arrivé encore. J'ai vu une fois un concert d'une femme qui jouait des ondes ici aussi, puis elle s'était organisé un petit concert avec piano tout ça, puis elle avait mis ses diffuseurs en avant d'elle, puis c'était dommage parce que dans le fond elle avait pas un beau son, parce que je pense qu'elle s'entendait pas. Mais bon, c'est pas quelqu'un avec qui on a travaillé beaucoup. Puis c'était vraiment un projet personnel qu'elle avait, puis moi j'y suis allé, je me suis dit, écoute il y a un concert d'ondes je vais y aller. Mais elle a pas demandé l'avis de personne, tu sais elle nous a pas demandé, ah tu viendras écouter, nous autres tu sais, on se connaît, si je fais quelque chose je peux dire à Suzanne, euh, viendrais-tu entendre voir, pour la balance, tout ça puis elle, elle avait pas fait. Ce sont des expériences, on apprend, hein, quand on assiste aux expériences des autres. Des fois on se dit, euh, ah, pas gagnant! [rire]

DS: Euh, je pense que j'ai, j'ai posé toutes mes questions, ou, j'en ai toujours des autres mais, euh, je pense que c'est, c'est le...

GG: Ben si tu veux me rappeler, regarde là c'est pas loin, tu sais, si tout à coup tu as...

DS: Oui, mais je, je pars demain.

GG: Ah tu t'en vas demain, demain c'est, ah mercredi déjà?

DS: Oui, oui,

GG: Oohh. Ça a été rapide hein?

DS: Oui. Je sais, mais c'était seulement une semaine.

GG: Donc t'as pas rencontré Marie?

DS: Non

GG: Tu lui as pas parlé au téléphone?

DS: Je ne sais pas, je vais essayer. Mais j'ai beaucoup plus de focus maintenant que j'avais avant parce que j'ai parlé avec beaucoup de gens. Alors peut-être que c'est possible de lui envoyer quelques questions très...

GG: Précises?

DS: Précises.

GG: Est-ce que tu as rencontré Marcelle Lessoil?

DS: Non.

GG: Mais, on la connaît moins mais, euh, je pense qu'elle est belge aussi, je pas sûre Française ou belge mais elle vit à Montréal depuis longtemps avec son mari. Son mari vient d'être opéré, euh, une grosse grosse opération...mais elle, elle a un

instrument à lampe et elle est en musicologie à l'Université McGill. Puis, euh...

DS: Comment est-ce qu'on écrit le nom?

GG: Marcelle, euh, Lessoil, je sais pas si il y un ou deux 's', 'oil'. Daelman [épelle] ça c'est le nom de son mari, je sais pas quel nom elle porte. Marcelle est à Montréal, puis, euh c'est pas qu'elle fait des grandes choses, je connais pas son niveau non plus, mais elle a étudié, je pense avec Martenot.

DS: Je ne savais pas, c'est la première fois que je, que j'entends...

[1:32:11]

GG: Mais on l'oublie souvent parce que...ben tu vois je lui ai envoyé comme vraiment la veille de mon lancement de disque j'ai pensé à elle, j'avais pas ses coordonnées, finalement c'est là que, par Jean je les ai eu, elle m'a écrit qu'elle s'occupait de son mari qui sortait d'une grosse grosse opération. Il y a Louise Larose, aussi, elle je pense que maintenant elle fait de l'arthrite, c'était les dernières nouvelles qu'on avait. C'est elle qui avait fait l'expérience de mettre son haut-parleur en avant d'elle quand [inaudible (1:32:38) DS: ah oui, oui] ça fait très très très longtemps, on avait fait le disque la *Fête des belles eaux* avec elle, elle était comme la sixième onde, on était allé à Minéapolis avec elle, avec tout l'ensemble, six ensembles. 17 caisses d'Ondes Martenot à l'aéroport, [DS: 17?!] Oui, ah c'est complètement fou, j'ai un photo, je peux te montrer. Puis à Montréal on passe la douane américaine, à Montréal, puis là ils nous avaient demandé, tu sais ils passent leur [? Indistinct 1:33:13] détecteur, quand ça fait bipbip ils disent ouvrez, tu sais. Tu sais il voulaient qu'on ouvre nos haut-parleurs, nos diffuseurs, nous on était là: mais, mais on peut pas! C'est un instrument de musique tu sais. Puis là ils rentraient ça dans le convoyeur, ça montait, puis là ça passe dans les rayons X, puis là de l'autre côté là, [makes sound] *tchichichichik*, puis là on était là, on attrapait nos instruments, puis ah! C'était...et là ça a été tellement long, puis là on entendait les passagers, euh, Binet-Audet, Grenier, Laurendeau, puis là on courrait dans l'aéroport, tu sais comme dans les films, [DS: oh non...] [rire] en tous cas c'est drôle, attends, je vais te montrer. Dans les photos...

DS: Oh,

GG: On est à Montréal, ça c'est Louise Larose, Marie là, ça c'est Estelle, ben t'as rencontré Estelle?

DS: Non elle n'est pas ici, [GG: ah bon?] Elle n'était pas disponible mais elle m'a dit vous pouvez toujours me donner les questions par courriel. Donc euh... J'ai du

respect pour ça c'est pas...parce que les ondes, c'est très...on doit toujours, il faut toujours, euh, faire des démonstrations et toujours en parler, et je comprends que certaines personnes ne veulent pas, ou pas toujours, donc...j'ai un album d'elle..(GG: ondes?) oui *ondes*, donc, euh, il y a beaucoup de...

[1:35:42]

GG: Ouais puis c'est beau, t'sais elle joue bien, puis t'sais, elle, elle aime beaucoup la musique contemporaine, elle est compositeur donc, t'sais c'est une bonne personne pour présenter les ondes d'une manière moderne, dans le répertoire, t'sais je trouve c'est bien, t'sais comme on parle de réouvrir une classe au conservatoire, tout ça puis, mais moi je vais pas aller là t'sais. Elle c'est parfait, on travaille là dessus puis, t'sais, on essaie d'ouvrir l'espace pour Estelle, pour aller enseigner là, parce qu'en plus elle est compositrice, elle va faire des liens avec les compositeurs, elle va créer de la musique d'ensemble, t'sais, moi je suis pas là dans la vie là, j'ai d'autres choses à faire, je veux travailler avec l'être humain, je travaille...je fais de la biodanza, t'sais c'est euh...

DS: [inaudible] ?

(1:36:32)

GG: Biodanza, c'est euh, c'est une approche de développement humain [DS: ah oui?] qui utilise la musique, le mouvement, puis d'être avec d'autres, c'est de recréer des conditions, euh, les conditions de notre épanouissement, de pouvoir être, exprimer qui on est vraiment. Donc, il y a toutes sortes de musiques, de toutes sortes de styles mais qui viennent nous toucher de différentes façons, pour qu'on laisse bouger dans notre corps, c'est fascinant, c'est fascinant. Il y en a sûrement en Angleterre, biodanza...

DS: Je vais le chercher.

GG: Ah oui c'est euh, viens on va faire un tour là, je vais voir, je suis curieuse, parce qu'il y en a je crois dans 13 pays, il y en a en Belgique.

DS: Ah oui!?

GG: Je suis sûre...bourgogne, Angleterre biodanza...il y en a en Suisse...Ah Angleterre, Bristol...je sais pas si...

DS: C'est un peu loin de moi mais...Ah je vois...

GG: C'est pour permettre la réhabilitation de nos capacités affectives, d'être en contact simple avec soi même puis avec les autres

DS: Oui, c'est très nécessaire en Angleterre [rire]



GG: Ah c'est nécessaire partout!

DS: Oui c'est vrai

GG: Partout, partout, partout, partout! Moi je fais ça maintenant je suis facilitatrice de Biodanza, et c'est...j'aime tellement ça, de A à Z là, wow. C'est pour ça que les ondes c'est moins, euh, c'est moins ce que je veux faire maintenant, bien que, t'sais, je sors un album et ça va probablement susciter des concerts, puis c'est super, j'ai le goût, mais, euh, pour moi en ce moment je passe là. On va sortir ça, on va essayer de toucher des gens, je veux passer mes connaissances, si il y en a qui veulent prendre des cours super.

[1:39:26]

DS: Mmm, mmm. Qu'est-ce que vous pensez de l'utilisation des ondes dans les classes de thérapie...psychologique ou autre chose de thérapie?

GG: Ben, les ondes ça a un pouvoir de toucher, les gens ils sont pas en contact avec ce qu'ils sentent, alors n'importe quoi ou n'importe quel instrument qui peut aller réveiller quelque chose dans quelqu'un c'est parfait. Les ondes ont ce pouvoir là. Les bols tibétains qui sont des choses qui sont utilisées, Marie d'ailleurs elle fait ça, elle a un disque, vraiment plus méditatif là, qui peut amener dans des états de...un état de calme intérieur, alors t'sais, voilà. Là c'est sûr on est dans les ondes là, le pouvoir des ondes, le pouvoir de la musique finalement, c'est de trouver la musique ou l'instrument qui a la capacité de susciter ce qu'on a en nous, mmm.

DS: C'est intéressant que presque tout le monde que je connais qui joue les ondes, je vous l'ai déjà dit a, un certain calme et un sens de pas vraiment de méditation, mais une présence certaine et calme, et ouverte et, c'est très...

GG: T'as parlé à des gens...même ailleurs dans le monde?

DS: Euh, j'ai rencontré quelques personnes à Paris aussi, mais c'était le, je ne sais pas vous connaissez, le FEAM? La fédération des enseignements artistiques Martenot. Donc c'est une fédération pour tous les cours des arts, de relaxation, de piano et les ondes, et il y a un jour par année, qu'on se rencontre à Paris et ils donnent des workshops et ils parlent de l'administration et de protéger le nom Martenot pour les enseignements spécifiques de techniques Martenot, et des choses comme ça et...oui tout le monde était très, oui, il semble que ça attire certaines personnalités. Je ne sais pas si c'est juste les personnes que j'ai rencontrées mais, oui.

GG: Je sais pas est-ce que tu vas aller au Japon aussi ?

DS: Euh peut-être l'année prochaine.

GG: Parce que là c'est intéressant d'aller voir une culture complètement différente puis là tu pourras voir, bien que les japonais il y a quand même une culture un peu zen aussi, euh, peut-être on va voir.

DS: Oui. Il y avait quelqu'un d'autre qui m'a dit que les ondes sont parfait pour la culture japonais, c'est... *it fits perfectly in the culture.*

GG: Ah oui.

DS: Donc euh.

GG: Parce que sinon, il y en a en France, il y en a en Angleterre, au Japon, il y en... où est-ce qu'il y en a d'autre des ondes, en Allemagne est-ce qu'il y en a?

DS: Je ne sais pas, je n'ai pas encore...

GG: Il y en a au Québec, bon aux Etats-Unis, c'est naissant, dans quelques années ils vont être bons. Sinon, il y en a pas en Australie, il y en a pas en Russie, il y en a pas en Chine.

DS: Non, non, pas encore. Est-ce que vous pensez que c'est vraiment nécessaire que les... les gens qui savent les ondes qui sont des ondistes enseignent les autres tout le temps, ou est-ce que vous pensez que acheter un instrument sans enseignement euh, est intéressant aussi? Non?

GG: Non. Pas du tout. Oh non parce que les gens vont être très limités, ils vont bien vite découvrir que ça sonne pas comme ils entendent, ça prend au moins un minimum de cours. Il y a une femme avec qui on avait joué à San Francisco, puis elle avait son instrument, ben elle jouait avec nous dans l'opéra, il y a trois ondes dans l'opéra de... puis on était dans le passage tellement diaphane avec les anges là, et puis elle y arrivait pas. Puis à un moment donné je lui ai demandé j'ai dit, où est-ce que tu a appris les ondes? Puis elle était toute fière en me disant: oh, oh, j'ai fait un master-class avec Jeanne Loriod une fin de semaine. J'ai... une fin de semaine en master-classes!? J'ai fait 8 ans au conservatoire, bon après 5 ans je jouais bien là, mais j'ai poursuivit. Une fin de semaine! Alors t'sais, une très très bonne pianiste, chef d'orchestre, mais tout la délicatesse, la sensibilité, les petits exercices elle les a pas eu, puis elle les a pas travaillés. Alors il y avait pas la possibilité de...

DS: Mmm

GG: Alors c'est important [DS: c'est important] c'est important que ça, t'sais, ça soit enseigné pour qu'au moins que la personne elle sache que c'est possible. Sinon le problème c'est que on pense qu'on est pas bon. Hein, moi la première flûte

traversière que j'ai acheté là, c'était vraiment de la merde, et j'avais l'impression que j'étais pas bonne jusqu'à tant qu'on me dise: c'est ta flûte qui joue pas bien. Achète toi une bonne flûte tu va voir ça va aller mieux. Puis J'ai changé de flûte puis effectivement j'ai dit: ah! C'est pas moi qui ai un problème! Oui alors, c'est ça aussi, il ne faut pas que les gens se disent, ah mais je suis pas capable de jouer, il faut se donner les outils aussi. L'instrument est là, toi t'est là mais il faut que tu saches quoi faire, quoi développer pour arriver à...l'enseignement c'est super important. T'sais c'est pas important d'arriver à des niveaux t'sais, international, t'sais tu me dis que t'as pas le niveau international professionnel, moi, je l'ai pas du tout, en flûte non plus, mais c'est pas grave on a du plaisir à jouer. Puis tu sais on peut très bien jouer d'un instrument sans être capable de faire les affaires archi difficiles tu sais? Puis les ondes c'est la même chose, on peut être très capable de faire quelque chose très bien puis avoir du plaisir, puis d'être capable tu sais de faire des contrats. Bon, est-ce que c'est ces personnes là qui vont faire les grand concerts avec orchestre, ou euh...

[1:47:14]

DS: Oui on peut voir Jonny Greenwood qui a une technique, euh...

GG: De base.

DS: Oui mais...[rire]

GG: Mais il donne envie aux autres d'en jouer.

DS: Oui, oui

GG: En même temps il s'entoure, j'ai vu une vidéo où je pense il y avait 5 ondes! Où tu sais il était avec Thomas Bloch, il y avait euh, c'était Valérie Hartmann qui était là, je sais pas si c'est...il y avait Dominique Kim, il y avait un autre ondiste que j'étais pas capable d'identifier, plein d'Ondes Martenot. Puis t'sais il s'entoure, il aime les ondes, puis il génère quelque chose, il met des gens qui savent vraiment bien en jouer avec lui, puis ça ca rehausse tout, tout l'aspect des ondes dans cet, comment ca s'appelle? *How to disappear*, je pense.

DS: *How to disappear* oui oui

GG: C'est ça,

DS: Ouais.

GG: On l'a fait à Pittsburgh, on l'a fait avec l'ensemble puis, euh, c'était beau, il y avait une chanteuse. Ça va être disponible à un moment donné, je mettrai ça sur mon site. Puis, euh, ben oui c'est ça t'sais, alors il permet aux gens de découvrir encore plus les ondes, surtout quand il y a des vidéos comme ça où là les gens

voient: oh il y en a plusieurs, puis tout le monde est calme, puis lui il est là puis [seems to gesture] [rire] et là il bouge il bouge, pour rien t'sais.

DS: Oui, comme il joue de la guitare, oui.

GG: C'est une vedette ! Non mais c'est correct regarde, ça prend les vedettes, t'sais, ça fait des groupies, puis les groupies font: Ahhh, et elles découvrent puis là elles ont envie de plus. C'est correct, c'est drôle, puis il est super sympathique, on le voit dans le film, il est tellement sympathique [DS: oui], il est attachant, puis euh...

DS: Oui mais je pense avec son technique c'est pas très, euh, ça ne...ça n'est pas trop détruisant? Pour le...

GG: Ça va dépendre de qu'est-ce qu'il fait.

DS: Oui

GG: Ça va dépendre, puis tu sais comme dans le film, on l'entend jouer aussi puis c'est avec l'espèce de petite onde que lui a fabriqué...

DS: Ah oui le *French Connection*, ou le modèle de Jean-Louis Martenot?

GG: Non, non, lui en fait il dit dans le film qu'il a fait son instrument puis c'est polyphonique.

DS: Non c'était un des instruments de Jean-Louis Martenot, qu'il a fait après la mort de son père et ça a...ça produit le son par une carte HP, donc c'est digital, et c'est, euh...

GG: Polyphonique

DS: C'est polyphonique, il y a 4...euh, je pense, euh, mais c'est un des modèles d'étudiant je pense de Jean-Louis Martenot.

GG: Ok, pourtant il y en a un tout petit qu'on voit, mais il me semble que quand il parle à Suzanne il lui dit que lui a fabriqué celui là, parce qu'on voit c'est pas Martenot là. C'est plein de boutons, c'est comme si lui s'est fabriqué quelque chose...

DS: Peut-être c'est, c'est pas le French Connection?

GG: Je pense que le French Connection c'est le petit modèle étudiant, il sort d'une boîte, le montre à Suzanne...

DS: Oui, c'est, c'est...

GG: C'est ça, mais l'onde sur lequel il joue puis qu'on entend, c'est ça c'est très euh, moi si j'avais entendu ça dans un autre contexte j'aurais dit c'est un synthétiseur. [DS: mm, mm] Parce que justement il arrive pas à avoir la finesse, [DS: non] [chante] tu sais c'est très grossier un peu, bon.

DS: C'est le seul qu'il a trouvé, à Paris, je pense que c'était les années 2000 ou [19]99, dans un *attic*?

GG: Ah oui dans un grenier?

DS: Oui, à Paris. Et, oui, il n'y avait plus que ça donc...il a découvert les ondes par la *Turangâlila Symphonie*, mais il en a...mais c'était plus de 10 ans après qu'il en a trouvé un et c'était un modèle de...pas de Martenot lui-même donc. L'année passée il a acheté un Jean-Loup Dierstein, donc, il est très content. Je l'ai vu le week-end passé, je lui ai parlé un petit peu pendant une ou deux minutes, et je l'ai demandé, posé la question, comment est-ce que...tu peux faire une comparaison? Mais il a dit j'en ai juste joué un original pour peut-être 5 minutes, et mais, mais, ce que j'ai maintenant c'est magique, c'est génial. Donc.

GG: Mmm. Est-ce que tu vas avoir plus de temps avec lui pour ton étude?

DS: J'espère. J'ai dit que j'irai à Montréal et il a des concerts, euh, il y a un *screening* de *There will be blood*, in, en Août, à Londres et j'ai dit que je le ferai, et j'espère quand j'envoie un courriel au management que c'est possible de parler un petit peu mais je ne sais pas, il est très...

GG: Occupé.

DS: Oui. Il n'aime pas beaucoup les entrevues et les...je sais pas.

[1:54:22]

GG: Mais là c'est...c'est pas lui c'est les ondes. Moi c'est ce que je vois dans ça, t'sais c'est pas euh...c'est à propos des ondes, c'est ça qui est important je trouve [DS: oui, c'est ça] c'est pas un trip [truc?] de...[DS: non, oui, donc] puis en même temps d'avoir des gens connus, c'est bon t'sais, c'est euh...

DS: Oui, je pense qu'il a l'impression que c'est pas lui qui est important, qu'il veut juste supporter et donner des concerts avec l'instrument, parce qu'il a le coup de foudre aussi, mais je pense qu'il n'aime pas beaucoup toute la publicité et tout ça.

GG: Pourtant c'est ça qui est bon pour les ondes, faudrait qu'il comprenne ça [rire]

DS: Oui.

GG: C'est très important parce qu'en ce moment c'est lui qui touche toute la jeunesse.

DS: Oui.

GG: Puis c'est ça c'est pas à propos de lui, c'est à propos des ondes.

DS: Oui.

GG: C'est vrai qu'à partir de ce moment là c'est plus facile de se dégager de dire

Ah! Quand on sort de soi tu sais c'est pas...

DS: Est-ce que vous avez votre instrument ici?

GG: Il est pas monté, je l'ai pas monté [rire] depuis le lancement il est dans le placard parce que la maison est à vendre ici puis j'avais des visites, alors c'est tout...tout est dans les boîtes et puis j'ai un peu peur de...mais moi quand j'ai pas un projet je joue pas vraiment [DS: ah?], t'sais je suis pas...parce que très occupée

DS: [1:56:33: indistinct] si fragile et beaucoup de problèmes?

GG: Non ben en ce moment, non mais j'ai jamais été une grande pratiquée, je pratique quand j'ai un concert ou un projet. Mais là il va falloir je le remonte la semaine prochaine on a le concert à mon école de musique, on a 3 concerts avec les élèves et on va faire une demi-pièce dans chacun des concerts, et comme je viens de sortir mon album on va parler de mon album aussi aux parents puis en même temps ça fait 25 ans à mon école, on fête les 25 ans donc c'est quand même un petit peu une fête, donc on va faire aussi une pièce avec les élèves et les professeurs donc moi je vais faire des petits passages aux Ondes Martenot là dedans, donc c'est un belle façon de faire connaître les ondes aux gens, puis, euh, alors je vais devoir le remonter puis pratiquer un petit peu. Pour être prête là mais...sinon euh, on va voir il est question peut-être qu'il y ait le film à Calgary cet été [DS: ah ouais]. Donc on va voir si on peut essayer de faire organiser un concert en même temps.

DS: Ouais, ah c'est bien

GG: Ouais. On travaille là dessus.

DS: Ah, je pense que c'est ça, merci beaucoup

GG: Ben ça me fait plaisir

DS: Pour votre temps

GG: Ça me fait plaisir

DS: Voilà

[end of interview]

## Appendix J: Interview with Jean Landry

Landry's home, Québec, 23 May 2014

DS: Could you, to start, talk a little bit about how you got into this business and what you were doing before?

JL: OK, well my formal training is an electronics technician, and in parallel I've worked a lot in audio recording, sound reinforcement and stuff like that. In the early '80s, a friend of mine, a guy I used to study with back then started working for the music conservatory in Montreal. He was in charge of audiovisual. And for that reason he started being the only person with any technical electronic skill in the place. He was in charge of maintaining the two instruments they had there. He started doing maintenance of the other ondistes' instruments. So he did that for a few years, and then after a while I guess he got fed up with it, because it can be very demanding, and it can be very tricky. So he got fed up with it, and he was not that interested in the technical aspect of his work, so he asked me to take over for him, which I did. That was Gaston Lemieux, that would've been '86-'87. He used to be Suzanne's boyfriend years ago. So he asked me to take over, and just a few months later, they decided to open a new job at the conservatoire. And since it was a music and drama conservatory, he decided to stay in the drama part and I was hired to work on the music part. So from that moment on I took full-time maintenance work on the instruments. Basically that's how I got involved in that. And during that period I got involved not only in the maintenance of the instruments, you know, the tuning and stuff like that, but also in trying to in a way improve and modernize the instruments, because of the reliance that we were forced to have on the availability of parts, and some very specific to the instrument. It was a major problem. At one point some electronic part became unavailable. Even searching the net for out of stock parts... we couldn't find it. We reached a point where we had to do something, otherwise the two instruments that were not working at that moment could not be used anymore.

DS: Which parts were those?

JL: It's a small- it's inside this thing here, it's called a logarithmic amplifier, and one of the characteristics of that component is that it has to operate at a very stable

temperature. Maybe you've noticed that when you turn on an instrument, if you hold the key, the pitch increases progressively, until it gets to the point where it becomes relatively stable. This is the part that does that. There's a little heating element, the *four* they call it, a little oven, and a control system that keeps it at a stable temperature. What you see is a little cap to keep the heat inside. But the component here was not available anymore, and for that reason two of the instruments were dead, couldn't be used at all. The tone generator doesn't work anymore. So that's how we got involved in the current project of modifying the instruments.

DS: So whose were they?

JL: One was Jean Laurendeau's, and the other was property of the conservatoire, and it's still- that one hasn't been modified yet and is still inoperational.

DS: So what did you decide to change about this-

JL: So, first of all there had been a previous project in which the previous guy, Gaston, got involved. He got a grant from I think the Conseil des Arts et des Lettres du Québec. They got a grant, and there- he was working with another guy, and their intention was to create a completely different tone generator system that would be more reliable, more stable, so on and so forth. So that didn't turn out very well because let's say the other guy ran away with a bit of the money. So the project didn't work that well. So a few years passed and Suzanne kept hoping to be able to get some money to work on their projects, so it was decided when she finally got the money- well no, before that because we had to present our project as it would be...

(DS: To get the grant.) Yeah exactly. So it was decided that we would address the two major problems of the instrument: all the little bags alone, leather bags with the powder, *la touche d'intensité*, and the pedals, the vibrato which was a problem because it's actually a mechanical part on the original instruments and it wears out fairly quickly. So it's three aspects in fact: the *bague*, the vibrato, and the stability of the tone generator, the log amplifier, which was not available anymore. So we had to find a component that would do exactly the same job better and more stable, would get to up to the temperature more quickly, and would be made out of components that would be easily findable even in the fairly far future. (DS: Yeah.) So that was the main goal. The principle was accepted.

DS: So was this early '90s, then?

JL: No, that would have been, um. The whole project started I would say 2007. Yeah. My part of the project, 2007. Then the grant was accepted and after that I



started working on designing the circuitry Shall I talk about this part now? (DS: Sure, yeah.) The idea was to- because one of the things that all the ondistes feared a lot was that the tone of the new cards if you want to call it that, the circuitry would be different. And they're very touchy picky about that subject. So I said listen, what we'll do is that I will copy the tone generator circuits in their integrality and it's going to be exactly the same, there is going to be no difference there. So the tone will be the same. I mean there can be small variations due to component precision. Like sometimes it's one or two or three percent depending on the component. But I mean the tone is basically going to be the same as the original instrument. So we agreed to use the original tone generators, an oven that would be of a different conception, but that's just one of the parts that's integrated in the tone generator so it doesn't affect the tone at all. All it does is make sure that the scale of the instrument will be reliable. So if you go from one A to the other, that's going to be exactly one octave. (DS: Yeah) And it would have to be adjustable. It would have to be reliable and made of standard components. And then we would have to find a technical solution to replace *la touche* and the pedals and the vibrato. So the approach that was taken for that was to use what we call 'Hall effect sensors', which are tiny little components that are sensitive to magnetic fields. The little black thing here [shows]. If you take a magnet, a small magnet here. Of course they stick together. If you take one and move the magnet progressively closer to that component, there will be a voltage to the output that will be proportional to the distance. OK. So depending on whether you present the north face or the south face of the magnet, the voltage is either gonna go up or down. It's basically supplied by five volts. The standard position is 2.5 volts, and when you move the magnet around you just vary between 0 and 5. So that's the way it works. So we use that voltage to control. We call it VCA, voltage control amplifier. So this would be under the key itself, under the *touche* where we glue a small magnet, and this can be adjusted, the height can be adjusted, and there's various parameters or external parameters that can be adjusted, too. So when you move the key you just vary the output voltage and then control the VCA, the voltage control amplifier. (DS: Uhuh.) So that was the most simple and effective way to modify the *touche*. One of the aspects that was very important is the feel, the actual feel of the *touche*. (DS: Yeah.) Again, because they're used to this little leather bag with a powder in it. So at first I thought well, we'll just use a little leather bag with sand in it, and all of this is going to be there just to give them the feel that

they are used to. And all it was going to do is get closer or further from the Hall effect sensor. Turned out that it was not necessary. So we decided to go for little pieces of foam instead, of various densities. So we just built a sandwich of foam that we put between the frame and the *touche* itself and it gives a very progressive feel, it's perfect for them, they like it. So that would be it for the *touche*, and for the vibrato, well we use the same principle. In this case, instead of having just one sensor, you have two sensors here and you'd have a magnet that would be between the two of them. So basically the magnet- when you move the keyboard sideways, the magnet would be getting closer to one and further from another the other one, back and forth like that. And that signal is interpreted by a small circuit that will simply vary the frequency of the oscillator: the pitch. So once again the advantage of that is that it's perfectly stable, doesn't wear out, there's no mechanical parts, it's totally adjustable. You have small potentiometers elsewhere in the circuitry where you can determine- if you want to have a vibrato- effect that's a quarter of the tone, you can have it. If you want to have an octave, either way you can have it. It's totally adjustable.

DS: Okay. So can the players adjust it or do you have to open the...

JL: You have to open it. Yeah. I mean, if we had been building a new instrument the controls would have been on the drawer itself but we can't afford to do that. You know, the idea was just to replace the original boards and improve the instrument, so it would have been great to do that. But we couldn't do it. (DS: OK.) So those were the improvements that were made to the instrument. You see, the original component that would do the vibrato would have been these resistors, they are called wire wound resistors. So you have this very thin copper wire that's insulated. There's a very thin coat of varnish on top of the copper. So they just coil it around this Bakelite form. There is a contact at each end. So they solder one end of the wire to one here and then at the end they solder the other one here, and then they just use a piece as a small piece of sandpaper and just remove the varnish on the sides here. So basically on the instrument what you have is a little clip that makes contact here. And by moving like that when you do the vibrato, by moving like that it varies the resistance. The value of the resistance. So it works and it worked for years. (DS: Yeah.) The problem is that you have to replace them frequently and they get dirty. You have to clean them. You have to adjust the pressure of the little springs. So it's very very tricky. (DS: Fussy, yeah.) So this is replaced by the second thing I showed

you. And see, these are in better condition, see? So they won't be used anymore. And then you've probably seen the bags.

DS: I haven't, not in real life(!).

JL: Okay so this is it. So they use a very soft leather and then there is an electrode at each side of the bag- each end of the bag. So this one here is removable. And you use a tiny little funnel that you screw on, and you have a little plunger so you put the powder in the funnel and you use the plunger to push the powder inside the bag.

There has to be a certain amount; too little and the electrodes will eventually touch and create very weird sounds. Too much, it won't compress enough and the sound will never get loud enough that you won't have the normal progression that you would have. And one of the problems is that with time- let's say the composition of the powder is graphite, mica and cork. It's a combination of those three elements.

We don't know what proportion (DS: That's- yeah) That's the problem. Even, I guess Jean-Louis Martenot, I think even he doesn't remember it well because the last bags that he sold to the artists were not good at all. So I guess either he didn't get the right products or he was doing something wrong. So the finest of the three elements being the graphite powder, it eventually oozes through the pores of the leather so you end up with not enough graphite inside the bag. (DS: So it's not conductive enough.) Exactly. So you have to press a lot harder on the *touche* to get a certain value of resistance which corresponds to a certain level. So not very good.

DS: But I suppose today if you would have the right amount of each powder you could have another soft tissue kind of thing that wouldn't let the graphite through-

JL: Possibly. Possibly. That was the only available solution when Maurice Martenot did that in the '20s. In fact it's a solution that is still used in the industry nowadays. If you have a sewing machine, the panel for a sewing machine is exactly the same principle. But instead of being a power it is going to be small discs of graphite that you press together to decrease the resistance. So it's a technology that works. There's two downsides to it. There's nothing adjustable except by changing the proportions of the various elements, and it will wear out with time. Sometimes the bag literally explodes and they end up with a patch of black powder on their hands or on the floor. (DS: Wow.) So anything that's mechanical will wear out. And this one has the additional disadvantage of not being adjustable. So by having something that's fully adjustable and that uses no mechanical parts whatsoever, it gives you a lot more freedom, a lot more possibilities. To give you an example: none of the *ondistes* have

the same preference when it comes to the *touche*. Some like it very soft some like quite hard. Some like it to have to start quickly and then progress slowly. Others the opposite. So I mean, it's a gamble. You get a bag, you put it in and if it's not what you want you're stuck with it. Whereas with the electronic circuit, well, you have all those little potentiometers, that are these little blue things with a screw on top, well these are all adjustments. So you can do a lot of adjustments on the instrument to suit the specific needs of the player.

DS: And do you still have the difference in foam as well?

JL: Yes, so the nice thing about that is that you can totally dissociate the actual mechanical feel and the reaction, so you can adjust one and then adjust the other. Normally what I do is I use two types of foam. Just very standard draft extruder for windows. So I use a piece like that [demonstrates] and then I use another one, this one, which is softer, easier to compress. So that one would be on top and gives the initial feel and then when you go further — exactly like it would on the bag — it gets harder to compress. So the first one compresses completely, and then it becomes hard enough to start compressing this one. (DS: Wow, I see.) So that took care of that problem. Would you like to keep one?

DS: Oh yes! I'd love one.

JL: I have a bunch of those. I'm never gonna use them. The resistance, too. (DS: Thanks.) One thing we would have liked to do when we got involved in this project — and it would have been too involved and we had an unlimited amount of money — so the other mechanical part of the keyboard that can be a problem is the *ruban, la bague*. Which is essentially a multi-turn potentiometer. You know what a potentiometer is? (DS: Yes, I think I know enough about it.) Normally a potentiometer would be like 270 degrees, like that. These do 10 turns from one end to the other. So basically what you have inside is a little bit like that resistor here, except that it's one on a round core. And the shaft is actually a screw that has a little carriage on it and the carriage touches the resistor. So by spinning that, you actually make the thing move inside. So once again it's fully mechanical. And when you see what kind of work they do on the *bague* you can move around very quickly, like a thousand times in a single piece, well eventually it wears out. And on top of that— can you hear, there's a mechanical noise, so they hear the mechanical noise. It is also amplified by the cabinet of the instrument, so it can be a problem. It can really be a problem. So the idea would have been to try and replace that by a different

technology, but that would have meant going into digital circuitry and that would have made things very complicated, and we didn't have the room to put it in. And also the budget. So we decided to stick with that, since it's still a decent solution for what they do. It works well and a good quality potentiometer will last maybe five or six years and will cost about fifty or sixty dollars. (DS: Okay.) So it's not such a big deal. I mean compared to the problems that they had with the vibrato and with *la touche*, it was a lot better.

DS: And the pedal? Is-

JL: The pedal uses the same type of *bague*, the difference being that the recipe is different. Of course your foot will be able to apply a lot more pressure and is a lot less refined in its movement than your finger is, so the powder required will have I suppose less graphite in it than the powder for the *touche*. Yeah same thing for the filter panel. And for the tube instruments it was different also, since a tube instrument has a much higher working impedance. The recipe was not the same. So you actually had four types of powder. So for a transistor instrument, *touche* and pedal, and for tube instrument, *touche* and pedal.

DS: So I'm assuming that this is all from transistorised instruments. Jean Laurendeau's and that of the conservatoire. Have you worked with lamp instruments?

JL: Yeah, that one is a tube instrument. It's not possible to- well, nothing's impossible, but it's not practical to modernize a tube instrument. It can be restored like David Kean did in Calgary, but it remains a museum piece. You know it's very unstable, it's very unpredictable, very capricious, you know, and you never know what it's going to be. (DS: Temperamental...) And a bit like any other keyboard, string keyboard, each note needs to be tuned independently, whereas on the transistor keyboard it's a whole keyboard and you have adjustments at each octave step. And that's about it. The scale is fixed. So I mean, restoring one for historical purposes is interesting but using one as a performance instrument is a major headache. So I do work on one from time to time because there's a few around, and people like to play on from time to time. Since they had the basically the same problem with the powder, what I did is that I did the first one last summer and I'll be doing another one this summer. I modified a tube instrument to have an external circuit that operates a Hall effects sensor *touche*. So it's a small external box with an external power supply and there's just a connector that connects to the side of the

drawer, and it replaces the original powder. (DS: OK, so it goes around that level-)  
JL: Yeah, exactly. So there is no modification to the instrument other than the small, the ion connector here that appears on the side of the drawer, and if you look inside two wires have changed place and there is two wires that have been put in their place, and that's about it. So it can be put back to its original configuration in five minutes.

DS: Wow, that's great. I know that there are instruments in California as well. Have you seen different instruments from different places where the weather has had much impact?

JL: I couldn't say that weather has had impact. No. I would say that for the transistor instruments there is, as far as I know, four generations. They went from a combination of transistors, integrated circuits and some what I would call rudimentary integrated circuits, big blocks. That was a very first generation, and then those big blocks disappeared. And this one here would be typical of the second generation. And then a third generation didn't have this added board here which was for *l'anti-claquement*. You know the original instruments, if you had the intensity [button] depressed, when you gave the note it went [makes clacking sound]. So this board was added to the original board as an *anti-claquement*.

DS: I think Thomas Bloch told me about it, and he said instead of turning [the keys] on and off, they were on all the time, just on silent.

JL: Yes, exactly. So they had to adapt their playing to that. So if they didn't want to hear the click they had to play the note and then press the *touche d'intensité*, which was of course technically very difficult. If you're doing some quick lines, it was very problematic. So this board without this little board here would have been the second generation; this board with this added would have been the third generation. And then there was another board like that. The instrument that they modified recently was the last generation, that board was integrated to this So you didn't have this on top of this one- piggyback. It's pretty. Look at the way it's done, it looks like a very homemade thing and it is basically that. (DS: Mm hmm.) And this created a lot of problems. And if you had to work on it there is like seven or eight little pins that go through to some of the original parts here. So if you pulled it out it was almost impossible to realign the pin. So you had to put new longer pins, align them, push it in place and solder them on the other side, and then cut them off. (DS: And then hope you wouldn't have to do it again soon.) In most cases you had to anyway. So

yeah there there's four generations. The two intermediate generations, the quality of the actual PC board was poor and the instruments didn't age well, but it had nothing to do with, you know, weather or humidity or anything like that. I don't think unless you go to a place where humidity levels are incredibly high like in Africa and places like that, I don't think it would be a problem. Of course they have the keyboard itself with the contacts. The key, the actual metals trips touching a wire, which makes the contact for the note. This tends to oxidize and when the instrument hasn't been played for a little while, it sounds as if there was no *anti-claquement*. OK. So you just play for a little bit. The way the thing works is that you have- the key presses on a little metal blade... is that pertinent for you, that kind of information?

DS: I'd love to know, yes.

JL: Because I don't want to start saying a bunch of things that seem too- DS: No, no.

JL: That [shows] would be for transistor instruments. Tube instruments would be different. So basically if you have the keyboard sideways like this, what happens is that when you press on one of the keys you press on this little fabric thing here. You have these two little fingers, they come across a wire and make contact with a wire. OK. The way it works is that when you press against it far enough it rubs against the wire and it actually does self-clean the contact. So that's why after playing for a few minutes the keyboard is OK. It can be terrible when you start playing but after a few minutes it's OK. So for the transistor instruments, that's what was used. For the tube instrument it was a different thing. It was like a little rod with two little pins touching it. If you pressed the key then it would move to a section of the rod that was conducted. So then you had a contact. And that was even trickier than that. (DS: Yeah.) I can I can give you an old one. Up here I have some tube type conductors. You see, from time to time I had to replace some of these. They tend to cut here at the end, and instead of using the piece of fabric that they use which is quite- which is necessary, otherwise you'd have you'd be short circuiting the whole thing and that would be playing at all time. So I use Teflon shrink tube instead of the fabric that they were using. The tube type thing... I thought I had some but I don't [rummages]. DS: Which is the oldest instrument that you have here?

JL: It would be this one. Yeah. Gilles Tremblay also had a tube instrument. Maybe older than this one- this one belongs to Jean Laurendeau. If it's not the oldest one it's the second oldest one. And they would go back to uh, say the early '60s, very early '60s, maybe late 50s for Gilles Tremblay.

DS: Do you know where the '30s models are at this point?

JL: I have no idea. And apparently it's very mysterious. It's all very mysterious. Have you talked with David Kean? (DS: No.) He is a very interesting guy. He knows a lot about the history of the instrument. I mean, I am a technician, I'm not that interested in the historical part, although I know a bit. But he did a lot of research. And also there is a guy called Owen Chapman. (DS: Yeah, I'm meeting him on Monday.) Very interesting guy. So these guys could probably give you a lot more information than I can on that kind of subject.

DS: I was wondering what you thought of the early inventions and the tube instruments and the kind of decisions that were made to- because what you think the things that a little pins and the rod in between. Do you think that at the time did you see it as the only solution for that problem, or was it just a specific kind of way of making decisions that...

JL: I guess even at that time there would have been others... there would have been alternatives, other solutions, but I suspect that the solutions he chose to use were the best one at the time for the combination of things that he was doing. Because I mean, what would be the best solution in one application may be the second best in a different application. So I suspect that what he did back then was really the best combination possible for what he was planning to do. (DS: OK.

So you really believe that his knowledge and is that the way he fabricated everything, the way he engineered everything was top of the-

JL: Oh for the time, yes, definitely. I mean, it's hard to compare the way things work today to what it was back then. For example, the technology of tubes, what they called back then receding tubes, is very very primitive compared to what we have now. It's like, you know, opening a faucet.

[JL's wife visits]

JL: So it was totally different. You could compare a valve, the way Brits call them, the vacuum tube, as a faucet. You just turn it on progressively, turn it off progressively. So you have current flow of water, in this case of electrons, that's greater or smaller. And it's very easy to control. It's just a combination of a few resistors and a few capacitors and it works. It's very very very simple technology. So a good handyman by then was available- was able to do quite a bit with that simple technology. The genius of Martenot was to conceive something, you know, put a bunch of things together and create an instrument with it. And an instrument that



was very expressive, and that was the strong point. And expression was vibrato and *la touche*. So it was a combination of a very simple technology, tube technology, with great ideas, and the tricks available on the market at the time to do what he needed to do. Yeah.

DS: Yeah. So you think there are any things that were completely invented by [Martenot], or was it more putting together things that-

JL: No. For example the *touche* as I was saying was used in the industry. By then most motors, industrial motors were not AC motors, they were not run directly off the grid. They used direct current instead of alternating current. So the only way to vary the power to the motor was to vary the current in the field, in the magnetic field of the motor. For that they would use those types of graphite or carbon packs that I was mentioning earlier. So he probably had seen that. He had to find an equivalent of that at a smaller scale. And that would have a softer feel to it. Because it's like a sewing machine, the pedal, you just press harder but the pedal itself barely moves. So the feel is strange is really strange you can't use that for the instrument. So basically he used that technology and adapted it in a little leather bag that would stretch a bit, you know, and give that feel. And then the combination of what was in there that would allow to have some movement, progressive resistant, uh...

variation. So he didn't actually invent anything. Like most inventors, they just use what's there, what's available, and put things together. And if they're put together in a clever way it gives something that's really interesting. Like for example nothing of that would be patentable. You couldn't have a patent on that. It's impossible. I mean you might try and fight the idea, but there is nothing. It's all- especially the transistor instruments, it's all very very very standard circuitry. It's nothing special. This thing here [shows] will give the same basic waveforms as a Martenot will. But what he did is that he created the filters that would give, you know the *gambé*, the *creux*, the *nasillard*, and all those sounds, and then made combinations. And it's the result that was interesting, not the technology that was behind it. That is very very primitive.

DS: I see. So you just have to have a vision of what things could be when they are put together and that's I suppose the clever thing about it.

JL: Yeah. And I guess the fact that he was a cellist himself gave him a lot of that inspiration. You know basically *la touche* is a bow. That's what it is. So he just had ideas and tried to find different applications around him that could be used to get to the point. But he had he had an idea in his mind, he had a sound in his mind, that's

for sure. On the other hand there is a lot of mythology if you want around Maurice Martenot. Especially when it comes to transistor instruments. I mean, he had nothing to do with that. He didn't design it. It's a company- he farmed out the design of the circuitry. He told them, listen, I want to do this and this and that. And they designed it. (DS: OK.) The company was called EFREM. And so they did the design, and there was probably a lot of back and forth between that company, himself, the ondistes, where they experimented on various things. And then they accepted one configuration, and that's what the generation six Martenot became.

DS: I see. Around what time was this?

JL: That would have been early '70s. '72, '73 approximately. Maybe a bit earlier than that. You know, I have schematics with dates on them and the oldest one I have is '72. And it seems to correspond to the oldest instruments that I have seen. (DS: Generation one transistors.) Yeah, yeah. So I suspect that would be around that time, let's say between '70 and '72 maximum. OK. Because I know that in the late '60s and very early '70s he was still selling tube instruments. Because Jean Laurendeau would have bought his in the early 70s- no, early '60s. Gilles Tremblay would have been late '50s. So, was he still making tube instruments, I'm not sure.

DS: So somewhere in the '60s he started looking for a transistor-

JL: Yeah. And he had to. Because when you look at the inside of a tube instrument, the amount of work that must have gone into building this thing must have been huge. There's so many little details in there. Although the technology is simple, the actual building of the thing is very complicated, and the tone generation process is totally different between the tube instruments and the transistor instruments. And that was one of the points that some of the uses had a hard time accepting. There was a difference in sound, and it was due in good part to the different type of approach to sound generation. You've probably heard the thing that he got inspired by- while working on his tsf radio, when you try to tune a channel, which is, you know, something a lot of people your age haven't heard these days. But when you went between one station and another you had a [makes whooping sound]. So the reason why you have that sound is that you have two oscillators operating at slightly different frequencies. And the difference for the frequency here. It's like when you tune two strings in an instrument you hear a beat. Yeah. So it's roughly the same thing. (DS: A beat wave) Exactly. So what he did instead of working at a low frequency that would be in the audio range, he was working at a very high radio

frequency, in fact. You had two oscillators; one was a fixed frequency and the other one varied, which would have been the keyboard or the *bague*. And the variation would be such that the difference between the two would give you an actual frequency in the audio range. (DS: That is then matched to the keyboard.) Yeah, exactly. Which was in itself a bit of a... exploit [?]. So that that's for the tube instruments. The transistor instruments, what you have essentially is a frequency, frequency generator. So it's just like a few components that will, which are configured in such a way that when you apply a direct current, a DC current to a voltage to it, depending on the voltage you will have a specific frequency of the output. So it's not a combination of two tones outside of the audio range. It's a direct generation, it's not, the system that was used was called (*pause*) oh, memory blank... a hyper... it will come back to me.

DS: A heterodyne?

JL: Super, superheterodyne. Thanks for telling me, superheterodyne. So that's the principle of having two frequencies to generate a third one.

DS: Has anyone tried to use transistors to, to combine two?

JL: To do the same thing? As far as I know, er, no. Because I guess there is no real advantage. I guess the biggest difference, how can I put it? When you don't have full knowledge of the system, whatever system it is, and you look at the result given by one part of this system you tend to believe that it is the whole system that does that. Okay? When they went from tube to transistor, everything changed. Okay, so it's not just the generation system, the tone generation system, it's the filters, it's a power amplifier for the speakers. It's all those things, and each one of those things had a different tone (DS: a minor difference). So it's a combination of all of those, so it's not just the tone generation. Going back to a superheterodyne principle of tone generation I guess would be a very futile exercise because it would be so complicated to do...

DS: And it would only change one component of all of this.

JL: Yeah, because you'd end up with a sine wave and a triangle wave just like in the original transistor instrument, so why do that? And on the other hand the transistor instrument offers a lot more possibilities than the tube instrument because of the possibility of shaping the waves which the tube instrument didn't have. So the tube instrument relied for its tone mostly on the *diffuseurs*, whereas the transistor instrument also relies on its *diffuseurs*, but on top of that it has lots of wave shapes,

different wave shapes, that can be added, subtracted, whatever. I could show you the wave shapes if you want.

DS: Yeah. Have you tried to, with the recent project, I assume that you you've got a good ear to, to find the right tone that everyone's asking for, and how...

JL: Well for the reason I mentioned earlier, the fact that they were freaking out at the idea of losing their sound, I decided to, as I mentioned, to copy in its integrality the original tone generator circuitry. So if you look at the original Martenot schematic, the last generation schematic and if you look at what I've done it's exactly the same thing, that part is identical. Um, in the old Martenot documentation that I have, I have a description of all the wave shapes, the proportions, the amplitude, the voltage and all those things, I have those. So all I had to do is confirm that my circuit, my replica of the original circuit, gives the same waveforms at the output, and there is there is a slight possibility for adjustment but very little. So basically they should have what they had before or something very very close. If it's, if it's different, if it's a lot different, it's for external reasons I think. For example one of the persons, Geneviève Grenier, she uses a totally different setup. She has Martenot *diffuseurs* but she doesn't, she very seldom uses them. I installed on her instrument an output that she feeds into a digital processor that feeds a powered loudspeaker. So for that reason, like, a Martenot *diffuseur* for example, the D1 would be a standard 12 inch speaker with very limited high frequency response. If you take the same signal and feed it to something that has unlimited frequency response you end up with a very bright sound because all that and all those highs that would disappear in the 12 inch Martenot speaker are still going to be there. So going from one to the other made a big difference for her so she has to readjust everything. On top of that, the only place in the circuit where I could take a feed for her external circuitry had a certain effect on the sound and the intensity of the signal was very low compared to modern standards that you need for those processors. So that's the only way we could do it, so she uses it that way, but in the new circuit that I designed, I created what we call an external loop, a processed loop, for the instruments, and that works at the standard levels which is above one volt, like 1.4 to 41 volts, so it's about ten times higher than what she was used to. So obviously that changes all the parameters inside her processor. So she was the one who was freaking out the most because of that, but when reconnecting the instrument to the original *diffuseurs* she was like 'OK, we're, we're there'.

DS: Yeah yeah, I see. What is your view on the future of ondes Martenot? Because obviously you're working with systems that need updating, that are relatively old, and there are people who are working on new models. But do you find that, I know that a lot of people say that, that recreating an original ondes Martenot is a lot of work and costs a lot of money, and it's not necessarily going to advance into popular territory. So what is your take on that?

JL: Well I would say, and I've said that for a long time, the survival of the instrument will come through its use in the pop world. Big names like Johnny Greenwood, who use the instrument, could create a market, a very interesting market for the instrument, and that's the only way to bring the prices down and make it available to artists who would be interested in doing the traditional repertoire of the instrument. So for that reason a few people got involved in making and building a new instrument, Mr Oliva, with the Ondéa, Jean-Loup Dierstein, and also, I can't remember the name of the guy, but there's another French guy who's working on an instrument.

DS: Claude Jaccard?

JL: Yeah, that's it. But I'm not, I don't know much about what he does, but I've seen a Dierstein instrument. It's well-built, but it's still very...he's an artisan, okay? He's, it's built, it's a one by one circuit instrument and everything, so it's very labor intensive and time consuming, so you cannot bring the cost down by doing something like that. I believe the only current hope for, to make instruments available at a decent price and something that would be well-built, reliable, and adaptable to current technology is what David Kean and Markus Resch are doing with the Ondéa project.

DS: Okay, and where is this happening?

JL: In Sweden, in Stockholm, Sweden. Because these people, first of all they have the facilities to do a mass production. It's never gonna be a Yamaha type mass production, but it's not like it would be a one-instrument-a-month production. So it's a huge difference. If you look at the transistor Martenot, there is nothing expensive in there. It's just a shitload of small parts that have to be made by hand. And it takes a lot of time. So it's, you're paying for a lot of time, whereas these people, they have the facilities right now they are they are building the mellotron, you know what the mellotron is? So there, they are building replicas of the original improved original mellotron with the tapes and everything. They're building a digital sampler, the

mellotron, the sounds. So they currently have not only the facilities but the contacts. You know, they are in touch with a bunch of people. They are well-known.

DS: Sellers, and...

JL: Yeah, yeah exactly. So they are well-known nowadays. They are picking up that project, which was a completed project but being typically French it's so complicated, it's unbelievably difficult to build because it's so complicated. It was never designed with ease of fabrication in mind. So it would be almost as time-consuming to build as a Martenot was.

DS: So what was different about the Ondéa? Because it was not really a replica, a bit of a simplistic instrument...

JL: Compared to the Martenot? Yeah. It used, the basis of the Ondéa, the main idea behind the Ondéa was to make an instrument that would be able to reproduce exactly what the Martenot did, but do it more reliably, and have more possibilities on top of that.

DS: Okay, so it wasn't a simplification.

JL: No, definitely not. In fact it is very complicated. It is the circuitry is very very complicated, and in many cases for nothing. For example, I was, I'm using part of the Ondéa circuitry in the design that I made - it was an agreement I had with Monsieur Oliva and one of the circuits that I borrowed from, from the Ondéa is the circuit for the pedal and the *touche d'intensité*. Surprisingly I had done some experimentation with that few years before, and when I went to visit him I realized we were using the same technology, but he had developed the circuit to its full operational level. So he said 'well if you want to use it, go on, use it'. So he just gave me all this, he was really really nice. He gave me all the schematics and said 'use it'. So this chip here is the chip that actually creates, generates the signal for the *pédale d'intensité*, the expression pedal. You know there was one problem and, so a problem that's currently on the Ondéa, and no one had spotted it. The, when you pressed the pedal, it can never be quite as loud as when you press a key. So for the ondistes it's a bit of a problem when you have to go from one to the other and make it perfectly continuous. It was a problem. So, recently I came across that problem and we've just solved it. You know, I just modified a little bit the original circuitry, and solved it. But the approach he took was was very complicated. I just simplified the circuitry. A friend of mine works with French industrial systems for aluminum fabrication and he says that with French equipments the more stuff you remove the

better they work. I had confirmation on this thing so you know the Ondéa is not simpler than the Martenot. Some of the complication was for a good reason and gave excellent results. For example in everything that has to do with the *bague* is fantastic. The guy, Monsieur Oliva, used to work in the aircraft industry. He would make, his main field was test instruments. He would make and build test instruments. He also built some mechanical things and so he has a lot of experience with that, and the system that he created that the pulleys and the springs, and all that which was all adjustable. It's absolutely fantastic, and it is going to be replicated in its entirety by Marcus and David.

DS: Will it be more durable? Because obviously that is also quite mechanical.

JL: Yeah. I mean that the part that's going to remain that has to remain mechanical and they wanted it has to remain mechanical because of the fact that for example that movement where you just move away from the instrument you had to have that, nothing electronic will allow you to do this at the moment. I mean you could have something that if you move your finger along something even without touching anything, like distance sensors, it could be related to pitch and that could work very well. But this you cannot do. So for that reason, you have to add a string and all that stuff. But the intention is to move away from the potentiometer. So the Ondéa still had that potentiometer, but now Markus Resch working on the digital encoder, that will be a simple disk with little openings in it. Well actually, it's a black disk that has little spots that are transparent, and has little LEDs that will flash right through those holes and just give you an encoding. So instead of having a potentiometer, they will have that encoder, and that encoder is just a little disk on a shaft with bearings that will last like 10000 times in the life of this thing. So there will be, still be a lot of mechanical parts, but those parts that are gonna be there are going to be a lot more reliable, and will last forever. Like on a Martenot, instead of using bearings, he did, like people like jewelers do on a watch, you have a pulley, you have a shaft, and each hand of the shaft is pointed, and it's put in a little 'U' bracket like this, with a screw on either side, a little dimple in the end of the screw and they just press against the tips of the shaft. So these things wear out. You have to readjust and everything. If you use a bearing for that kind of application is going to last 10 lives. Okay, so the only problem that will remain is the string itself from time to time to break, but even then it can last a long time.

DS: Okay, and maybe they can find a way to it for the player to replace it

themselves?

JL: Sure, sure. But it's not gonna be simple, but, because it's still a system with pulleys and springs and levers and stuff like that. But, but it can be done. I mean it's not easy to do on the Martenot, and some of the players did replaced it from time to time. So, but the rest of the circuitry will be as I said, the audio, especially the tone generator was usually complicated, very very complicated, way too much for nothing. But for the sake of putting out an extra instrument as soon as possible, what Marcus has decided is to stick with that for the moment. They know it works. People have accepted it, the ondistes have accepted it. So he will stick to that, he will stick to essentially what the instrument is at the moment the only difference being the encoder, OK? And they will simplify the construction process, the building process, to lower the cost and make it more standard because there was nothing standard in the Ondéa. If you wanted to connect it to something else they had those huge connectors that cost a fortune, and they were signals going back and forth between all kinds of things, and the legs were big and heavy. So they want to have something that you can put on top of the table and play it. Want its legs, attach it to its legs, you can do it. You can hook it up to a mixing board, to a PA amplifier, whatever, it has to be standard.

DS: But that's interesting, because those are some really difficult decisions I think: what is standard? It's going to be their decision in the end.

JL: Well there's two things there. For them, it has to be a Martenot. So it has to be to be able to produce all the sounds the Martenot did.

DS: So do what the repertoire asks for.

JL: Yeah exactly. And the controls have to be exactly in the same spot, so that an ondiste that goes from the traditional Martenot instrument to that instrument won't be lost. I mean, it's a matter of readjusting a few reflexes of course. But you know, that person won't be lost. So they're, the first main goal is that it has to be a replacement for the Martenot. They even want to make new versions of the original *diffuseurs*, the mechanical type, not just electronic but they want to have mechanical type *diffuseurs*, so that's going to be a second step. So that's the main goal. But at the same time these guys are perfectly realistic. They know that they they won't be able to make it profitable, they just sell it to those people. So the electronic part, the outer world interface part of the closed world of the Martenot players has to be standard. Yes. OK. This has no influence whatsoever on the sound or the possibilities, the



traditional possibilities of the instrument.

DS: It's just like a CV output and things like that?

JL: Yeah. So it's going to have a CV input, it's going to have MIDI input and output, all of that, it's going to have a keyboard with aftertouch. So if you have an external sound module that will accept incremental variation you can have the vibrato on an organ sound or whatever, you know? So they want to make it as universal as possible to be able to sell it to someone like Greenwood for example. We can use it in a traditional way or you can also be very inventive and hook up a bunch of stuff to it and do something completely different. But the main aim is to have a replacement for the Martenot.

DS: And how on earth is this going to be less expensive?

JL: It's because of the production process. Because as I was saying, first of all here they are currently making the whole thing much more, much more simple to manufacture. Because it was very complicated to manufacture. So they are simplifying that. And just numbers, like they are planning for a first batch of 50 instruments, not one or two: fifty instruments. So by doing that right away you can almost cut your production costs by 2. OK? And if you go higher, I mean, if things start working really well, then they do a second batch of 100 and you can cut your costs a little bit more.

DS: So do you have any idea when...

JL: Pretty soon, pretty soon. Because I know that Marcus went to Calgary two months or two and a half months ago, and he had a prototype. So their original aim was to have something available for like mid-June, end June. Something like that. A few things didn't go well. Monsieur Oliva, he was putting one foot ahead and then moving back two steps. So it took a little while to get something sorted out. So they lost a bit of time there. So I suspect it's going to be more like by the end of summer. But these guys are serious. They work quick, they work well, and I mean they're they've made- their proof is in the past.

DS: I'm getting one.

JL: You're getting one?

DS: I was thinking of saving up to get one from Jean-Loup Dierstein – 10.000 pounds minimum. But if that's going to be cheaper and if I hear about the process I think it's going to be...

JL: My, don't quote me on that, but my impression is that the price is going to be

about half that, for an instrument that's going to be quite a bit more versatile and better built. I'm not saying that the Dierstein is not well-built, but the fact that he's doing it the way he's doing it makes it very expensive. So for that kind of money you can have more if you have something that's mass produced.

DS: Yeah, that's true.

JL: And that kind of mass production, you know, that kind of mass production has no real disadvantages compared to what the artisan will be doing in his little workshop. But at the same time it has some of the advantages of mass production. Mainly cost reduction. So it will be the way to go. I suspect that, and that's quite unfortunate, that Dierstein and Jaccard probably won't go much much further forward with their projects once the Ondéa is out, because they won't be they won't be able to compete with that unless they want to do basically the same thing that they're doing. And David as much as Marcus, they welcome the fact that there could be various options. Just like anyone wants to buy a violin has various options available. But they also realize that to make it profitable they have to take the route that I, we were talking about. And by doing that really changes, it's the laws of the market. It is not their plan to do that but they realize this is probably what's going to happen, unless they goof up and make something that doesn't work. I mean, yeah, I mean if they manage to make a digital sampler that reproduces what a Mellotron did for them, this is gonna be a piece of cake. I mean, I managed to do something like that in my little workshop. So they'll do it for sure more easily than I did, and they want to go from that and then integrate more and more things with further generations into the instrument.

DS: Okay. And is it going to be called the Ondéa?

JL: It's still debated but it's probably going to be called the Ondéa something, but the Ondéa name is gonna stay there. Out of respect for Mr. Oliva.

DS: He has to be on board completely.

JL: It's not that simple. Have you met him?

DS: No.

JL: No. He is an older gentleman. He's like 87 or 88 now, and he's not easy to deal with. And he's getting a little bit mixed up and lost in a bunch of things, you know, as I was saying earlier, he goes one step forward one day and then backtracks the following day and keeps up and comes up with new ideas and he wants to be involved in the project but he is not physically able to continue working in the

projects so...but you know, Marcus and David are good people. They could have just taken, 'I have the schematics and everything' and they had one of the instruments, they could have just copied it. But they didn't want to do that. No, they wanted to talk with him. They wanted to come to an arrangement, give him money for his work, and stuff like that. And it's been done cleanly and properly.

DS: With a small community like that it's quite important to do that.

JL: Yeah it is, it is, and that was one of the problems that Monsieur Oliva had to go through, and same thing with Jean-Loup Dierstein. I don't know about Jaccard, but many of the musicians at first gave their approval or in-principle agreement or something like that and then they backtracked for some reason. Because Jean-Louis Martenot said it's a good project and then said 'no, no, really it can't compare'. So this has happened a lot. And that was the main reason why, there were other reasons too, but probably the main reason why Monsieur Oliva didn't succeed with his project. So the advantage that Marcus and David have is that they don't give a shit about this. Jean-Louis Martenot can say whatever he wants, they just want to create an instrument that will be a *Martenot plus*, and sell it at a decent price, and be able to have that repertoire that's still played, and new starters playing on the instrument and they they've done a lot to prove that in the past, because at the Audities recording studio in Calgary, while they do record traditional repertoire with the original instruments, that's what they do.

DS: I think I've read about it. I think I've read David Kean's article on conservation of the, the sounds.

JL: Yeah, yeah, that's what they do. So when they say that they want the instrument to be first and foremost a Martenot, they want to reproduce a Martenot, they are serious, they're not kidding, they are serious, because they want that repertoire to stay alive. If it's played on a traditional Martenot, great, but there has to be alternatives.

DS: Do you know which people were involved with consulting for the new Ondéa?

JL: You mean the project that David and Markus have picked up now? Er, no. I know that at the early stages of the Ondéa, there was Yvonne Loriod? No, there's Yvonne, and, who is the Ondéa player? I think it's Yvonne. I forget.

DS: Do you mean Jeanne?

JL: It is Jeanne. Yvonne was a piano player. I know that she was involved, that was just before she died, she was involved with the basic work of the instrument, and

then I met a girl, a young woman, I can't remember her name, I'm terrible with names. When I visited Monsieur Oliva, that was in 2008, I think, I met that young woman who was involved quite a bit and some other artists were involved, but at one point as I said they just turned their back to Monsieur Oliva, the whole thing went south.

DS: And who have you been in contact with to, to...

JL: To develop that? Well it's been, as I was saying earlier, I played everything safe because I didn't want to get involved in the development process, because we didn't have the time or money to do that. So by playing safe I mean I duplicated as much as possible the original circuitry. I borrowed some stuff from Monsieur Oliva, and I added, like, the glue that would put all of that together. So basically the only point that could have been a little bit tricky was the feel of the touche. And when I had the first prototype ready, like, see, these here are the original Martenot boards, these two, these are our prototype boards, and these are the final boards in the modified instrument. So when I prepared the prototype, for which I used Jean Laurendeau's instrument, I presented it to the ondistes, and then we had a meeting and they all tried it, and then each one took it home to play on it for about a week, and they gave me some feedback. Most of it was positive, there were a few little technical glitches that needed to be sorted out and have been sorted out, and I had feedback on the touche, and we just went from there, and there was not that much to do after that, because I knew quite well where I was going and I was not heading in a direction where there would be a lot of experimentation. So I was playing it safe because I know, also, I mean they're very picky and they have reason to be picky. I mean they've been used to an instrument that was very unpredictable and difficult to play on. So once they got used to something when they had to change a *sac de poudre* for example, for them it was a big thing because the instrument was totally different after that. So I had to get it into their mind that, listen, what you're gonna get maybe a little bit different in that respect, but it's always gonna be the same. And if you'd like to change it I can adjust it, up to a point. So once that was accepted everything went well. It was a little bit hard to get there because you know it was playing a lot on their insecurity. But once we got there it was okay.

DS: So I assume that was Jean Laurendeau, Suzanne...?

JL: All of them. Yeah. Jean, Suzanne, Gen'viève, Marie also, they all tried the instrument. Estelle. Yeah, they all tried the instrument. Estelle was probably the

most enthusiastic because she's probably the most open to newer stuff, and newer technology, being a composer, working with sound processing and stuff like that. She was more open to that. She didn't go into the project with a fearful attitude. So it was a lot easier to work with her, as she could give me more valid feedback than the others, because like, the others they would start playing with the instrument and only see problems, whereas she would say: okay, this is good, this is good, this is good, this needs to be worked on. So she was a good reference for me.

DS: Great. Do you find that, just picking up from a comment from earlier, do you find that this instrument has a sort of a French aspect to it?

JL: In its complexity? [laughs]. No, I'm kidding, in its complexity of course, but I've always found it funny that they had to find very poetic names for everything that has to do with the instrument. I'm not mocking them.

DS: No, it's an observation.

JL: Yeah. Being a technician, I mean, a sine wave is a sine wave. Don't call it *onde*, it is a sine wave, for Christ's sake. Okay, but they want to call it that. Especially since it's in a surrounding where a combination of those things, those basic technical things, become something really artistic. I'm well aware of that. OK give it that name, if you want. In that sense it is very French, because the French tend to you know be very picky on the words they choose, and like to give things a name that that's more than functional. I mean the British will be more pragmatic, practical, whereas the French they tend to, um...

DS: There's something about the language as well. It doesn't have a big vocabulary so it's important to use the right sense of each word, I suppose.

JL: Yeah, yeah, exactly. On the other hand when you when you have a word, when you look at the words it is chosen for the various timbres and you listen to the sound, you say 'oh that makes sense'. *Creux* (C timbre), it sounds *creux*, compared to a square wave, or a sine wave, it does sound *creux*. *Nasillard* (N timbre), it does sound *nasale*.

DS: Did you find, because this is a thought that I had, that it's important that these were named not after different instruments, which is often the case with new synthesizers then that it doesn't steer the mind too much?

JL: Synthesizers and samplers, yes. Well I guess the reason behind that is that he was creating an instrument there. No one had, in his mind back then, the idea to reproduce something, to create a *facsimile* of something. The technology didn't

allow it. Whereas when we start having electronic components that were powerful enough to have powerful synthesizers, then what people started trying to do right away is replicate the acoustic sounds, or like electric or electronic sounds, which was I guess inevitable, they had to go there at one point.

DS: Well, I do see that with his background, with Martenot's background, he could have just created an electronic cello, I suppose, but he went beyond that. He chose to go beyond that.

JL: Well, I mean, he did the vibrato, he did the bow. He did all those things. It *is* a cello, but it is a cello that offers you a wider palette of sounds. And one thing that has to be considered is the novelty aspect of the instrument, and I know the ondistes don't react very well to that. That's an instrument that wouldn't have had the importance it had, had it come out ten years later because there was this fascination for technology in the 20s, absolute, I mean, people went crazy for technology. Anything that was technical people would go for. So, and I'm not saying that in a cheap way, because some of the people got interested in it that were highly educated people obviously. So it's that simple invention but clever invention was adopted by the intelligentsia, who did something with it. But it could have remained a back room or a cinema hall instrument had it come out ten years later. But it did come out at the time it did and made a big impact and we're still talking about it today and it is still a very different and specific instrument. Nothing else can do what a Martenot does.

DS: How would you compare this to a Theremin, in your own words?

JL: Well, lots more possibilities, of course. The Theremin, as far as I see it is a mood instrument. It can do very interesting things. But it is still fairly limited. So what people will do with it a lot of the time is create some mood, something that will be on top of something else, whereas a Martenot is a *bona fide* instrument. It is a musical instrument.

DS: If you talk to other people who don't know anything about the ondes Martenot about this instrument, how do you describe it in a short amount of time for people to understand?

JL: Well I say it, it is like a basic late '60s/early '70s synthesizer, which it is, but on top of that it has this and this, and these are the two things that may make it completely different to anything else. And the *diffuseur*, of course. Mind you, when the last generation *diffuseurs* were designed the late 60s early 70s, they could have

done a lot better. Technology could have allowed them to do better. But there was not enough production to allow, to justify reinvesting in designing something new. But you know, roughly, that's what I tell them. Most people can relate to something like a mini Moog or something like that. Well, the Martenot will do that. But it also adds to that. You know this thing, a pitch-wheel. Yeah, but it's not a pitch-wheel. It's very different to play a note and vibrate it at the same time, you won't be able to do that with a pitch-wheel. And *la touche d'intensité*. *Le claquement* which is used now, the modified instrument- The last two instruments that were sold, one Geneviève has, and the other one Estelle. They have a switch for it, *l'anti-claquement*. But the other ones didn't.

DS: Thomas Bloch has one as well.

JL: OK. OK. So it's one of the later ones. We've included that in the modified instruments so now they will all have it. So they do have, there was stuff written for that glitch, for that basic problem of the instrument, it was used, so it has to be available, it has to be there. And on the other hand it's much more convenient to have *anti-claquement* when you're trying to have very long musical phrases and stuff like that. But yeah that's how I describe it. A synthesizer with a lot more, more of the expressive possibilities.

DS: I see. Imagine making an instrument like the ondes Martenot for a thousand pounds or euros. Which features do you think would have to remain for it to be an Ondes Martenot-ish model?

JL: As far as production is concerned the most expensive part is the mechanical aspect, the moving keyboard and the *bague*. The electronic parts are not expensive. What's on a board like that is not very expensive. Maybe, maybe there's 20 or 25 bucks of stuff on this thing. The board itself, small production run like we did, the board itself is about 20 bucks. We have 50 dollars there. You have a bit more in this one. It's not a lot of money and assembling, putting on the components during the soldering, it's not that time-consuming. But when you get to the mechanical parts, lots of parts lots of setup time, stuff like that. So the first thing that would go and is something that would tend to prove what I am saying, the first thing that would have to go on a very cheap instrument would be the moving keyboard. The Martenot training keyboard, training instrument, didn't have a moving keyboard. So it is expensive to do that.

DS: Right, I see. And perhaps it isn't the most important part to keep playing the

repertoire.

JL: No.

DS: Because that's what I keep thinking about. Like what are the most important ones features that would still make it an ondes Martenot, that would still make it available to it to play this, the repertoire? And I think the timbres can be approximated quite conceivably (JL: Easily, very easily), but it's the *touche d'intensité*, the *ruban*...

JL: Yeah. The *ruban* wouldn't be that much of a problem. But the-

DS: OK.

JL: The *bague* and the moving keyboard quite a bit more. Especially the moving keyboard. But then again, if you take these away, you move away quite a bit from the possibilities of the original instrument.

DS: Maybe you end up with a general Moog, or...

JL: That's it. I mean as a training instrument, a little bit like, you know, kids used to practice on a paper keyboard. I mean it could do the job, get used to the timbres, the various timbres, and the *touche d'intensité*, that could be interesting but I mean that would just be a step in the direction of the final training, where you'd have to integrate the *bague* and the moving keyboard. Yeah that's for sure.

DS: I don't think I have more questions...

JL: Would it be worth for you to see the wave shapes and stuff like that?

DS: Do you mean just on a...

JL: Well, I have it on paper. We'd have to pull out the instrument and check it otherwise. But I have it on paper.

DS: Yeah, that would be great.

JL: Would any of the technical papers be interesting for you, schematics and stuff like that?

DS: They would be I think. Yeah.

JL: Okay I have scans of all my original Martenot documentation. I could give you that. Would my my project also be interesting? The schematics?

DS: Yes, very interested in that

JL: OK. For them though I would have to because it's all it's done by a very specific program. If I give you the files you won't be able to open them.

DS: Which programme?

JL: It's called Dead Trees.



DS: I haven't heard of it.

JL: Maybe there's a reader but I'm not sure, if there was a reader you could open them and print them. But I could make you copies, you just leave me your address and I will send you copies.

DS: That would be amazing.

[Background noise obscures the conversation briefly.]

JL: Oh well these are, I did service work for a lot of years, so I have schematics for old Moogs and all kinds of things here. Well, you probably know these things, old Hammond organs and bass pedals. A bunch of stuff.

DS: Incredible.

JL: One thing I've done also for Suzanne, but unfortunately she's not using it a lot, I've built a spring lever like they had used to have on old organs and stuff like that, but I used the biggest one I could find and it gives very good results. But the problem is mostly the interface, like she has to reach out to the reverb to control.

DS: She talked to me about this. Yeah, yeah. That she couldn't just switch within in the middle.

JL: But sound-wise, it's very good. You see, that's, I was telling you that I've adapted the *touche d'intensité* to the older tube instruments. So that's... basically I'm just reusing what I did there on a different sort of circuit board. Yeah, I was looking for the reforms. Can you read the schematics a bit?

DS: A little bit.

JL: So basically what the instrument does, as I was telling you, there is just sine waves and triangle waves that are produced by the instrument, by the tone generators. These sounds, these waves, are then transferred to two circuits. There's a few missing here. These are handwritten documents by Maurice Martenot himself. Here it is. So basically, you see triangle waves. So these two, the *creux* and the *gambe*, come from a triangle wave and the *onde*, the timbre *onde* is just a sine wave, and the *octaviant* is just a doubled up, it's just rectified, like the bottom section is just moved to the top so it gives the impression that it's an octave higher, with lots of harmonics. So you have, these share the same signal. This one what it does basically, the *creux*, it just squares off the triangle wave. This is done by the use of these diodes here. OK, the *gambe*, it just squares it off even more and creates a square wave. It's a true square wave, but it's not a 50/50 square wave. It's like a 30/70, like the, we will call the duty cycle, it's about 30/70. Er, the *nasillard*, you

just use the top of those to create a little spike there, so it creates a very sharp and nasal sound. There's *le soufflé* which is a white noise. So it's just very conventional, you use the noise generated by a diode that's polarized and amplified very much. It's like, the gain here is like, two thousand. So you just take that noise, you amplify it and you end up with the white noise. And then the *octaviant*, well as I was saying earlier all you do is rectify the bottom part of the waveform and create that higher octave and harmonics. So the outputs, what comes from the main tone generator is this triangle, and this. The outputs of these things go to the switch section. So what you do here, there's a bit missing but in here you have *nasillard*, *gambe*, *ondes*, and I get them mixed up. No that's the *gambe*, and that would be the *nasillard*. So, here are the switches the various switches for the timbres and what you do, basically, is you either select one or you don't. And in the case of the *petit g* for example while it's the same thing as the *grand G* but you filter it, you have a capacitor here that removes some of the harmonics, and you have a volume control to vary the intensity. So you just choose your timbre here. And if you decide to select the *tutti*, well what it does is that it just takes a sample of all of them it just adds them all up, and the noise, the white noise is here. The circuit should be, would be, before that and it goes into this which is a summer that adds all the various wave forms and sends the output there to the *touche d'intensité* and eventually to the power amplifier. So these are scans I will give you.

[01:38:00]

DS: That's incredible. Yeah. Do you happen to know anything about changes to the instrument that have been made by people demanding new things? Because I know that the noise part was asked by, um, who was it? Gilles-

JL: Gilles Tremblay?

DS: Yeah. And he contacted Martenot to say 'could we add one of these?'

JL: Yeah. He had a tube instrument. It couldn't be added to the tube instrument. Now I mean he could have added an external noise generator and found a simple way to mix it, but no, that would have been a major enterprise, I guess.

DS: Well, that is just something that I have that I picked up. And do you know of any other newer features through the ages that were inspired more by people than new technology, in a sense?

JL: I don't know. I know one of the things that people were missing was what called *des aiguilles* on the tube instrument, they were just little pins that you would just

touch and they would create a quarter of a tone or half tone or something. It's been replaced by little switches, mechanical switches, so they missed the fact that it was very easy to do before, and barely touching it would give you something that would be between a quarter of a tone and the original notes, so they missed that, but it couldn't be replicated on the transistor - at least not simply on the transistor. But otherwise I don't know, I'm not that familiar with that part of the...

DS: OK. I think Jean Laurendeau will have more information.

JL: Possibly. Yeah, because, I mean, he was he was more in touch with the composers and so I guess he would know more about that. My wife's father [Jacques Héту] was a composer, and he wrote a concerto for Ondes Martenot. But you know you took the instrument as is, you didn't ask for anything special; took it as is, and used it in a much more traditional way, not like in contemporary music - they tend to use the Martenot like they do for all instruments, for things they were not normally meant to do but, you know, what he did was more a lot more traditional. So I couldn't help you.

DS: So that's wonderful. I'd like to take some some photos of the components so I'll stop the recording now.

[end of interview]

## Appendix K: Interview with Jean Laurendeau

Laurendeau's home, Montreal, 24 May 2014.

JL: ...pour d'autres livres que pour ce livre là, j'ai donc tout enregistré.

DS: Ah oui, oui, ok.

JL: C'est ça, oui.

DS: Donc, euh...oui, donc, euh, vous ne vous disiez pas que vous êtes compositeur?

JL: Je ne suis pas compositeur, euh, j'ai fait à l'occasion des musiques de film ou de théâtre, mais euh...même, euh, je n'ai pas... Quand j'étais étudiant j'ai fait un scherzo pour piano et une cantate pour ténor et piano, mais c'est tout. Et dès que je suis passé professionnel c'était terminé la composition, mais j'ai gardé des amis compositeurs,

qui d'ailleurs, plus tard, ça m'a servi car ils ont écrit pour ondes Martenot. Voilà

DS: Oui... Ok, donc, pouvez vous me dire, euh, où est-ce que vous avez rencontré les ondes et, et, et, quel était la situation dont vous avez, euh, rencontré ou vu pour la première fois?

JL: Oui, je dirai deux. La toute toute toute première fois j'ai pas vu, mais j'étais censé entendre. C'était la musique de film de Don Juan.

DS: Ah oui?

JL: Don Juan, euh, j'ai dit Don Juan et non pas Don Giovanni parce que c'était une pièce de Molière, n'est-ce pas, c'est le Don Juan, en français...du théâtre. Et une dame qui s'appellait Andrée Desautels, qui est peut-être la toute première personne qui a apporté les ondes Martenot au Canada...euh...en jouait, au moment où le Commandeur apparaît, vers la fin; alors c'est très hein dramatique et très...mais l'utilisation des ondes Martenot était telle que je n'ai pas pu comprendre, où étaient les ondes Martenot. Il y avait come un toc toc toc toc, c'était peut-être une fréquence très grave d'un instrument, mais tellement grave que au lieu d'entendre [makes sound] *brrrr* on entendait [makes sound] *toc toc toc toc* donc pour moi c'était...j'imaginai que les ondes Martenot c'était quelque chose de si grave que cette pièce avec plein de boutons partout, euh...

DS: [indistinct]

JL: Ouais, ouais ouais, absolument [tousse] Puis, j'ai, j'ai, j'ai, j'ai su que c'était beaucoup plus simple et en même temps plus intéressant, c'est lorsque Ginette

Martenot, la sœur de l'inventeur est venue à Montréal, je crois que c'était en [19]56, et mon père, qui était...qui aimait la musique, qui savait que je m'intéressais à la musique contemporaine...donc en [19]56 j'avais, euh, pfff, 18 ans? 18...ouais, euh, mon père faisait à la télévision une émission qui s'intitulait Pays et Merveilles. Et, alors des fois c'était sur un pays, d'autres fois c'était sur une chose, euh, qui est, comment? euh, merveilleuse. Et pis ce jour c'était Ginette Martenot qui était venue enregistrer par...euh, enregistrée...euh engagée par les jeunesses musicales du Canada pour faire des tournées, mais elle a fait des trucs aussi à la radio, et tout et tout; et mon père qui était un très gentil Monsieur, il m'a dit est-ce que, si tu veux, tu viens à Radio Canada, je vais te la présenter; ah ouais bien, excellente idée, alors, on y est allé, on est parti avec mon père en voiture et on s'est arrêtés à l'hotel où elle était et puis elle est montée dans la voiture. Lorsque que je suis arrivé à Radio Canada j'étais déjà presque convaincu, elle avait un bagout extraordinaire, elle parlait de l'instrument de telle façon que

DS: Ouais

JL: Et alors on est arrivé à Radio Canada, et là elle a commencé à faire la vraie démonstration et j'eû l'impression d'un son qui sublimait...ce qui pour moi était le son à ce moment là, j'étais clarinettiste, [DS: ah?] Et je le suis resté encore jusqu'à il y a, 15 ans, mais, euh, j'avais l'impression que c'était la sublimation du son, euh, comment dire...je cherche mes mots même en français quand même c'est ma langue, ahh, acoustique.

DS: Mm.

[4:38]

JL: Une sublimation du son acoustique en quelque sorte. Mais la manière de le produire aussi, je trouvais ça extraordinaire cette touche d'intensité tellement sensible, tellement fine qui dans ce tout petit espace permettait de jouer plus doux qu'une flûte à bec et assez fort pour tenir tête à un orchestre. Je trouvais ça extraordinaire. [DS: mm] et euh et voilà, ça a été mon premier contact

DS: Mm, mm.

JL: Avec les ondes Martenot, alors après j'ai entendu des concerts, puis ensuite lorsque je suis allé, alors, 6 ans plus tard, je suis allé à Paris où j'ai vécu 3 ans, pendant 3 ans, et euh, ça y est je commence à avoir des trous de mémoire. Donc on est en [19]62 je suis à Paris pour la clarinette, j'apprends la clarinette avec Ulysse Delécluse qui est du Conservatoire de Paris mais je ne suis pas élève au

Conservatoire de Paris, je ne l'étais pas à ce moment là, [tousse] et mon ami le compositeur, justement, qui datait de l'époque où je faisais de la composition au Conservatoire, Jacques Hétu.

DS: Hétu?

JL: Oui, qui euh, beaucoup plus tard a écrit un magnifique concerto pour ondes Martenot et Orchestre [DS: ah?] Une chose absolument magnifique. Était une des rare personnes que je connaissait à Paris, parce que je venais d'arriver et j'allais donc le voir, lui, puis sa femme prenait des cours avec Yvonne Loriod qui est partie en tournée et l'a refilée à sa petite sœur Jeanne Loriod, vous connaissez?

DS: Oui, oui

JL: Alors elle est devenue l'élève de Jeanne Loriod, et Jeanne Loriod lui a dit: vous savez moi, mon instrument, mon premier c'est pas le piano, c'est les ondes Martenot, si vous voulez vous pouvez venir à un concert la semaine prochaine, je fait un concert la semaine prochaine et voilà. Alors moi je suis allé leur rendre visite et puis ils m'ont raconté ça et puis ils m'ont dit il y a un concert: ah! oui les ondes Martenot ça je connaissais je savais que [DS: oui] alors, j'y suis allé et puis alors ca a été le second coup de foudre [DS: oui] Ben c'était le coup de foudre qui fait que là tu t'inscris et tu apprends [DS: oui] Tu apprends. Tu apprends l'instrument.

DS: Oui

JL: Surtout que avant de quitter le Canada, avant de quitter Montréal, j'avais été enseigner au camp des jeunesses musicales du Mont Orford, bon, c'est pas très loin d'ici, c'est dans les cantons de l'est, pas loin de là où Jean est actuellement, et, et là il y avait le compositeur Gilles Tremblay.

DS: Oui

JL: Ça vous dit quelque chose?

DS: oui

JL: Bon, et Gilles m'avait dit tu sais les ondes Martenot, tout musicien devrait au moins une fois dans sa vie faire un son filé sur les ondes Martenot

DS: Ah [sourire], oui.

JL: Alors je m'étais dit j'vais faire un son filé, au moins ça. Mais voilà le son filé a duré euh 60 ans [rire].

DS: [rire] ouais, oui.

JL: Alors euh, ouais donc, je suis allé au concert et puis j'étais émerveillé, j'étais... alors 3 jours après j'étais dans la classe de Jeanne Loriod et puis je suis resté comme

ça pendant, 3 ans je pense, 3 ans. Après faut demander à Suzanne, c'est drôle j'ai comme un blanc là, je crois que c'est 3 ans. Et la troisième année, comme les choses allaient assez bien, pour moi, et pour Suzanne, parce que Suzanne est arrivée, je crois que c'est un an plus tard

DS: Ah ouais?

JL: Il me semble ouais. Et...j'ai perdu le fil de mon idée...oui c'est ça la troisième année, Maurice Martenot sachant que Jeanne Loriod avait des élèves prometteurs, il dit: je veux leur enseigner. Alors on a étudié un an avec Maurice Martenot. je suis allé...

DS: Ah oui? Est-ce que c'était très différent où?...

JL: Oui.

DS: Ah oui?

JL: Oui, Martenot c'était beaucoup plus intellectuel, beaucoup plus raisonné, beaucoup plus euh... Jeanne Loriod, c'était très euh très passionné, très euh... mais en même temps euh...peut-être plus efficace, Jeanne Loriod.

DS: Ah ouais

JL: Comme professeur, directement, en tant que telle que je l'ai perçue. Maurice Martenot c'était très intellectuel, c'est-à-dire beaucoup plus analytique. Alors pour ça c'était très bien parce qu'on savait pourquoi on faisait les choses, pourquoi, et notamment, pourquoi cet instrument là est intéressant. Pourquoi? Parce que il est impossible d'être exactement parfait. C'est l'imperfection qui fait que on s'exprime.

DS: Est-ce que vous voulez dire l'imparfait de la technologie ou l'imparfait de...

[10:00]

JL: De la personne toujours

DS: Ah, ok.

JL: Parce que la technologie comme telle...ça veut dire quoi parfait...j'ai pas trouvé le bon mot là, mais la technologie faisait que...pour moi c'était parfait, la technologie

DS: Mm, mm

JL: Mais ce qui n'est pas parfait c'est le, dans notre manière de contrôler et c'est précisément dans les mini différences, entre un geste et un autre qui font que c'est expressif. Et c'est pareil pour le piano ou une clarinette, pour tous les instruments traditionnels, n'est-ce pas, vous jouez au piano, ben vous pouvez jouer plus ou moins fort ou plus ou moins beau, un beau legato [indistinct 10:43], etc. L'aspect, ce

sont les, les, les, ...enfin bref, le fait que ce n'est pas modifiable, c'est, c'est, ce n'est pas figé, voilà ce n'est pas figé, ce n'est pas fixe.

DS: ouais [11:06]

JL: Si je compare, par exemple au synthétiseur, les essais de ruban au son [?] de synthétiseur c'est parfait, c'est juste mais c'est mécanique, c'est automatique.

DS: Ce que je trouve intéressant c'est que on peut seulement dire ça avec des choses qui sont l'inverse, donc euh, Martenot l'a inventé les années [19]20 et [19]30, mais il compare l'instrument ça...ce qui est spécial avec des instruments qui sont inventés un peu plus tard. Donc que dire aux années [19]20 et [19]30 ce qui est spécial parce que c'est plutôt acoustique...

JL: Dans les années [19]20 et [19]30 je crois que ce qui est spécial c'est le côté magique, immatériel, je crois que c'est ça, c'est Orphé qui joue euh, qui est descendu euh, ou remonté des enfers, c'est...je crois que c'est ça, surtout ça parce que...mais aussi la constatation que la science et la technique peut servir à autre chose qu'à faire tourner les roues de l'industrie.

DS: Oui

JL: Ça c'est un point très important surtout à l'époque et qui avait frappé beaucoup les gens.

DS: Oui.

JL: Mais euh, et plus tard...mais aussi juste avant, juste avant Martenot il y avait eu Theremin.

DS: Oui.

JL: Et le Theremin...alors voilà, le Theremin, à mon humble avis, et à l'avis de Maurice Martenot c'était bien difficile à contrôler, le résultat c'est euh, le vibrato peut être un peu énervant [imite le vibrato] ou l'intensité peut-être plus ou moins contrôlée mais euh, je me souviens lorsque je suis allé jouer pour la première fois aux Etats-Unis, c'était à [bruit indiquant qu'il cherche] ça y est! Ça reviendra, j'étais allé jouer dans cette ville, euh, un nom très connu, c'est idiot que [indistinct 13:34] revienne pas, et euh, c'était pour Jeanne d'Arc au bûcher [dialogue par rapport au bruit extérieur et va fermer la fenêtre] (14:17) qu'est-ce que je disait? Cleveland, voilà! Et alors je fait les premières mesures de Jeanne d'Arc au bûcher, de Honegger, le chef d'orchestre c'était Jean Martinon ce jour là et là les musiciens de l'orchestre se sont retournés en disant: you at least you can play in tune. Parce qu'ils connaissaient le Theremin mais ça c'était nouveau pour eux.



DS: Oui.

JL: Voilà. (14:47) j'ai dit: of course! Euh, but it is not so easy! Je me souviens d'un jour à Paris, j'étais clarinettiste, hein j'étais là pour la clarinette, un groupe de musiciens semi-amateurs avait formé un quatuor à cordes avec un professionnel, qui avait fait partie du quatuor Loewenguth très connu à l'époque. Et je jouais de la clarinette, on avait fait les concerto de Brahms et de Mozart, euh pas concertos euh quintette, quintette de Mozart pour cordes et clarinette, et alors tout à coup le violoncelliste, professionnel n'est-ce pas, le, le, vrai musicien, il me dit [prenant une voix hautaine]: mais alors jouant de la clarinette comme vous en jouez, je ne comprends pas que vous ayez eu l'idée d'apprendre les ondes Martenot, cet instrument qui joue toujours juste, mais tellement juste que c'est ennuyeux! Mais, j'ai dit, mon cher monsieur, vous vous trompez complètement c'est très facile de jouer faux aux ondes Martenot, c'est beaucoup plus facile que de jouer juste.

DS: Oui [d'un ton confirmant].

[16:00]

JL: Ah bon!, alors là il a reculé un peu parce que...[rire] voilà

DS: Est-ce qu'il a essayé? Euh?

JL: Ah non, non, parce qu'on était pas chez moi et puis...ouais. Alors c'est ça donc, euh. Voilà donc pour l'instant j'avoue j'attends une nouvelle question?

DS: Ah oui! [rire] ah ben j'ai beaucoup de questions!

JL: Oui ben, je vous en prie...

DS: Combien d'années est-ce que ça a pris d'apprendre l'instrument d'un niveau...

JL: Acceptable?

DS: Acceptable...et c'est presque un instrument acoustique donc ça peut prendre euh...

JL: Une vie, oui.

DS: Une vie? Mais...

JL: Très bien, ca vous venez de dire dans la dernière partie ma réponse

DS: Oui, oui...

JL: La première partie de ma réponse est qu'on peut euh, tout dépend bien évidemment des antécédents...

DS: Ah oui?

JL: Parce que un élève qui commence euh, à 12 ans et qui n'a rien fait avant, ça peut prendre 6 ou 7 ans, pour tout maîtriser. Une personne qui, comme c'était mon cas ou

encore celui de Suzanne et de la plupart d'ailleurs des élèves que j'ai eu au conservatoire, qui a déjà travaillé un instrument de musique avant, on connaît les problèmes de synchronisation, par exemple, la clarinette, synchroniser les doigts avec le coup de langue:

DS: Ah oui?

JL: [monte un gamme] Et ben moi je faisais top, top, top, top [plus lentement] pour varier le staccato tap, tap, tap, donc euh, pour ça euh, 3 ans ça me paraît acceptable., 3 ans parce que il faut... il y a deux, il y a trois techniques fondamentales à maîtriser: un clavier. Alors si on est pas pianiste, hé ben là il faut développer un clavier. Si on est pianiste, ça va tout seul. Mais pas vraiment tout seul parce que le pianiste lui, il est habitué, si il veut faire une note à la main droite et une autre note à la main gauche en même temps, à faire toc [démontre sur la table] si il est aux ondes Martenot il va falloir absolument que ce soit toc toc [deux frappes à peine décalées] sinon ça va sonner, crac toc [rire]

DS: C'est vrai, c'est vrai, moi j'ai pris un petit cours de quelques heures, en 2011 avec Thomas Bloch parce qu'il habite pas trop loin, 3 heures, de là où j'habitais à ce moment et euh, il m'a dit: j'ai euh, appris le piano pour deux ans, mais je ne connais presque rien, il m'a dit que c'est plutôt mieux de ne pas apprendre beaucoup de piano pour euh...

[19:19]

JL: Pour moi les personnes, qui ont pu jouer presque du premier coup les ondes Martenot c'est ceux qui avaient fait du piano et du violon

DS: Et du violon

JL: Je dis du violon mais ça aurait pu être n'importe quel instrument à son soutenu de type traditionnel et cette personne là connaissait les problèmes de synchronisme [sic] du violon et le clavier et tout de suite on sentait que c'était juste [indistinct 19:55] découvrir les ondes Martenot, donc je ne dirai pas que ne pas avoir fait de piano soit préférable mais je dois admettre que, il y avait une période où j'enseignais les ondes Martenot à un niveau élémentaire à Québec et presque tous les élèves qu'on m'envoyait c'était des élèves de piano. Et ils avaient tous exactement le même problème effectivement. Alors dire que c'est mieux de ne pas avoir fait de piano je pense que c'est un peu exagéré mais ça règle pas les problèmes en tous cas.

DS: Oui, mais un petit peu de piano et moi j'ai joué la flute traversière donc euh

JL: Oui c'est le cas de Geneviève Grenier d'ailleurs,

DS: Ah oui?

JL: La flute traversière, oui

DS: Est-ce que vous avez, euh, une méthode d'enseigner qui est la vôtre? Un personnalité dans votre manière d'enseigner?

[20:48]

JL: Ma façon d'enseigner s'inspirait beaucoup de ce que j'avais reçu de Jeanne Loriod mais aussi de ce que j'ai reçu de... en tant qu'élève de clarinette, en tant que clarinettiste. Et euh, ma manière d'enseigner?...c'est que je n'enseigne plus depuis très longtemps hein, ça fait plus de vingt ans que je n'enseigne plus

DS: Ah, plus de vingt ans

JL: Oui parce qu'on a coupé les cours au conservatoire de Montréal, à peu près euh, à peu près il y a vingt ans. J'avais, j'étais encore professeur, et puis euh, un jour une élève s'est présentée et on lui a dit: non non, il n'y a plus de cours. Elle l'a appris avant moi d'ailleurs, ça c'est un autre problème. Donc c'est assez loin, mais, comment est-ce que je pourrais dire ça, je crois beaucoup à la lenteur, il y a un mot de Martenot que j'avais, que j'ai retenu: lorsque quelqu'un commence cet instrument donnez leur toujours pour commencer quelque chose de beaucoup trop facile. [rire] la seule erreur de ça c'est que l'élève me disait: mais vous me demandez un chose idiote là, qu'est-ce que c'est que ça! Mais euh, bon enfin vous voyez ce que je veux dire: commencer par la chose très simple, commencer par euh, le clavier, moi je commence toujours par le clavier

DS: Ah oui?

JL: Pourquoi?, peut-être que j'ai tort mais enfin, peut-être que c'est une erreur. Parce qu'il y a ma petite fille qui a sept ans, j'essaie de lui faire faire un petit peu d'ondes Martenot et je n'y arrive pas. J'essaye de lui faire jouer Au clair de la lune [chante en tapant sur la table] très difficile, très difficile...

DS: Mmmm.

JL: Elle a commencé elle avait cinq ans et puis, elle n'a toujours pas...mais il faut dire qu'elle n'est pas euh, c'est comme un jeu qu'on fait ensemble de temps en temps, c'est pas, c'est jamais, mais vrai qu'il y a un problème là. Parce qu'elle avait joué au piano et qu'elle arrivait à jouer Au clair de la lune très [démontre sur la table].

DS: Oui.

JL: C'est [indistinct] normal, voilà, mais quand même, moi j'avais tendance à

toujours commencer avec le clavier, mais faire des choses très très simples, commencer évidemment par, une, sur une seule note, faire des exercices divers, à la touche d'intensité, c'est à dire, faire une euh, des répétitions de notes lentes, comme ça, un petit mouvement, là je tremble mais, je tremblais beaucoup moins dans ce temps là...encore faire des accents [semble démontrer avec ses mains] et, ah oui mais avant ça des sons filés, c'est à dire un son crescendo,

DS: Mmm, mmoui.

JL: Très, le plus fort possible sans se crever les oreilles, sans crever le haut parleur non plus, puis une attaque forte et diminuendo [montre sur la table], crescendo et arrêt brusque lorsque c'est forte. Et faire ça sur des notes différentes. Ensuite, faire un mouvement...ah oui, c'est aussi une chose que Jeanne Loriod m'avait enseignée que je trouvais magnifique, c'est un mouvement très lent, à la main droite, au clavier, qu'elle appelait: le cinéma au ralenti.

DS: Cinéma?

JL: Cinéma, movie, slow motion.

DS: Ah oui.

JL: Voilà [murmuré] sur la septième diminuée, vous êtes musicienne?

DS: Oui.

JL: Vous savez ce que c'est qu'une septième diminuée?

DS: Oui.

JL: Très lentement, je vais beaucoup trop vite là, presque du Taï-chi, une sorte de Taï-chi des doigts.

DS: Ah oui, oui.

JL: Puis à la toute fin on permet au petit doigt de jouer quand même un peu, puis là vraiment on descend, etc, là toujours très très très lentement et c'est ça que j'aurai du faire avec ma petite fille là, je me disais Au clair de la lune y a rien de plus simple, mais c'est tellement compliqué pour elle. Alors, voilà, ça c'est le début début début début, et puis peu à peu euh, faire des gammes, des choses... autrement dit mettre le ruban nettement plus tard.

DS: Avez-vous eu quelques cours? Euh j'ai lu le livre sur relaxer, enfin j'ai lu ce que j'ai compris [JL: oui bien sûr] mais est-ce que vous pensez que c'est tellement nécessaire de faire des exercices, de relaxer pour jouer les ondes ou parce que c'est si sensible ou...

[26:07]

JL: Je pourrais vous répondre que c'est, c'est, c'est nécessaire je crois pour tout le monde, pour faire n'importe quoi, pour la vie. Donc on n'y croit ou on n'y croit pas, il y a des gens qui peuvent ne pas y croire qui disent oh non moi je n'ai pas besoin de ça, et qui vont peut-être s'en tirer très bien. Mais la relaxation je crois, comme le yoga ou ces choses là ça peut faire du bien de toute manière à tout le monde, et...mais évidemment c'est vrai que les ondes Martenot ça a ce côté hypersensible, qui enregistre immédiatement la moindre inflexion et euh, oui, je pense que connaître la relaxation...mais moi j'ai découvert la relaxation, je vous l'avouerai très humblement quand j'ai voulu écrire ce livre. C'est à dire ça faisait déjà plus de vingt ans que je jouait les ondes Martenot, plus de vingt ans, non pas plus de vingt ans, ah non, pas tant que ça, j'ai commencé en [19]60, euh [19]60, euh, voyons...en [19]62. Quand j'ai interviewé Martenot ben là j'ai voulu m'intéresser à tout ce qu'il avait fait, donc je me suis intéressé à sa pédagogie, je me suis intéressé à la relaxation, il m'a donné son livre: se relaxer, j'en ai deux exemplaires dont un dédicacé, et là je me suis mis à en faire et je me suis dit, mais c'est génial cette histoire là. Mais j'avais jamais pensé avant. Et euh, mais c'est très curieux, c'est deux mondes, deux mondes très différents, et c'était une des caractéristiques de Maurice Martenot de ne pas embêter quelqu'un qui venait lui demander une chose, avec une autre chose qui était aussi de son ressort. Pour lui c'était euh, vous laisser en paix avec sa théorie de relaxation, théorie, non pas théorie, c'est plus qu'une théorie c'est pratique de la relaxation. Et Jeanne Loriod euh, n'était pas du tout euh, adepte de la relaxation Martenot, hein, elle trouvait même que Martenot c'était un peu un charlatan, sur ce point là, sur ce point là.

DS: Oh, je vois.

JL: Oh je pense qu'elle exagérait mais bon. Alors j'ai trouvé ça euh, non, mais vraiment j'étais content d'avoir écrit ce livre ne serait-ce que pour découvrir la relaxation. C'est comme ça que j'ai pu...est-ce que vous avez pu le lire sans trop de difficultés?

DS: Oui, hum, c'était un peu difficile de temps en temps, parce que le Français je n'ai pas pratiqué dès que j'avais 18 ans et moi je suis 27, donc il y a beaucoup d'années que...

JL: Vous aviez 18 ans quand vous avez découvert ça?

DS: Mm?

JL: Vous aviez 18 ans quand vous avez lu ce livre là?

DS: Non, je l'ai lu l'année passé.

JL: Ah bon.

DS: Donc euh, j'avais 26 ans.

JL: Ah oui d'accord.

DS: Donc euh, mais je n'avais pas pratiqué le Français pendant plusieurs années [JL: ouais, ouais, ouais, ouais, ouais] donc c'était un petit peu difficile mais je pense que j'ai compris l'essence des chapitres...

JL: Oui l'essentiel, d'accord.

DS: Oui je pense, euh, on a parlé de votre technique d'enseigner et comment est-ce qu'on, euh, est-ce que vous pouvez me dire un petit peu plus de comment jouer soi-même euh, est-ce que vous pensez que l'instrument il y a quelque chose de spécial, avec cet instrument qui a un lien avec le corps, et le cerveau, qui est peut-être un petit peu spécial?

JL: Oui, ben c'est cette impression que tout le monde a dû vous dire, de...que l'instrument est relié au système nerveux de l'interprète. Ça je suis sûr qu'on vous l'a déjà dit. Enfin [DS: oui, oui] C'est ça, c'est l'impression extraordinaire, et je me souvient d'avoir travaillé avec un mime et, suivre ses mouvements, suivre ses gestes, mais on bouge presque pas ici et vous entendez des différences. [DS: oui] Alors c'est vrai que de ce point de vue là euh, ah oui je suis bien d'accord avec cette pensée, cette idée que c'est...remarquez que j'ai souvent dit que mon meilleur professeur de clarinette c'était Jeanne Loriod.

DS: Ah ouiii.

JL: C'est parce que tout ce que j'apprenais aux ondes je pouvais ensuite l'appliquer à la clarinette et je trouvais ça formidable. De façon pas forcément évidente mais une manière d'être présent à l'instrument etc, etc, et inversement, euh, les choses euh, les truc que j'avais pour clarinette comme je disais pour le staccato par exemples [chante] pom, pom, pom euh, je les appliquais aux ondes Martenot [DS: oui] donc euh, le fait de jouer des deux instruments c'est très, comme on dit que parler deux langues euh is very good for your brain [DS: oui] [rire] mais euh, ben voilà c'est un peu ça. Bien sûr cette question de sensations...oui il faut être très détendu il faut être très relax, mais c'est vrai de tous les instrumentistes. [DS: oui, oui] faut pas non plus euh, surévaluer le, le, travail de l'ondiste, c'est sûr on avait tendance de faire ça beaucoup parce que c'était tellement nouveau le son électronique et cette manière de produire le son était quelque chose de tellement

extraordinaire, tellement nouveau que je suis persuadé par ailleurs que ça, qu'on pense, un avenir, il y a beaucoup d'avenir pour cette manière de jouer et de faire le son [DS: mm], mais on dit parfois, on a parfois un peu exagéré, je me souviens un jour j'étais allé aux États-Unis et un ami là-bas m'avait donné comme cadeau un disque de Clara Rockmore [DS: oui] et j'avais trouvé ça formidable. Et j'avais reçu Jean-Louis Martenot quelques temps après, et je lui avait fait écouter le disque et c'était pas la chose à faire hein [rire] il avait senti que le truc de papa était menacé là, il a dit, oh oui mais c'est pas la même chose, c'est pas aussi bien, j'ai dit, bien sûr c'est pas aussi bien mais c'est quand même intéressant. Voilà [rire]

DS: Mais j'ai, euh, j'ai constaté que tout le monde qui parle de, tous les ondistes qui parlent de l'instrument, mm, en parlent comme si c'était un instrument acoustique mais, euh, il y a quelque chose qui transcende l'acoustique, c'est le son électronique [JL: Bien sûr] mais plusieurs personnes m'ont dit que c'est les deux ensemble, ça fait la magie, euh, la magie

[34:05]

JL: Oui, oui, c'est bien dit, oui je suis bien d'accord avec ça, oui, oui. C'est ça c'est que nous avons un instrument par certains côtés traditionnel, c'est vraiment l'approche du son traditionnel, c'est ce qui fait que lorsqu'on est à l'orchestre, lorsqu'on joue avec un orchestre, on a pas l'impression d'être à ce point un étranger, dans l'orchestre. [DS: oui, oui] Bien que, en même temps on est un étranger parce qu'on a un type de son que personne d'autre ne fait dans le même orchestre. Et ça c'est un autre point où j'étais tellement content, c'est que avant de commencer les ondes Martenot, j'avais été clarinettiste dans un orchestre. Et je savais ce que c'était que de jouer dans un orchestre, de jouer en prévoyant ce que le son devrait-être lorsqu'il arrive dans la salle. Bien que, quand je me suis mis aux ondes Martenot, je me suis dit, mais ce qui est merveilleux c'est que maintenant je n'ai plus à prévoir ce que ce sera dans la salle parce que je peux moi-même être dans la salle et écouter ce que ça donne sur la scène. [DS: ah oui] C'est merveilleux! Ce que j'ai traduit en demandant toujours aux chefs d'orchestres que j'appréciais à être assis à côté de vous et même par là et derrière l'orchestre et par dessus l'orchestre. Résultat il y avait toujours un bel équilibre, en général, enfin, il semblait. [DS: oui] Là dessus je vous avoue que je n'ai jamais réussi à convaincre les Européens, je ne dis même pas les Français, les, tous...parce que les chefs, il y a des chefs qui n'ont jamais voulu que je fasse comme ça parce qu'ils avaient vu Messiaen faire autrement avec les

musiciens, c'est à dire: vous vous asseyez, vous êtes au bord de la scène, le public est là, vous êtes au bord de la scène, le haut-parleur est là et vous vous êtes là [DS: ah (surprise)], c'est ridicule [DS: oui] mais ils font tous ça, pas tous mais, plus ou moins...<sup>359</sup>

DS: Oui mais vous dites, on l'a vu avec Messiaen ou...

JL: Mais je me souviens, d'un chef d'orchestre qui me disait mais moi j'ai vu Messiaen, euh, faire euh, les Trois petites liturgies de la présence divine de cette manière. C'est à dire, bon, vous êtes à côté de moi, votre haut-parleur est là, c'est à dire là au bord de, de, j'ai dit là mais là maintenant le public il est là [Ds: oui} là, j'ai jamais si mal joué de ma vie, parce que j'entendais mal, [DS: ah oui, ah oui] je croyais pas du tout à cette manière, puis je l'ai fait tellement souvent à côté du chef en effet, comme ça j'entends à peu près la même chose que le chef, mais c'est derrière l'orchestre, au dessus de l'orchestre, au dessus, parce que si c'est trop bas ça peut crever les oreilles des musiciens [DS: ah oui] et si c'est assez haut, ça passe par dessus, faut pas que ce soit trop haut non plus parce que là ça sonne un peu, euh, venu d'ailleurs. Il faut que ça fasse partie quand même de l'orchestre. [DS: oui] Et ça c'est un point, je vous avoue, je vous avoue, j'avais presque envie d'écrire un livre juste là dessus, parce que je me suis battu avec des chefs d'orchestre, c'est peut-être la raison pour laquelle j'ai, enfin, c'est l'âge, mais j'ai décidé que je m'arrêtais. Mais, euh, quitte à changer d'avis peut-être, je ne sais pas, mais une chose est certaine. Je me souviens, la dernière fois que j'ai fait justement Les Petites liturgies, à New-York il y a quelques années, le chef m'a dit, mais c'est génial votre idée! Il me dit, moi mais j'ai déjà dirigé les petites liturgies et il y avait le haut-parleur derrière moi, je savais jamais, si c'était assez fort ou trop fort ou pas assez, il fallait que je demande à l'assistant chef d'orchestre dans la salle, est-ce que ça va, est-ce que ça va pas, non? Mais même avec mon truc il faut aussi, c'est bon d'avoir un point de vue depuis la salle, [DS: ouais] parce qu'on est pas dans la salle on est...puis on est pas partout dans la salle non plus [murmure (indistinct)] mais euh, ben voilà. Ça c'est un point, c'est amusant que je vous entends parce que, c'est un

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<sup>359</sup> I insert a brief message from Laurendeau himself, who wishes to clarify what he has explained through gestures in person, but which may not otherwise come across in words: 'Au sujet de la place des diffuseurs derrière l'orchestre, à une hauteur suffisante pour ne pas assourdir les musiciens, mais pas trop bas non plus, pour demeurer présent dans l'orchestre, et de la place de l'ondiste et de l'onde en avant de la scène, de manière à ce qu'il entende à peu près ce que l'on entend dans la salle et exerce un contrôle (presque) parfait sur le résultat sonore.' Jean Laurendeau, personal communication, 13 May 2019.



point, moi, mais qui m'a tellement dérangé. Mais, c'est. On est dans la musique classique là mais, parce que vous vous êtes plus dans la musique populaire si je comprends bien? C'est ça?

DS: Ah, euh, un petit peu plus, oui

JL: Oui, mais vous aviez une formation classique sûrement [DS: oui] de base?

DS: Oui

JL: Oui, ça se sent tout de suite. Et voilà, et alors, mais, même lorsqu'on... Ah oui! la toute première fois que nous avons fait un quatuor d'ondes à Montréal, nous avons placé, euh, j'ignorais ça, j'avais jamais fait ça de ma vie, ce que je viens de dire, je l'avais peut-être fait mais... nous nous étions mis [démontre] bon mettons que le public est là, ça c'est le rebord de la scène, n'est-ce pas voilà, ça c'est ça la scène, on avait mis le quatuor ici, tous bien ensemble pour bien nous voir et bien communiquer et tout, puis les quatre haut-parleurs ici. Catastrophe absolue [rire]! C'était la première fois qu'on faisait ça, [DS: ouais] absolue catastrophe. Alors par la suite, c'est le contraire, on mettait les quatre haut-parleurs derrière et nous devant, ah! Ben voilà! Maintenant on sait ce qu'on fait!

DS: Ouais!

JL: Voilà

DS: Ouais

JL: Mais là dessus, je me suis battu avec des chefs d'orchestre qui ne voulaient pas l'admettre.

DS: Je ne comprends pas parce que c'est des sciences d'acoustique, c'est...

JL: Mais c'est tellement évident [DS: oui], mais je ne comprends, mais c'est qu'ils ont toujours fait comme ça, c'est que... si vous regardez par exemple dans mon livre, il y a la photo de Ginette Martenot qui fait le Concerto de Jolivet à Boston, ben, ses haut-parleurs sont en avant. C'était... ben voilà. Évidemment, il y a quand même quelque chose qui se passe, on entend du son, on peut arriver à doser jusqu'à un certain point, comme je disais, le clarinettiste n'est pas dans la salle, alors, euh, mais moi justement, ayant connu ce problème je m'étais dit, quel, c'est génial de pouvoir faire ça.

DS: Oui

JL: Quand on a fait, nous avons fait euh, le, Saint François D'Assises, il y a quelques années à Montréal avec Kent Nagano mais Kent Nagano a surtout connu les ondistes en France, et mon idée... il m'a dit: j'aime bien faire plaisir à mes musiciens, oui, si

vous voulez, euh; alors, moi j'étais complètement au fond de la scène avec les haut-parleurs en haut, mais les deux autres ondistes, Dominique Kim et euh...ça y est, encore un...très connu mais, des ondistes, elle est professeur au conservatoire...

DS: Euh, Pascale Rousse-Lacordaire, euh, Christine Ott, Valérie Hartmann-Claverie, euh...

JL: Enfin, une de ces personnes là, donc elles étaient en avant. [DS; oui] Alors les gens qui n'y connaissent rien, n'ont rien dit de spécial, n'ont rien remarqué, mais ceux qui s'y connaissent un peu disaient, mais c'est cru!, C'est un son cru! Ça n'a pas de rapport avec le reste, ce qui se passe sur scène et le chant, moi ben, quand, au moment, où l'ange joue de la lyre, ça vous dit quelque chose? [DS: euh?] the angel plays lyre [DS: ah oui, oui] C'est trois ondes Martenot et ça, ça avait passé magnifiquement. Kent Nagano a dit: Jean, je croyais entendre Jeanne Loriod. C'était gentil quand même, mais lui aussi, il a fallu me battre, j'ai reçu un coup de téléphone qui a duré une demi-heure, il était à Munich, puis moi j'étais à Montréal, j'avais même écrit toute mon idée, in english, to make sure he would understand exactly what I want him to understand.

[41:53]

DS: Yeah

JL: Et alors, euh, il a compris que ça serait plus gentil de faire ce que je lui disais, pour moi! Pour les deux autres, non. [DS: ah oui?] Voilà, moi je disais, il faudrait qu'on soit les trois ensembles, un haut-parleur là haut, un haut-parleur là haut et un haut-parleur là haut. Un jour ça se fera peut-être, à San-Francisco là nous avons fait ça et là c'était beaucoup mieux. À San Francisco c'était l'effet contraire, c'est-à-dire qu'on avait tellement, nous étions les trois au même endroit nos haut-parleurs étaient devant nous, mais c'était capté et redonné par d'autres haut-parleurs dans la salle, ce qui donnait une impression de présence totale [DS: ah ouais?]. Ce qui était pas mauvais mais euh...même qu'ils avaient organisé les haut-parleurs pour qu'on ait la sensation de là, là et puis là, mais euh, enfin c'était quand même beaucoup mieux, c'était mieux et il y a eu de belles réactions dans la salle [murmure].

DS: Peut-être maintenant on peut avoir des petits moniteurs, pour les...

JL: Oui mais ça j'ai jamais connu, ça j'ai jamais connu ça, j'ai jamais utilisé ça, sûrement que ça pourrait être la solution, oui.

DS: Euh, quelle est votre pièce favorite de jouer?

JL: Ça c'est difficile...[long silence] ma pièce favorite...ça va peut-être vous

étonner mais je me demande si ce n'est pas le concerto de Jacques Hétu, Jacques Hétu, euh, parce que j'ai toujours eu beaucoup de plaisir à jouer Messiaen, Turangulila, Petites Liturgies, Saint-François et euh, La Fête des belles eaux, peut-être une des choses que j'ai eu le plus de plaisir à jouer, c'est le mouvement lent dans la Fête des belles eaux, les eaux à leur plus haut sommet, qu'on appelle aussi l'Oraison, [DS: oui] vous voyez ce que je veux dire?

DS: Oui

JL: Qui est sur notre disque de l'ensemble d'ondes de Montréal, ça c'est une chose que j'aime beaucoup, je me souviens que j'avais, à un moment où je cherchais quelqu'un pour la préface de mon livre, j'étais à Paris, j'avais téléphoné chez Olivier Messiaen et par un miracle absolument inexplicable c'est lui qui avait répondu [DS: Oh really] alors je lui avait dit que je souhaitais qu'il fasse la préface de mon livre, et bon, il savait qui j'étais, il m'avait [inaudible] et il m'avait dit euh oui d'accord euh, d'accord. Puis là je lui avait parlé de... je ne sais plus comment on en était venu à parler de la Fête des belles eaux, il m'avait dit: oui mais ça euh c'est pas terrible, je lui ai dit oui mais je pense qu'il y avait une page géniale dans la fête des belles eaux c'est l'oraison. [Murmure] long silence [rire]. Il ne voulait pas le nier, mais euh, il était ptêt d'accord, d'ailleurs il a repris ça dans le quatuor pour la fin du temps, alors ça doit être qu'il aimait bien cette page aussi. [DS: oui] Mais je trouve que c'est tellement extraordinaire aux ondes. Sans rien à dire contre les violoncellistes, qui est instrument si merveilleux le violoncelle.

DS: Est-ce que vous avez une autre pièce favorite pour entendre, pour écouter ou...?

JL: Il ya une œuvre que j'ai beaucoup aimée c'est *Mach 2,5* de Tristan Murail. Vous ne connaissez pas [DS: euh, non] Le nom Tristan Murail ça vous dit rien? [DS: oui]. C'est une œuvre que nous avons joué en sextuor mais aussi en quatuor puis en trio et même en duo, parce qu'il a fait une version pour duo [DS: ah oui?], donc on avait le droit d'être moins que six mais pas moins que deux, bien sûr, et ça j'ai beaucoup aimé cette œuvre là, c'est une très très belle chose, quoi d'autre? [Incompréhensible] lorsque je suis embarqué dans quelque chose, c'est ça que je préfère [DS: oui, c'est vrai oui] mais je peux pas vous dire, je peux pas être beaucoup plus précis que ça. Concerto de Jolivet, j'aimais beaucoup, je l'ai joué une fois dans ma vie, mais j'ai beaucoup, j'ai adoré.

DS: Oui?

JL: Oui.

DS: Donc avec votre recherche sur les ondes, avez-vous une, hum, peut-être une, hum, savez vous beaucoup sur l'utilisation ou le rôle des ondes pendant les années, euh, [19]50/60/70, une évolution peut-être...parce que j'ai lu que dans les années [19]50 je pense, ou peut-être [19]40 qu'on ne voulait pas composer pour l'instrument, pas beaucoup parce qu'il y a des musiques modernistes et c'était trop lyrique et...

JL: Oui...absolument, oui, oui, bah vous dire euh, c'est comme l'évolution de la musique n'est-ce pas? Le Martenot est apparu en [19]28, il y avait déjà eu le Pierrot Lunaire de Schönberg, il y avait eu Le Sacre du Printemps, il y avait eu, euh, beaucoup de choses, mais, ça correspondait à une approche musicale où le sens mélodique était quand même très important, et c'est peut-être là que le Martenot s'exprime le mieux, mais là euh, c'est dommage que vous puissiez pas rencontrer Estelle Lemire parce qu'elle vous aurait donné un tout autre point de vue, parce qu'elle est compositrice et puis qu'elle aime beaucoup la musique contemporaine, mais peut-être pas tant autre que ça, parce qu'elle a évolué aussi depuis quelques temps, mais ah...j'ai eu l'occasion de jouer des œuvres, je dirai pointillistes, comme les œuvres de Gilles Tremblay par exemple, Le Cantique de durées de Gilles Tremblay, alors là [chante pour illustrer] je jouais comme ça, et j'ai pu avoir un certain plaisir à faire ça mais maintenant mon plus grand plaisir c'était pas là, je dois l'avouer. En même temps euh, vous avez entendu les choses de Geneviève Grenier?

DS: Euh, pas encore.

JL: Pas encore. Geneviève Grenier elle fait quelque chose de très intéressant, elle fait ça très bien, elle joue vraiment très bien, c'est plus genre euh, musique populaire, c'est plus le style de musique populaire, d'ailleurs elle a fait un disque, elle appelle pas ça un disque elle l'appelle ça un album, ce qui est une expression euh, typique euh [DS: oui c'est vrai] et euh, elle joue bien, elle a un ruban parfait,

DS: [indistinct]

JL: Ah oui, oui vraiment le ruban, absolument merveilleux, et elle croit à ce qu'elle fait et là dessus je l'approuve entièrement, je pense qu'elle a raison de faire ce qu'elle fait et puis je pense que ça va aider les ondes Martenot à être connu un peu plus [DS: oui]

DS: Ce que j'ai entendu des commentaires sur les ondes et la mélodie lyrique, ça m'a étonné un petit peu parce que ce que les ondes permettent c'est un spectre, c'est, on peut...le glissando continu et le volume, pitch continu et le volume continu, donc

on peut faire tout [JL: oui, oui, oui, oui, oui] , ou presque tout [JL: ah tout à fait oui] les timbres différents, donc ça m'a étonné un petit peu qu'on a abandonné cet instrument seulement pour que la musique a changé [JL: oui]. Parce que je pense que si on le voulait on pourrait utiliser les ondes dans toutes les...

JL: Dans tous les styles?

DS: Oui

JL: Oui tout à fait, moi je suis absolument d'accord avec vous, Pierre Boulez a utilisé les ondes au tout début de sa carrière, il a écrit je crois un quatuor d'ondes, mais il faisait aussi de la musique de scène chez Jean-Louis Barrault, ça vous dit quelque chose Jean-Louis Barrault? [DS: mm, non] C'est un des grand hommes de théâtre du vingtième siècle à Paris.

DS: Oui

[52:40]

JL: Et Barrault était, encourageait les musiciens modernes donc Boulez a fait partie de ces musiciens, et alors euh, donc il a écrit pour Ondes Martenot au début, mais quand on lui demandait tu aimes ça cet instrument, il a dit non, non, pour moi c'est alimentaire, c'est pour gagner ma vie que je joue ça mais c'est tout, c'est pas plus. Il avait quand même écrit un quatuor d'ondes que j'ai jamais entendu d'ailleurs mais qui existe paraît-il, que des gens ont joué. Je peux pas en dire plus, mais c'est vrai que...écoutez, et puis en même temps on dira que ce qui a nui aux ondes Martenot ce que, parce que c'est tout de la musique moderne et le public moyen aime pas trop la musique moderne, c'est quoi la vérité euh, en effet je pense que c'est probablement un faux problème que cette opposition entre [cough, inaudible] mais je crois aussi qu'il y a eu une mode à une certaine époque que j'appellerai la mode pointilliste, et vous écoutez aujourd'hui des œuvres de musique pointilliste et vous vous dites mais c'est dépassé parce qu'on essaie maintenant, de, de, justement, on accepte un peu de pointillisme mais pas seulement ça parce que la musique ce n'est pas que l'absence de tonalité. C'est ça entre autres, par moment, pour exprimer une chose comme moi je dis euh, l'époque des voyages inter-planétaires il y a toujours un moment où le voyageur est sans poids, dans le sans poids, il n'y a pas de...alors ça c'est atonal [DS: ah oui] mais quand il doit approcher d'une planète il faut qu'il redevienne tonal [rire] enfin bon, c'est une façon de dire.

DS: Moi j'ai l'impression que, quand je rencontre des personnes qui ont entendu des ondes Martenot, ils savent pas trop mieux, euh pas trop plus du timbre d'ondes et la

lyricité et la mélodie comme le Theremin. Il n'y a pas beaucoup plus donc, ils ont plutôt entendu les ondes dans un contexte, très, presque extra-terrestre, avec des connotations sci-fi ou spirituelles, ou, est-ce que vous...

JL: Il y a un chapitre de ceci que j'ai intitulé la panique et l'extase, c'est ça, c'est que on sort, au début effectivement on identifiait les ondes Martenot comme venant d'un autre monde. Alors ça pouvait exprimer les fantômes, les monstres, mais aussi les anges, on voit avec Messiaen, pour moi ça a toujours exprimé l'être humain que je suis, que nous sommes, mais là euh ça prends du temps. Je pense que l'être humain évolue lentement et qu'en ce moment, et que le vingtième siècle a sorti des valeurs qui n'ont pas encore été assimilées, j'ai l'impression. Parce que même lorsque je suis en France, hein les Français, qui étaient tout près du Domaine Musical hein, de toutes ces choses là, sont souvent très conservateurs et vous disent les ondes Martenot, ah non parce que la musique moderne j'aime pas. Donc euh, c'est ça, ça prends du temps avant d'atterrir. Mais c'est vrai ça vient, c'est un autre monde, effectivement c'est un autre monde, le monde de l'électronique. Un autre monde qui est appelé à devenir de plus en plus notre monde. Donc euh, cet aspect extrêmement expressif des ondes Martenot c'est merveilleux pour exprimer entre autres notre monde. Mais aussi peut-être d'exprimer autre chose, quand on dit le divin Mozart ben, ça vient aussi d'on ne sait pas où mais, le sens du divin attribué à la musique était déjà présent il y a trois mille ans, dix mille ans.

DS: Est-ce que vous pensez avec le son qui est pas très étranger à ce moment, le monde moderne, un nouveau siècle euh, le son électronique est très normal pour nous, pour notre génération aujourd'hui, est-ce que vous pensez que ça peut encore avoir la connotation un petit peu euh

JL: Ben, dans la mesure où c'est toujours comme ça pour la musique, il y a toujours un côté, de connotation comme...ça suggère l'au-delà, comme je vous disais Mozart, Mozart c'est pas de l'électronique, mais il y avait euh...mais il a écrit néanmoins une chose pour une invention d'un Américain là, celui qui a inventé le paratonnerre [Benjamin Franklin?], je ne sais pas si vous voyez qui je veux dire euh? L'orgue de verre [DS: Ah oui?] Dans le genre que Thomas Bloch a exploité aussi de son côté...comment il s'appelait ce monsieur?

DS: C'est pas harmonium...?

JL: Oui, l'harmonica de verre, oui, je crois que c'est...Mozart a écrit pour l'harmonica de verre, nous avons joué ça aux ondes Martenot évidemment, et à ce

moment on voit qu'il avait lui même...il entendait des choses qui un jour se réaliseraient, de sorte que la jeunesse d'aujourd'hui peut très bien euh, continuer à croire que le divin existe encore quelque part et que l'être humain est destiné à l'incarner, bon voilà. Mais ça ne veut pas dire, parce que là où je pense qu'il serait regrettable que nous évoluions ce serait de dire que tout n'est que...il y a que des électrons et tout est froid et y a pas de...voilà. C'est le danger, actuel.

DS: Oui.

JL: Je pense qu'il y a des gens, il y a des gens comme vous ou comme Caroline Martel qui me montrent que le danger n'est pas absolu, donc voilà.

[1:00:26]

DS: J'ai parlé avec Jean Landry et il m'a dit qu'en Suède on est en train de faire un instrument de production plus facile pour euh, [JL: et pas trop cher], et pas trop cher oui.

JL: Plus euh...voyons...en grand nombre, plus industriel, donc ça pourrait coûter moins cher, ça pourrait...oui effectivement, il y a de l'espoir de ce côté là, j'espère qu'il va y arriver parce que...

DS: J'ai lu et j'ai entendu que il y avait un petit problème avec le contraire, avec Mr Oliva, on a cru qu'on pouvait le montrer le juin de cette année mais peut-être septembre ou la fin d'été, donc

JL: Oui, c'est ça il y a eu, je ne sais pas quoi, un petit accrochage avec Mr Oliva, mais apparemment qui n'est pas sans solution, et on veut trouver une solution, il semblerait. Ça ce serait ce dont Maurice Martenot rêvait, sauf que Maurice Martenot n'était pas du tout intéressé par le commerce, ça ne l'intéressait pas du tout, du tout, du tout sauf peut-être pour gagner sa vie, pour vivre. Il aurait bien aimé que certains instruments qu'il avait inventés se vendent plus facilement, et bon, etc. Ça n'a pas marché. Mais peut-être que ça ça pourrait marcher, si, si on respecte intégralement ce qu'est l'instrument à la base.

DS: Mais ce que c'est très intéressant c'est que, c'est qu'on a pu diminuer le prix, seulement par en fabriquer plus et pas par laisser tomber quelques euh, la qualité ou la...

JL: Bien sûr, c'est ça. Le travail de Mr Oliva je crois était un travail de très grande qualité. Je vous avoue que je n'ai vu cet instrument qu'une fois dans ma vie, c'était en 2001, ou 2000. Et j'avais dit, ça, lui, il a l'avenir, lui il a compris, voilà. D'ailleurs, il m'a flatté, il m'a dit j'ai lu votre livre, ça m'a inspiré, enfin bon. Mais

j'avais l'impression qu'il était vraiment sur la bonne voie et euh, semble-t-il ça s'est poursuivi. C'est pas nécessairement parfait mais. Il y a aussi Dierstein, lui je le connaît pas du tout, je l'ai pas entendu.

DS: Oui, je l'ai entendu, [JL: Oui?] oui et euh, Jonny Greenwood en a acheté un et le week-end passé il a donné deux concerts, un concert avec un ensemble Inde, et Israeli, et c'était très...il a pris une position très euh [JL: simple?] oui, simple, il a pas pu prendre, le, euh, je ne sais pas comment dire mais, il a invité l'ensemble et il a juste donné quelques euh, notes là et là

JL: Des exemples, quelques exemples?

DS: Euh

JL: Il a joué un concert?

DS: Oui c'était un ensemble et il y avait aussi les ondes dans le...il a pas joué beaucoup, il a aussi joué de la guitare et mais c'était une [indistinct 1:05:10?], et le jour prochain, le dimanche, il a donné un concert avec l'orchestre d'ondes contemporaines, il jouaient un peu de There Will Be Blood, quelques concerts, donc euh, avec pas beaucoup d'ondes mais c'était là aussi. C'était l'instrument de Dierstein et après j'ai parlé avec Jonny Greenwood, une minute, et il m'a dit, euh, c'est génial. J'en ai seulement joué un instrument original pour cinq minutes donc je peux pas comparer très bien mais c'est juste...

JL: Parce que lui il avait avant ça un instrument qui venait de chez Jean-Louis Martenot.

DS: Oui, oui, le digital, ça avait un son très différent.

JL: Oui. J'ai connu Dierstein uniquement par le fil de Caroline Martel. Mais il m'a fait une très bonne impression là comme d'une personne, à la fois qui ne se prend pas trop au sérieux mais qui en même temps prend la chose très au sérieux, [DS: oui, c'est vrai] et qui euh, qui est probablement d'un état d'esprit qu'il faut. C'est ça.

DS: Et la replica [JL: une réplique, oui] du modèle de Thomas Bloch avec tout ça et des additions modernes, donc on peut utiliser un amplificateur [JL: synthétiseur] oui, oui, c'est ça, mais on a gardé tout le [JL:l'âme] oui, oui. Mais ça coûte [JL: très cher] €11.000 donc j'ai pas encore pu acheter mais, mmm, mais les nouveau ondes [indistinct 1:08:32], je suis vraiment intéressée.

JL: Moi je vais vous dire une chose, euh, il ya des archets de violon, qui coûtent \$100.000 [DS: Gasp, oui c'est vrai] mais on peut quand même jouer du violon avec des archets de \$500! Mais c'est qu'il y ai tout au fond ce qu'il faudrait c'est qu'il y



ait une gamme de possibilités mais celle là, l'instrument industriel, je crois qu'il est nécessaire, il faut qu'il existe, mais ça n'empêchera pas les Dierstein d'exister avec peut-être quelque chose de probablement un peu plus fin, un plus raffiné enfin.

DS: Je pense que c'est nécessaire pour des gens qui sont intéressés de pouvoir acheter un pour étudier [JL: oui!] pour pratiquer et voir si c'est leur truc ou pas, et puis il peuvent...

JL: Est-ce que vous vous êtes intéressée aux japonais, à ce que font les japonais?

DS: Oui

JL: Oui, vous êtes pas, vous allez aller au japon?

DS: Mm, je peux peut-être, je peux aller au japon l'année prochaine [JL: ah bon] mais je n'ai pas encore contacté...

JL: Mais dans le cadre de cette étude là?

DS: Oui.

JL: Oui, bon, parce qu'il y a des gens formidables aussi au japon, il y a Takashi Harada, évidemment vous connaissez son nom, [indistinct] puis il y a aussi, ça je sais pas si elle est très connue, euh, moi je l'avais rencontrée à Paris euh, en 2001 justement quand j'avais essayé l'instrument de Mr Oliva, euh, et on est restés un petit peu en contact depuis, un petit peu comme ça de loin, Wakana Ichihashi, et elle m'avait envoyé un jour un disque formidable, elle joue bien, et j'ai rencontré, euh, avant-hier, euh, il y a trois jours, mercredi soir au concert de Geneviève, un nommé [Patrick] McMaster, ça vous dit quelque chose, non, ça vous dit rien?

DS: Non.

JL: Qui m'a dit, euh, qu'il voudrait traduire mon livre en anglais, [DS: ahh] ce qui serait très bien, il m'a dit aussi que il était en contact avec les japonais, puis qu'il y avait quelqu'un au japon qui essayait de faire un instrument de seulement quatre octaves et qui coûterai au maximum \$500.

DS: 500!

JL: J'ai dit, ahh ben c'est très intéressant, mais j'ai dit j'espère qu'ils consultent les ondistes au japon, des japonais, parce que...puis je lui ai demandé vous connaissez Takashi Harada, oui, oui, et Wakana Ichihashi, oui oui je la connais, parce qu'il doit aller les voir et puis voir où ça en est, et puis je sais pas, il va me donner des nouvelles, je sais pas hein, ça c'est peut-être rien du tout là j'en sais rien, mais l'idée, c'est évidemment, attention, l'idée c'est pas de supplanter les ondes Martenot mais c'est de faire un instrument pédagogique dont Martenot lui même rêvait à la fin

de sa vie. Qu'il m'avait fait essayer là l'instrument, je sais plus son nom, un instrument avec moins d'octaves...

DS: Oui, je pense que c'était les années [19]50 ou?

JL: Ah non, non. Non, Il y a eu, oui il y a eu des efforts dans les années 50 mais moi ce dont je parle c'était en [19]80, il m'avait fait essayer son modèle quand j'étais allé l'interviewer pour ce livre en 1980, en juillet 80, et euh, [indistinct 1:11:58] c'est pas...mais c'était bien son instrument, c'est son instrument mais, plus petit pour que ça coûte moins cher. Mais alors euh, mais alors il est mort, quelques mois après.

[1:12:16]

DS: Est-ce que vous pouvez me dire un petit peu, quelque chose sur l'intention de Maurice Martenot au tout début, avant [de] faire cet instrument, qu'est-ce qu'il avait, euh, qu'est-ce qu'il imaginait?

JL: C'est très... Il y a beaucoup de différences entre les témoignages que les gens donnent, les uns et les autres, moi j'ai l'impression qu'il y avait une idée pédagogique derrière ça, il s'était dit c'est extraordinaire parce qu'on peut entendre jusqu'à un 32ème de ton et on entend très nettement la différence. Et il y avait probablement une idée pédagogique c'est-à-dire de... parce qu'il était le frère de sa sœur aînée, Madeleine qui avait, qui était au fond, qui était elle à l'origine véritable de la méthode Martenot n'est-ce pas. Et lui, il avait été, il était un peu dans la, comment dire dans le sillage de Madeleine, et il se disait ça va être formidable sur le plan pédagogique, ça va permettre de travailler la finesse auditive de nos élèves. Et en même temps, je suppose qu'à mesure qu'il, ça c'est ma théorie, c'est qu'à mesure qu'il travaillait dans cet instrument il s'est aperçu que il était en train de faire un instrument de musique, et pas juste un outil pour perfectionner l'oreille de ses élèves. Ça c'est vraiment l'impression que j'ai.

DS: Ouais,

JL: Et euh, c'est d'ailleurs un point très intéressant c'est qu'un certain Monsieur Bilstin, ça vous dit quelque chose?

DS: Oui, c'est dans...

JL: Ah oui, des fois les gens se souviennent pas de tout ce qu'il y a dans les 300 pages. C'est ça donc Bilstin leur a enseigné la relaxation alors qu'il travaillait à son instrument et ça moi je suis persuadé que ça. Il y a eu une interférence, parce que il est arrivé à faire un instrument tellement simple d'approche et permettant en même

temps une telle complexité dans l'expression que sûrement que l'exercice de relaxation l'ont aidé à trouver euh, le chemin le plus simple vers ce qu'il voulait réaliser.

DS: Mmm, ah oui

JL: Est-ce que j'ai répondu à votre question? Ben c'est à peu près ça, je pense que la relaxation a joué un rôle sûrement, c'est un peu ma théorie, je peux pas vous dire qu'il m'a dit ça lui. Si ce n'est que le jour du premier concert, vous connaissez l'histoire, et ben il dit c'est grâce à la relaxation si j'ai réussi à jouer quand même de manière que...qui ait convaincu la salle. [DS: Oui, il avait avoir] il venait d'avoir un trouble épouvantable, une peur effroyable, que toute sa vie s'écroulait là, tout son travail. Et, euh, mais non, ça apparemment qu'il a... on en a parlé dans les premières pages des journaux, pas dans les pages culturelles parce que c'était un évènement. Il y avait eu avant Theremin, mais je pense que ça a plus convaincu sur le plan artistique, ça a convaincu plus. Je crois.

DS: intéressant, parce que il y a, euh, a step in between, ce que j'ai entendu, le travail qu'il faisait avec les ondes dans la guerre, avec la radio et faire un instrument. C'est un, oui.

JL: Oh il y a une grosse euh, grande étape bien sûr, ce que, lorsqu'il était, il faisait ça pendant la guerre, il tournait un bouton comme ça et...

DS: Oui, ça m'intéresse beaucoup parce que je suis en train d'essayer de trouver des choses, de l'info pour voir, où la technologie a avancé les ondes et où les gens ont avancé les ondes. Donc, bien sûr la technologie doit être euh, là, mais c'est souvent que les gens ont influencé Martenot, ou ont demandé de faire quelque chose ou,

JL: Oui c'est-à-dire Martenot, bon il y a eu des assistants qui parfois en savaient plus que lui sur certaines choses et qui les lui ont apprises. C'est ça. Mais ce que Jean Landry vient de réaliser pour la touche d'intensité c'est une merveille, c'est une merveille. Parce que je vous assure hein, je sais pas si vous avez connu des clarinettes ou des hautboïstes, euh, des gens qui jouent de la clarinette ou du hautbois, le problème de l'anche.

DS: Ah oui,

JL: L'anche qui est toujours un problème. On a essayé de remplacer par l'anche en plastique puis, ça peut donner des résultats très étonnants mais, c'est comme si l'insécurité était nécessaire à la vie. Là, je sais pas qu'est-ce qu'on en dira dans dix ans mais, pour l'instant le soulagement que ça me donne de sentir que je joue, je

joue, je joue, je travaille le staccato, je n'use pas la poudre. Ça pour moi c'est extraordinaire, c'est, et comme me disait Jean avant-hier, puisque moi j'y suis allé, c'est avant-hier que j'y suis allé, oui c'est avant hier, parce que je voulais le voir pour vous, et je lui ai dit que, non, ce qu'il me disait, oui c'est ça ce qu'il me disait c'est, tant que la nouvelle technologie n'était pas là, ben Martenot avait raison de faire ce qu'il avait fait, c'était, on pouvait rien faire de mieux. Mais maintenant qu'il y a cette nouvelle technologie alors là c'est formidable, on peut [DS: oui] ca c'est vrai. Qu'est-ce que je dirai dans dix ans, je n'en sait rien, si je joue encore dans dix ans, mais une chose est certaine c'est que pour l'instant il y a une espèce de jubilation à sentir que je peux, ce fameux concerto de Jacques Hétu dont je vous parlais, il y a beaucoup de staccato au début. Et ça c'est ce qui use la touche le plus [DS: Oui] ben là j'ai l'impression que, elle va sûrement s'user un jour, mais ça va prendre cent fois plus de temps sûrement.

DS: Oui, Suzanne m'a dit aussi que son petit sac à poudre, elle ne voulait plus faire des staccato, pas pour [1:19:57 inaudible, parlent ensemble] oui donc elle est très contente aussi. Donc est-ce que les ondistes à Montréal ont demandé à Jean Landry est-ce que vous pouvez faire quelque chose?

JL: Oui, pour cette chose là? Oui, c'est-à-dire que ça c'était euh, ils appelaient ça le mulet, c'est-à-dire c'était l'instrument sur lequel ils expérimentaient puis que de toute façon moi je ne pouvais pas m'en servir parce qu'il était kaput [DS: oui] euh, donc mais j'avais un instrument du conservatoire, donc j'avais pas besoin, alors il a fait toutes ces expériences sur cet instrument là. Et puis finalement, il y était presque arrivé et puis, oh il y avait encore un petit problème et ainsi de suite, bon ça il avait, il y a encore un petit quelque chose mais là mon plaisir ça va être de brancher cet instrument sur mon haut-parleur qui est très supérieur à celui de Suzanne et je verrais là, je retrouverai probablement ce que j'ai ressenti l'été dernier, point de timbre et au point de vue euh, oui. Donc euh c'est ça l'interaction de la technique et de la, comment dire, de l'art [DS: oui]. C'est sûr que elle a toujours existé et elle existe encore.

DS: Oui, et est-ce que vous savez qui ou quoi lui a convaincu de mettre un clavier dedans, parce que c'était...

JL: Oui au tout départ euh, c'était donc cet, ce machin à distance, le jeu à distance, mais je me demande si c'est pas Stokowski, si c'est pas Stokowski qui lui avait fait des remarques à ce sujet là, je me souvient pas, il faudrait que je relise mon propre

livre car je suis pas sûr. Je sais que Stokowski il s'intéressait à tout ce qui se faisait dans le monde, euh, j'ouvre une parenthèse, vous savez Caroline Martel, elle a fait un film, mais aussi je peux vous assurer qu'elle est devenue une spécialiste en ondes Martenot si vous pouviez la contacter je suis sûr qu'elle aurait beaucoup de chose à vous apprendre, moi elle m'a appris des chose vraiment euh. Notamment sur euh, c'est ça, sur la relation avec Stokowski. Quoique il y a des choses que je voulais, je voulais la corriger sur certains points euh, un article qu'elle m'avais envoyé mais euh elle a beaucoup de choses à dire sur l'instrument, moi je l'ai nommée ondiste euh...honoraire.

DS: Ah oui, je vois.

JL: Ondiste honoraire, voilà. Parce qu'elle a compris tout, mais j'avoue que vous aussi vous êtes pas mal dans la même gamme [DS: {rire} merci] euh, pourquoi j'ai ouvert une parenthèse mais de quoi on parlait?

DS: La relation avec Stokowski.

JL: Ah oui c'est ça, ben oui, moi ce que j'ai compris c'est que Stokowski venait régulièrement voir l'instrument, et je dirais pas que c'est Stokowski qui a dit à Martenot de faire ça mais c'est certain que quand il a vu le clavier il a dit: Ah! Ça y est, ça je veux absolument que vous veniez jouer avec mon orchestre à New-York, [DS: Ah oui], euh à Philadelphie pardon, oui, donc euh. Mais est-ce que c'est lui qui lui a dit vous devriez faire un clavier ou quelque chose qui marche plus, qui peut aller plus vite etc, euh, je peux pas dire.

DS: Mais c'est intéressant parce que pour jouer au ruban il y avait déjà une petite image de clavier, et...

JL: Mais oui! Donc il avait peut-être en tête de finir un jour par faire un vrai clavier, ça c'est bien possible.

DS: Oui. Et je pense qu'il y avait un modèle qui était juste le clavier et...

JL: Plus tard, plus tard. Lorsque, c'est ça, lorsqu'il avait joué à Maurice Ravel sont quatuor à cordes, ou plutôt euh, enfin quoi, euh, du Maurice Ravel, il y avait deux claviers avec seulement, il y avait deux instruments avec seulement le clavier et deux instruments avec seulement le jeu au ruban.

DS: Ah oui.

JL: C'est ça. Il avait arrangé quelque chose avec ça et apparemment Ravel avait aimé ça.

DS: Concernant la technologie, est-ce que vous pensez que euh, que Martenot a

imaginé quelque chose euh, qui, j'en ai parlé avec Jean Landry, il m'a dit que les technologies des ondes c'est juste combiner ce que euh ...

JL: Ce qui existait à l'époque.

DS: Oui et donc, c'est juste la combinaison mais est-ce que vous pensez qu'il avait une imagination qui surpassait euh ce...

JL: Ce qu'il faisait?

DS: euh, oui.

[1:25:31]

JL: Ah oui, sûr sûr sûr, [DS: oui]. Je l'ai écrit dans mon livre d'ailleurs qu'il a...ça c'est pas les ondes Martenot c'est un chat qui miaule [rire]. Dans les cahiers Jean-Louis Barrault/Madeleine Renaud c'est-à-dire cet homme de théâtre dont je parlais, il avait publié un article où il disait quelque part qu'un jour on brancherait des électrodes directement sur le cerveau et il suffirait de penser la musique pour que quelqu'un l'entende. Ça. Ça vous dit? [DS: oui] et il était pas loin de la vérité puisque j'ai déjà vu en reportage, on montrait quelqu'un qui conduisait son bateau simplement par la pensée. Il voulait aller à gauche, il arrivait à faire aller le bateau à gauche ou à droite euh, alors sûrement qu'un jour on y arrivera, mais il rêvait à ça. Pour lui c'était vers ça qu'on allait.

DS: Est-ce qu'il a rêvé des choses qui [ne] se sont pas passées? Euh, qui n'ont...

JL: Il aurait, je sais pas si ça répond à votre question que je devine, mais il aurait rêvé de faire un instrument...ça c'est très curieux, ça c'est un aspect que j'ai trouvé très bizarre, il m'a dit ça, c'est curieux mais à une certaine époque pour lui, le mot électronique, dans ce temps là, n'existait pas on disait radio, radiophonique ou radio-électrique. L'électronique c'était la radio. Et il aurait aimé, il a d'ailleurs fabriqué un instrument qui pouvait servir soit à écouter la radio, soit à jouer du Martenot. Appellant cela la radio passive, quand vous écoutiez la radio, la radio active quand vous jouiez du Martenot. [DS: ah ouiii] ça il m'a dit ça, je pense que je doit en parler un peu là-dedans.

DS: Ah ok

JL: Mais euh, c'est effectivement une chose assez frappante, je me souviens que ça avait beaucoup frappé Caroline Martel quand je lui ai raconté ça. Mais en même temps, évidemment c'est son côté commercial, très peu développé, mais il pensait qu'il en vendrait plus comme ça que autrement. [DS: ah oui] Après ce qui est arrivé, je sais pas. Mais j'ai quand même dans mon sous-sol un instrument que Andrée

Desautels, cette femme dont je parlait au tout début de notre entretien, euh, l'instrument qu'elle avait utilisé, on voit que ça a l'air d'être un appareil de radio. Puis il y a des boutons d'ailleurs sur le haut-parleur, probablement pour pouvoir écouter la radio. Voilà

DS: Mm.

JL: Ça c'était un chose dont rêvait Martenot et qu'il a réalisé mais qu'est-ce que ça a donné? J'ai pas l'impression que ça a donné grand chose.

DS: Je me demande, parce qu'il rêvait d'un futur pour les ondes, bien sûr [JL: oui], mais pas commercial, donc où est-ce qu'on trouve la balance entre être commercial et survivre? [JL: oui] Donc euh, je pense que ça a déjà passé un petit peu parce que les ondes sont encore vivants, [JL: oui] mais pas commercial, mais qu'est-ce qu'il voulait je pense?

JL: Ah ça c'est une autre chose qui est là-dedans, c'est que, mais je comprends très bien que vous ayez oublié parce que c'est très court, c'est un demi-paragraphe. C'est parce qu'un jour des banquiers sont venus lui dire, Monsieur, de quoi avez vous besoin? Et c'est tout juste si il leur a pas répondu, qu'on me fiche la paix! [DS: ah oui {rire}] Grosso modo, mais, non il a pas dit ça mais ça voulait dire ça: ce dont j'ai besoin c'est de pouvoir continuer à faire mon travail dans mon studio et c'est pour moi ce qui est important. Euh, alors ça c'est Ginette Martenot qui m'a raconté ça, et elle m'a dit: vous comprenez bien qu'ils ne sont jamais revenus.

DS: Ouais, [rire] oui.

JL: C'est ça, c'est que, je pense pas qu'il était contre. Mais ça ne l'intéressait pas, point, c'est tout. Mais il y a un de ses fils qui lui en voulait beaucoup pour ça, parce que quand j'avais écrit, pour faire ce livre toujours, j'avais interviewé, surtout Jean-Louis, parce que c'est Jean-Louis qui m'avait vraiment bien reçu, mais j'avais aussi enregistré un autre, Jean-François Martenot, je crois, qui m'avait dit, que ah l'instrument de papa euh, faudrait mettre ça entre les mains d'un groupe pop, populaire, qu'au moins ça rapporte un jour, parce qu'il nous a assez fait. Je dirais pas quoi, euh avec ça, que euh, il en voulait à son père, beaucoup. D'ailleurs je pense que ça n'a pas été un père idéal [DS: je vois], je ne crois pas, malheureusement. Mais, voilà.

[1:31:08]

DS: Quelque chose d'autre. [JL: oui, oui] qu'est-ce que vous pensez, euh, était la réaction des gens, euh, est-ce qu'il y avait un évolution de réaction des ondes

pendant le XXème siècle. Est-ce qu'il y avait des bruits euh, de noms, des...

JL: Oui, il y a eu dans les années [19]30, euh, le cinéma s'est emparé de l'instrument. Enfin, on l'entend souvent dans les films de cette époque là, peut-être même [19]40, peut-être même [19]50, je veux dire ensuite ça a continué. Il y a eu un moment où c'était très, très important. Il y a eu quelques euh, chanteurs populaires comme Jacques Brel, qui ont utilisé l'instrument, euh, Sylvette Allart [DS: ah oui, oui]. C'était euh...Et puis, euh, et là ben, le synthétiseur est arrivé à ce moment là. Le synthétiseur qui, théoriquement pouvait remplacer n'importe quoi, dont les ondes Martenot. Et placés en second plan dans un accompagnement musical, euh, ça pouvait faire un effet à peu près semblable aux ondes Martenot, de loin quand on écoute pas trop. Et euh, ça je pense que ça a été la décroissance, forcément, des ondes Martenot. [DS: oui] L'instrument a...

DS: Oui, les années [19]60?

JL: Oui les années [19]60, Robert Moog, je crois que c'était à peu près à cette époque là. Les années [19]60, c'est-à-dire les années où moi, j'ai commencé à apprendre les ondes Martenot. Mais jamais j'ai voulu apprendre le synthétiseur.

DS: Oui.

JL: Et en même temps il y a cette chose bizarre que, combien de fois ça m'est pas arrivé aux Etats-Unis de jouer, avec l'orchestre évidemment puisque je jouait la Turangalîla, les trois petites liturgies, euh, Jeanne d'Arc au bûcher d'Honegger, euh, bon, c'était à peu près tout hein. Mais les gens me disaient, mais comment faites vous pour avoir autant de présence et en même temps vous vous mêlez à l'orchestre si bien? Je disais, je vais vous expliquer pourquoi c'est parce que ça, c'est un instrument de musique. Ah! Parce que nous avec nos synthétiseurs, on arrive pas à faire comme vous. Et ben, j'ai dis, ben voilà. Le synthétiseur, c'est un instrument extraordinaire aussi à sa manière qui peut faire des des...Je compare aussi...la relation entre les synthétiseur et les ondes Martenot, je le compare, je comparerais ça à la relation qui pourrait avoir entre l'orgue à tuyaux et à la flûte. La flûte c'est un tuyau qui fait des sons, mais un son qu'on peut caresser, qu'on peut cajoler, qu'on peut, on peu...on peut vraiment, on le contrôle avec toute sa sensualité, sa sensibilité. L'orgue est une puissance extraordinaire, c'est une locomotive, c'est un orchestre, c'est absolument inouï, c'est irremplaçable. Mais c'est deux niveaux différents, et je pense que c'est un peu ça le synthétiseur qui peut tout faire et les ondes Martenot qui fait pas tout, mais ce qu'il fait c'est rejoindre plus profondément



l'âme humaine voilà.

DS: Oui, [JL: enfin] c'est vrai que c'est très intéressant, oui.

JL: Ça vous le retrouverez dans mon livre, mais Suzanne m'a dit que vous en avez un exemplaire hein?

DS: Oui, oui.

JL: Mais est-ce que c'est...j'ai cherché dans mon ordinateur la fois d'avant que nous avions correspondu, j'ai jamais pu trouver [DS: ah?] Parce que je voulais me rappeler, qu'est-ce ce que...de quoi on s'était parlé. Parce que c'était à propos de mon livre?

DS: Oui, je pense que j'ai parlé à Suzanne, euh [en] 2012 et je pense qu'elle m'a dit, je vais vous donner le courriel de Jean Laurendeau parce qu'il a écrit le livre et je vous [ai] contacté pour ....

JL: Et je lui ai dit, je n'en ai pas assez...

DS: Oui, et vous m'avez donné le courriel de Jean-Louis Martenot et je suis venu à Paris et j'en ai acheté deux, un pour moi et un pour la bibliothèque de l'Université de Leeds. Donc pour avoir...

JL: C'est bien, c'est très très bien ça...

DS: Oui, et...

JL: C'est où ça Leeds exactement?

DS: Leeds c'est deux heures en, pas en dehors mais plus haut de Londres

JL: De Londres, ah oui, d'accord. Ok je comprends.

DS: Oui (1:36:08) C'était très important pour moi parce que j'enseigne un peu de choses sur les ondes, parce que j'ai enseigné beaucoup sur les instruments électroniques et l'utilisation des instruments électroniques au, euh, à la musique populaire et euh, je pouvais donner des exemples. Et les ondes Martenot ont été ma spécialité un petit peu donc, voilà, les étudiants...

JL: Mais vous en jouez? Vous avez un instrument?

DS: Je n'ai pas d'instrument, je n'ai pas, mm, ce n'est pas disponible, euh...

JL: Vous êtes ondiste honoraire vous aussi, bon d'accord?! [rire]

DS: Oui, oui, un jour, un jour. Mais euh, c'est bien pour les étudiants, pour écrire des papers et des...oui des choses. Donc euh, mais une traduction en anglais ce serait très bien parce que les élèves, euh, les étudiants de Leeds, ne savent pas beaucoup de français, donc, c'est là mais c'est pas très...

JL: Oui ben ça, ça fait, euh, ça fait 25 ans qu'on en parle et puis, je sais pas si un

jour ça se produira, mais en tous cas il y a ce jeune homme que, enfin ce monsieur que j'ai rencontré mercredi soir et qui me disait, moi j'aimerais traduire votre livre en anglais. Ben je lui ai dit, moi j'aimerais bien que vous le traduisiez en anglais, puis il m'a dit justement qu'il était sur le point d'aller au Japon, il me dit, je suis sûr que les Japonais seraient contents que votre livre soit traduit en anglais, parce qu'ils comprennent pas très bien le français mais ils comprennent en général assez l'anglais pour pouvoir euh... alors, ben j'ai dit, oui ça serait bien, j'ai dit cependant vous me montrerez ce que...

DS: Oui, est-ce qu'il était anglais?

JL: C'est un anglophone oui, on a parlé en anglais pendant tout le temps,

DS: Oui.

JL: D'ailleurs, si vous avez des problèmes trop gros là, vous pouvez y aller en anglais, mais je suis pas très fort en anglais, mais je peux comprendre quand même un petit peu, là.

DS: Mm, oui.

JL: J'aime bien. Je peux parler ondes Martenot en anglais, parce que je l'ai fait souvent aux États-Unis.

[1:38:24]

DS: Ah oui oui, bien sûr, c'était une question que je voulais vous demander, ou poser, c'était comment est-ce que vous introduisez les ondes au public?

JL: Je parle du, des instruments, euh, traditionnels comme le violon, je compare la touche d'intensité à l'archet, le clavier ou le jeu à la bague au mouvement sur le, sur la touche du violon, sur les cordes du violon, euh, ou encore si je suis avec des instrumentistes à vent, c'est moins clair parce que le souffle c'est moins évident, enfin moins, que l'archet, je dis aussi que le souffle c'est la touche d'intensité et le clavier c'est les doigts. C'est la principale chose, tout le reste découle naturellement de ça.

DS: Et comment est-ce que vous, euh, l'appellez cet instrument?

JL: Ça c'est assez embêtant parce que je sais plus, je sais pas, j'appelais ça comme avant [?] je vais dire ondes Martenot. [accent américain] I will talk about Ondes Martenot. Ondes literally is waves, Martenot is the name of the inventor. Ah! [rire]

DS: Ok, euh, certaines personnes l'appelle un synthétiseur et...

JL: Un ancêtre du synthétiseur, an ancestor of the synthesiser, faux! C'est un cousin précoce du synthétiseur, c'est le cousin.

DS: Oui, pourquoi est-ce que c'est différent parce que c'est, les ondes "synthésent" les deux oscillateurs et il y a beaucoup de timbres donc, où est-ce que c'est différent?

JL: La différence est probablement dans l'aspect, l'espèce de symbiose entre l'électronique et le mécanique, [DS: mm] c'est ça. Il a eu le génie de mettre ces deux choses là ensemble, c'est-à-dire que pour faire un son [semble aller à un instrument]. Je vais pas jouer avec les pédales parce que je ne les connais pas. Alors je leur dit, ben vous voyez, euh, ici, vous entendez rien. Pour que vous entendiez quelque chose, c'est comme si vous jouiez le violon pour entendre quelque chose il faut que l'archet entre en marche, en ligne de compte. Ah oui, mais, attends, on entend rien parce que je l'ai pas branché. [Branche et joue un son] Ça c'est merveilleux, c'est la naissance du son, on part de rien [joue]. Ben voilà c'est un...ça ça me plaît beaucoup, ça sonne beaucoup mieux que le haut-parleur de Suzanne, malheureusement, c'est pour ça qu'elle m'emprunte mon haut-parleur d'ailleurs, parce que elle s'en rend bien compte. [Joue] Mais je sais pas si vous entendriez une différence entre ça et ça. Parce que, c'est difficile de faire [la comparaison] parce que j'ai un seul fil pour brancher.

DS: Quelle est la différence entre les deux?

JL: Ben ça c'est la poudre et ça c'est...

DS: Oui, oui. C'est la première fois que vous essayez le...

JL: Oui, oui, c'est mon premier son là, ça c'est, c'est...c'est ça que j'aime c'est, c'est...on a vraiment la nuance là, la naissance du son. C'est pas simplement pour battre un record, c'est que si j'ai la naissance du son, si je joue fort, ben la différence entre très fort [...dont je parlais [joue] encore, etc, c'est que ça faisait qui a une grande sensibilité quand on joue, même, même quand on joue fort hein, quand on est loin de la naissance du son. Voilà. Ça c'est sûrement très agréable, [joue] et dans le jeu à la bague on a le, on faisait les exercices suivants: [joue] vous savez, c'est un mouvement comme ça pour monter, [joue] mais pas seulement comme ça mais aussi avec un...[joue] et ça crée un irrégularité dans la vitesse qui est elle-même expressive. Et pour descendre je fais le contraire, c'est-à-dire [joue] comme ça [joue] Je peux pas aller très loin par là par ce qu'il y a le clavier mais, il y a ce mouvement là. Alors on travaillait aussi avec Jeanne Loriod [tout en jouant], ou le contraire [joue toujours] puis rien du tout [gammes montante et arpège descendant] Je commence à devenir vieux et des fois je tremblote un peu mais sinon euh, c'est

comme ça, c'est la vie. J'arrive à tricher mais j'enseignais de jouer vraiment comme ça. Mais actuellement je ne peux pas, je me mets à trembler, [DS: ah ouais, ouais] l'effet de la nervosité je ne sais pas [joue gamme ascendante] C'est merveilleux. Je vais avoir beaucoup de plaisir avec cette nouvelle touche, ça je crois.

DS: Oui, oui. [rire]

JL: Oui, oui.

DS: Je peux essayer?

JL: Bien sûr, je vous en prie. [DS s'installe]

DS: C'est la deuxième fois que j'en touche un.

JL: Ah bon, alors il y aura sûrement une troisième fois.

DS: [joue] Ah, c'est merveilleux. [rire]

JL: Oui, je trouve ça aussi.

DS: Donc ça c'est le [1:47:38] bague oui?

JL: Oui.

DS: [joue]

JL: Ah les notes répétées c'est là [rire]

DS: Oui, oui!

JL: Ça vous avez fait du staccato, vous jouez toujours de la flûte traversière?

DS: Hum [JL: non?] non.

JL: Mais vous en avez joué...assez.

DS: Oui, pendant 7 années.

JL: Ah oui tout de même, mais alors vous savez c'est quoi, comment faire le staccato euh,

DS: Oui.

JL: Donc c'est le même principe.

DS: Oui. [joue]

JL: Vous pouvez l'enlever du chemin.

DS: Oui [continue de jouer] Mais c'est, il y a une technique que j'oublie toujours c'est ça et pas ça.

JL: Oui, c'est ça c'est très juste, et le poignet, remettez vous en place, le poignet simplement il faut que...

DS: Ah ouais.

JL: Mais ce que je n'arrive plus à faire moi, mais c'est comme ça que je l'enseignais, comme ça on a plus d'autorité sur la...on la contrôle mieux. [DS: oui et

joue] et puis la note répétée, ça peut être comme ça seulement comme si je la...

DS: Comme ça?

JL: Oui, vous pouvez le faire avec des notes tenues, vous tenez la note, puis hop! Ce que je veux dire c'est que vous pouvez faire euh [joue] [DS: ah ouais] pour articuler, simplement articuler n'est-ce pas. [DS: ah oui] [DS joue] oui c'est ça on a tendance à jouer beaucoup avec le doigt mais il faut pas. Ça vient presque de l'épaule [DS: oui] [joue]. Pour répéter une note j'essaie d'imaginer que je vais faire ce geste là oui revenir mais je le fais pas vraiment, je fais juste ça. Avec tout le bras. [DS joue]

DS: C'est très difficile.

JL: Oui enfin, c'est une des façons, mais c'est quand même une manière c'est, c'est tellement instantané comme réponse que je préfère. Parce que si on fait, on peut faire juste, on peut faire seulement comme ça ou peut faire...vous voyez ça part d'ici [DS joue] oui, voilà, là c'est bon ça! [DS: oui]

DS: Oui c'est à gauche et à droite

JL: Oui carrément, à gauche et à droite mais en même temps, euh, combiné avec d'autres, euh, oblique [DS joue] ouais très bon.

DS: [rire] je peux pas. [Joue]

JL: Il y a une chose que Mme Loriod nous faisait travailler aussi pour le vibrato c'est compter quatre vibrations à la seconde wow wow wow wow ou partir de rien et prendre une certaine largeur puis accélérer, accélérer de plus en plus vite puis de moins en moins vite, puis aussi une certaine vitesse, presque rien, puis peu à peu élargir mais toujours à la même vitesse. C'était des exercices pour travailler le vibrato qui pouvaient-être très, très efficaces.

DS: Oui, ce que je trouvais très intéressant c'est qu'on choisi, hum, son propre vibrato, pour les notes, mais c'est...je n'ai pas entendu beaucoup de différences pour la vitesse de vibrato, c'est presque, je ne veux pas dire toujours, mais le vibrato, qui est très reconnaissable de la voix [JL: oui] pour les ondes [JL: oui] c'est un choix, c'est pas...l'instrument ne demande pas c'est c'est.

JL: Non, on peut avoir un vibrato très sobre mais aussi un vibrato très opéra si on veut, et euh, c'est ça, mais aussi il faut pas considérer le vibrato comme une chose, euh, j'ai un vibrato, c'est mon vibrato, et puis foutez moi la paix avec, non il y a un vibrato qui va convenir à un moment musical et qui conviendra moins à un autre moment musical et ainsi de suite.

DS: Comment est-ce que vous choisissez le vibrato qui est le plus...

JL: Ben une fois que j'ai fait tous les exercices que je vous ai dit, j'essaie de pas trop y penser. Evidemment, si je joue quelque chose de très calme il faudrait pas que ce soit [chante un vibrato exagéré] il faudrait que ce soit un peu plus tranquille [chante la même mélodie sans vibrato] voilà. L'oraison de Messiaen, les premières notes.

DS: Mm, oui. [Joue]

JL: Bon alors, oui nous sommes au clavier

DS: Oui, aha! Oui oui. [Joue]

JL: Mme Loriod nous disait, mettez votre main sur votre genoux puis gardez la en empreinte. [DS: ah oui oui], euh, ça c'était pour la main gauche mais c'est faisable pour la main droite aussi, c'est-à-dire avec les doigts...oui. Voilà et plutôt vers le premier tiers, voilà, pour la sensibilité. Ça j'aime bien que les doigts...plus, plus ouverts, les doigts passent par dessous le fil quoi.

DS: Oui.

JL: Peut-être que la bague vous pouvez la rentrer un petit peu plus [DS: plus?] à mi-chemin entre les deux jointures, voilà. C'est plus à l'aise. [DS joue]

DS: J'ai beaucoup d'exercices à faire

JL: Ah oui bien sûr. Mais c'est des exercices qui peuvent faire beaucoup de bien, du point de vue relaxation, il faut quand même une relaxation de base pour jouer de cet instrument.

DS: Oui.

JL: Comme n'importe quel autre, mais euh, cette réponse instantanée exige qu'on dise exactement ce qu'on veut, dans le calme le plus grand.

DS: Ah j'entends.

JL: Hé ben oui! C'est le petit reste malheureusement, il faudra un jour que je lui parle, que je lui dise, c'est très bien mais c'est pas encore tout à fait ça.

DS: Oui c'est vrai, c'est peut-être mieux.

JL: Ben oui parce que, moi c'est ce que je faisais l'été dernier justement quand j'avais voulu faire ça, je, j'étais au clavier, puis je faisais ça comme ça, alors là, on entend plus rien.

DS: Est-ce que cet instrument a la capacité de choisir le claquement?

JL: Oui.

DS: Oui, ah oui, c'est là.

JL: [indistinct 1:58:06]

DS: Ah oui, oh c'est très différent.

JL: Oui. Ah ben oui bien sûr. Mais vous savez que les instruments d'autrefois, d'autrefois il n'y a pas si longtemps que ça, moi quand j'avais créé le concerto de Jacques Hétu en [19]95, c'était avec cet instrument-ci mais il n'y avait que le claquement, si je levais trop tôt ça faisait clac! Comme il y a beaucoup de staccato c'était beaucoup de travail. Mais voilà.

DS: Est-ce que vous avez appris une technique un petit peu plus relaxante quand le claquement a disparu? Parce que c'est...

JL: Ah oui, il y a des choses que j'arrivais pas à faire. Que je faisais en [inaudible 1:59:02] oui par exemple, faire un legato, euh, ça faire un legato j'y arrivais pas. J'ai même fait réécrire un tout petit passage à Jacques Hétu parce que je lui ai dit, ça ça se peut pas!

DS: Oui.

JL: Puis maintenant je pourrais le refaire [indistinct 1:59:17] comme vous aviez fait avant.

DS: Oui c'était une autre euh exemple d'imaginer quelque chose qui ne serait pas possible [JL: oui!] qui n'était pas possible avant.

JL: Oui, tout à fait. Mais je dois dire que ça euh, l'anti-claquement c'est venu dans les années, c'est venu quand ça? Peut-être Thomas Bloch s'en rappellerai mieux que moi. Parce que c'est venu, je pense après la mort de Martenot, il me semble [DS: ah ouais] il me semble, et comme j'ai pas pris tout de suite...j'étais très longtemps sans l'utiliser. C'est quand j'ai eu cet instrument du conservatoire que là j'ai découvert ce que c'était.

DS: Ah oui, oui.

[2:00:19]

JL: D'ailleurs ça peut être un très bon exercice de travailler avec le claquement pour arriver à l'éliminer pour être sûr qu'on est toujours vivant sur la touche, sinon si on enlève son doigt, le son est mort, en partie.

DS: Oui. J'espère que les nouveaux instruments de David Kean vont être bien parce que je m'en achèterai un dès qu'ils sont disponibles. Mais c'est difficile pour moi car il n'y a personne pour m'enseigner, en Angleterre.

JL: Oui...mais il y a quelqu'un, il n'y avait pas Mme euh, attendez, son nom...

DS: Cynthia Millar?

JL: Cynthia Millar, oui.

DS: Oui mais je n'ai pas pu lui contacter parce qu'elle a un management qui n'a pas

répondu et elle habite à Los Angeles pendant...

JL: Ah oui elle habite aux États-Unis, ça fait un peu loin...

DS: Pas tous les années mais pendant quelques mois de l'année. C'est ça ce que je sais mais j'ai pas, euh, dans, peut-être je peux trouver quelqu'un qui peut me donner un contact direct mais...ouais...mais je sais que Jonny Greenwood n'est pas un bon enseignant mais...

JL: Oui, ben, oui, je pense que lui il a tout découvert par instinct, c'est ça c'est...mais je sais pas ce serait peut-être pas nécessairement le meilleur professeur après, pour commencer en tous cas.

DS: Oui.

JL: Il va avoir des idées et tout oui,

DS: Oui il a un style très différent, il joue avec son...[inaudible]

JL: Oui, oui c'est ça. Ben c'est ce qu'il avait dit à Suzanne dans le film de Caroline là, j'ai l'impression de parler à, je sais pas quoi...oui. Mais Cynthia Millar elle est quand même à Londres, elle, où est-ce que elle vit à Londres, savez-vous?

DS: Euh, Brighton, à une heure de...

JL: Une heure de là où vous êtes? [DS:mm] Parce qu'il y a sûrement une période de l'année où vous pourriez prendre des cours avec elle, enfin si, je sais pas si elle en donne mais elle doit en donner sûrement.

DS: Oui, je vais essayer de nouveau. Oui.

JL: C'est ça, mais en effet il faut d'abord avoir un instrument.

DS: Oui, oui. Mais après parler avec Jonny Greenwood et faire plusieurs années de recherches j'en ai besoin parce que le département de musique là à Leeds est très enthousiaste et peut, euh, il y a des étudiants de composition qui pourraient écrire...

JL: Ouais, mais ils pourraient pas eux acheter l'instrument? Parce que moi c'est ce que j'ai fait au Conservatoire de Montréal [DS: oui]. J'ai dit: je peux pas donner de cours tant que le conservatoire n'a pas d'instrument. Alors ils ont acheté un instrument.

DS: Oui.

JL: Puis après un deuxième, puis après un troisième.

DS: Pour le moment, c'est un temps difficile, mais peut-être avec les nouveaux instruments qui sont pas trop chers, c'est peut-être possible. Il y a souvent un problème, euh, le climat c'est trop, euh, capitaliste? Oui c'est un marché et on doit toujours dire pourquoi il vaut la peine, pourquoi...



JL: Est-ce que c'est rentable?

DS: Oui, oui. [JL: oui bien sûr] et pur un instrument comme ça c'est difficile à dire qui va...

JL: Combien ça va rapporter à l'institution.

DS: Oui oui,

JL: C'est le manager man...managerions qui domine tout à ce moment là

DS: Oui, oui

JL: C'est comme ça que le conservatoire de Montréal en a cessé, un jour on m'a dit, oh il y a assez de monde qui joue les ondes Martenot en ce moment, ça va suffire.

DS: Oui, donc vous n'avez pas de réponse à tout ça?

JL: Ma réponse c'est qu'il faut changer de système, c'est tout. Moi, c'est monsieur, euh, je sais pas si vous avez entendu parler, Monsieur...Piketty, Piquetil...Piketty, il vient d'écrire un livre intitulé Le capitalisme au XXème siècle, il paraît qu'il a fait un malheur aux États-Unis et partout dans le monde, c'est un...on dit c'est le nouveau Karl Marx.

DS: Oui.

JL: Mais de ça qu'on va avoir besoin un jour, parce qu'on ne peut pas...il y a des valeurs qui ne sont pas des valeurs marchandes et malheureusement il ne faut pas les perdre non plus. [Inaudible]

DS: C'est pas soutenable? On ne peut pas soutenir ce modèle.

JL: Non je crois pas, c'est insoutenable, [DS: oui, hum] et c'est comme ça partout dans le monde, hein, c'est ça le problème, c'est pas juste...

DS: Oui, oui, on a vu ce modèle et on a dit oui c'est le futur et tout le monde doit faire ça...

JL: Oui et tout doit s'organiser tout seul. En ce moment on a, le conservatoire de Montréal nous dit que peut-être on pourrait ré-installer, ré-instaurer les ondes Martenot, mais, et alors ils nous ont demandé ce petit évènement qu'on va faire fin janvier, début février 2015 pour essayer de, d'attirer les gens. Mais je suis sûr que quand ils vont avoir le nez sur la colonne de chiffres, ils vont dire, ah oui mais [DS: ça ne vends pas], c'est pas rentable. [DS: oui] et même des gens très intentionnés mais le système est tellement coercitif que on peut pas faire autrement. Alors c'est ça, mais moi j'ai marché, j'ai fait les marches étudiantes en 2012, vous en avez peut-être entendu parler, il y eu des, une révolte étudiante ici au Québec, pendant tout le printemps 2012 et moi j'ai, je mettais petit carré rouge qui symbolisait ma demande

de la gratuité scolaire. On a pas d'argent, on n'a pas d'argent, on n'a pas...mais vous avez pas d'argent parce que vous allez pas le prendre où il est.

DS: Oui.

[2:09:16]

JL: Si vous faisiez payer les multinationales et tous les gens qui vont cacher l'argent dans les paradis fiscaux etc, ça irait mieux. [DS: oui] ben, oui. Si on permet à quelqu'un d'étudier la médecine gratuitement, quand plus tard il sera un médecin reconnu il paiera des impôts en conséquence, et voilà, c'est comme ça qu'il remboursera, mais on a pas ça dans nos têtes en ce moment.

DS: Oui.

JL: C'est bien dommage mais c'est comme ça.

DS: Oui, c'est dommage oui. Et peut-être...

JL: C'est pour ça que moi j'étais tellement, je trouvais très sympathique les mouvements de...indignez vous, mondial, vous vous souvenez de Indignez vous? Comprenez vous ce que je dis? Ça a commencé à Athènes et puis à Wall Street

DS: Ah oui, oui, les 99% et...

JL: Oui, c'est ça, contre 1%, voilà c'est ça. Je me rappelle plus mais parce qu'il y avait un nommé...je crois que c'était Stéphane Hessel qui a écrit un tout petit livre qui faisait 19 pages: Indignez vous! Euh, comprenez vous le mot, indigner, s'indigner?

DS: Non.

JL: Euh, [va chercher un dictionnaire?] attendez, on va trouver. Parce que c'est pas révolte, révoltez vous, mais c'est pas loin, c'est la même famille [...] to become indignant. Vous voyez ce je veux dire? [DS: oui] Donc il a écrit ce petit livre, Indignez vous!, et ça a été une bombe partout dans le monde on a essayé de s'indigner, ça il y a eu quelque chose comme ça à Montréal mais directement lié à la hausse des frais de scolarité. Mais ils ne comprenaient pas, il ne comprennent pas. C'est ce que j'appelle la bulle capitaliste, les gens sont enfermés la dedans et ils font tout leur raisonnement à l'intérieur et ne veulent pas voir à côté.

DS: Oui, oui et les arts souffrent...

JL: Ben les arts c'est la première chose qui tombe, évidemment, c'est inutile ça c'est pas, c'est ce qu'il y a de moins rentable, enfin. C'est vrai, c'est faux. C'est faux parce que l'art peut-être aussi rentable jusqu'à un certain point, et si toutes les valeurs sont dans la rentabilité ça peut pas aller.

DS: Oui, c'est vrai.

JL: À mon avis.

DS: Oui.

JL: Ça enregistre toujours?

DS: Ah oui je pense [rire] oui mais je vais pas tout...

JL: Oui mais tout ce que je viens de dire vous pouvez le dire à n'importe qui là, à tout le monde!

DS: Oui...euh j'ai seulement quelques questions de plus

JL: Bien-sûr, oui.

DS: Mais c'est surtout sur les, je ne suis pas, je ne connais pas beaucoup de répertoire, pas encore mais je suis en train de l'étudier, hum, je suis vraiment intéressée au rôle des ondes, euh, des timbres différents, et de comment on joue dans des pièces différentes [JL: oui, oui] et hum, je crois que vous en savez beaucoup, enseignant et composant un petit peu, hum, j'ai entendu beaucoup de pièces différentes qui certaines fois ont les ondes comme première voix, mélodique ou pas et certaines autres pièces font le background, un petit peu. Est-ce que vous pensez que le répertoire présente toutes les possibilités des ondes?

JL: Bon, ça c'est une très bonne question parce que c'est la question que tout le monde pose toujours, mais est-ce que vous connaissez un seul instrument dont une seule donne toutes les possibilités? C'est impossible. [DS: oui] Donc, euh, peut-être que si on réunit un bon nombre d'œuvres on va avoir toutes les possibilités. Mais dans une seule œuvre on a un besoin de quelque chose, d'un timbre, de timbres; il faut dire aussi les ondes Martenot, il y a des timbres mais c'est surtout un timbre de base qui se colore différemment selon les moments musicaux, selon les caractères, mais c'est sûr que si vous voulez une attaque agressive vous ne pouvez pas faire ça simplement avec le haut, ça vous dit quelque chose, 'O'?

DS: Oui, O, ondes.

JL: Simplement le O, le timbre ondes c'est doux, ça peut pas être dur et agressif comme si on mettait le gros G. Donc euh, ça dépend aussi beaucoup du caractère de la pièce que nous jouons, mais c'est comme ça que je vois le timbre des ondes Martenot parce que ça n'est pas comme pour le synthétiseur, ou l'orgue, c'est-à-dire que c'est un, comment dire, si vous jouez de la flûte ben il y a des moments où vous pouvez avoir des sons plus timbrés qu'à d'autres moments, aussi des sons plus feutrés, plus doux, etc. C'est un peu dans ce sens là que je vois le timbre des ondes

Martenot, pour moi. Dire, ah ben il a pas utilisé toutes les possibilités de l'instrument. Ben heureusement, parce que on y serait encore l'année prochaine.

DS: Oui, oui. Mais c'est intéressant pour moi parce qu'il y a des, hum, des instruments acoustiques comme le violon, comme la clarinette, et dans l'histoire de la musique, il y a des connotations avec les timbres différents et il y a des lieux où la clarinette a des connotations très importantes pour la pièce et, euh, il fait, euh, se souvenir de quelque chose ou ça symbolise quelque chose, et les ondes Martenot ont beaucoup de timbres différents, est-ce que vous pensez qu'on a besoin de beaucoup de temps pour attacher beaucoup de connotations ou une connotation spéciale aux ondes?

[2:18:17]

JL: Moi ce que je dis et ce que j'ai souvent dit aux compositeurs, c'est mon point de vue hein, attention parce que peut-être qu'Estelle Lemire ne vous dirait pas la même chose, mais j'ai toujours dit aux compositeurs, j'ai dit écrivez ce que vous voulez, comme vous voulez, mettez le caractère que vous voulez obtenir et ensuite nous discuterons ensemble des timbres [DS: aah, oui] parce que, d'abord d'un instrument à l'autre il peut y avoir déjà des différences, et c'est comme ça que je vois les choses. [DS: oui, c'est très intéressant] moi je mets les timbres après, c'est comme la couleur qu'on met sur une idée. Et, euh...

DS: Donc les connotations sont en premier et puis on donne le timbre...

JL: tout d'abord le caractère voulu, forte, crescendo, sforzando, etc. Alors on verra ce qu'on peut faire avec ça, selon aussi la nuance. Il y a des nuances qu'on ne peut pas faire avec un timbre trop feutré, avec un timbre, euh, qui n'a pas d'harmoniques ou presque pas. Il faut des fois beaucoup d'harmoniques pour faire un timbre très fort. Alors, euh, ben voilà.

DS: Oui, c'est vrai. C'est très intéressant. C'est aussi intéressant que vous avez dit que l'O, le timbre onde c'est la base. Parce que c'est peut-être pourquoi ce timbre est si lié au nom des ondes Martenot, on dit ondes Martenot et on entend seulement ce timbre très mélodique et très doux.

JL: Tout à fait oui. Parce que tous les timbres, parce que même je peux prendre le timbre N, il y a...ça n'ira pas avec n'importe quoi. [Joue] mais vous reconnaissez quand même le son des ondes Martenot, je crois, il me semble. Mais c'est certain qu'il y a un certain genre [joue en modifiant la réverbération et l'intensité] il y a un caractère qu'on peut avoir avec ça qu'on aurait pas eu avec: [joue un autre son] ben

c'est pas pareil, c'est pas la même chose. [DS: oui] Donc c'est ça, parce que moi ça a été mon attitude, ma relation avec les compositeurs, j'ai dit, fait ce que tu as envie de faire, et puis j'ai des timbres, euh, je les trouverai moi pour exprimer ce que tu me demandes, ce qui n'empêche pas de chercher des timbres avec le compositeur et puis: non, c'est pas ça que veux, non c'est pas, ah oui ça oui c'est presque, ah ça vient là, ça c'est bien. [DS: oui] alors moi je sais, ce que j'ai fait je l'ai écrit, mais lui demander de prévoir tout ça...c'est pas comme de l'orgue, puis peut-être même à l'orgue on ne peut pas décider non plus à l'avance, ça dépend de quel orgue on utilise etc.

DS: Oui.

JL: Voilà.

DS: J'ai une autre question que je demande à tout le monde et c'est quel features, hum, font les ondes? Quel est le...

JL: Feature, c'est drôle parce que feature est un mot très très courant puis je sais pas pourquoi il me sort de la tête tout le temps. [He looks in the dictionary] il y a des mots comme ça que j'arrive pas à me mettre dans la tête. Ah ouais, caractéristiques?

DS: Oui, donc quelles sont les caractéristiques de base qui font les ondes Martenot. On peut avoir beaucoup de différents d'instruments acoustiques qui s'approchent mais qu'en est-il des ondes.

JL: Ben c'est ça c'est le son électronique sensible. [DS: le son...] Le son électronique sensible. [DS: oui] Pour moi, c'est ça. [DS: donc euh...] Il peut arriver qu'on entende un son, Caroline Martel des fois elle nous écrit elle dit, écoutez, écoutez ça, est-ce qu'il y a les ondes là dedans? Des fois c'est pas, on est pas sûr parce que tout dépend comment c'est utilisé, si c'est utilisé de façon plate ça peut-être n'importe quoi. Mais euh, pour moi, la caractéristique de base des ondes Martenot c'est l'électronique liée à la sensibilité. [DS: ah oui] Sensualité même.

DS: Oui, oui, mais quand on prend un synthétiseur qui peut ajouter un peu de sensibilité, est-ce que c'est ondes Martenot, ou...?

JL: Ben je ne sais pas si vous avez un synthétiseur qui peut être aussi sensible qu'une ondes Martenot, ben...ben, je...j'ai rien contre, mais euh, pour moi c'est la caractéristique. Alors si quelqu'un vous dit, avec mon synthétiseur, je suis aussi sensible qu'une ondes Martenot, il faut le prouver. Par exemple est-ce qu'il peut jouer la partie de la Turangalîla, ou l'oraison de Messiaen ou le...les choses comme ça, le répertoire d'ondes Martenot. C'est qu'on a tellement de difficulté à créer de

nouveaux instruments d'ondes Martenot qui font qu'on va bien reconnaître l'instrument dans le répertoire classique d'ondes Martenot, que je me dis le synthétiseur n'étant pas prévu pour ça, je ne sais pas si on peut y arriver. [DS: oui] Mais un jour monsieur, euh, monsieur qui déjà? Je sais plus qui, un nommé Oskar Sala [DS: oui] qui joue du Trautonium, il m'avait dit, il m'a dit moi vous savez euh, je fais Jeanne d'Arc au bûcher, je fais l'équivalent des ondes Martenot de Jeanne d'Arc au bûcher. Mais j'ai jamais entendu ce que ça donnait alors. Mais le Trautonium comme le Theremin c'est quand même je dirais de la même famille comme sonorité que les ondes Martenot, ça c'est vrai, c'est la famille. Plus que le synthétiseur. [DS: oOui] Comme on dit la flûte, la clarinette, le hautbois sont de la même famille mais...c'est pas la même famille que l'orgue. [DS: oui] voilà.

DS: Et donc la, c'est une sensibilité particulière qui est différente du Theremin et Trautonium, et...donc...

JL: Le Trautonium, je connais pas tellement, euh, je peux pas dire. Mais, euh, d'après ce que j'ai entendu dire. [DS: oui] D'ailleurs ces instruments là n'ont jamais eu un répertoire comparable aux ondes Martenot. C'est que probablement l'onde a pu convaincre plus de gens. Mais euh, qui est-ce qui a écrit pour...Martinu a écrit une œuvre pour quintette à cordes, je crois, et ondes Martenot, ah ben, et euh, synthétiseur, euh, non, décidément je...Theremin, mais qui se joue aussi aux ondes et je pense qu'il a choisi les ondes. Pareil, Varèse avait écrit pour Theremin des œuvres, quand il a entendu les ondes, je pense qu'il a dit: ok, c'est mieux les ondes. Voilà. C'est comme ça. Ça n'enlève pas le caractère, euh, comment dire, amusant, du Theremin. Moi je vois le Theremin, je fait encore une comparaison, un peu comme la flûte à bec par rapport à la flûte traversière. Vous pouvez mettre une flûte à bec entre les mains de n'importe quel débutant et écolier, une flûte traversière c'est un peu plus compliqué, c'est un peu plus difficile de sortir le son. Et le Theremin, ben c'est ça, c'est très simple, puis on vous demande pas d'être parfait, mais c'est tellement magique cet instrument où on touche à rien [DS: oui], ça peut-être très amusant. Mais pour jouer, comme disait Martenot, évidemment il prêchait pour sa paroisse mais d'un point de vue artistique je pense que le Martenot n'a pas été dépassé encore par ces instruments, par ces cousins, par ces gens de la même famille mais, qui n'allaient peut-être pas aussi loin que lui dans la possibilité de contrôler, mais quand même un contrôle qui n'est pas, euh, comment dirais-je une stratification du son. [2:28:35]

DS: Donc, hum, quand vous dites le son sensible est le plus important je pense que vous parlez du, euh, touche d'intensité, le ruban et clavier et pas beaucoup les timbres spécifiques des ondes qui sont dedans? Est-ce que c'est vrai?

JL: C'est-à-dire qu'il y a le timbre de base des ondes Martenot comme je vous disais que l'instrument de Jean-Louis c'était pas tout à fait convaincant de ce point de vue là, c'était pas du tout convaincant. Mais il y a quand même un élément dont on a pas parlé encore c'est la touche, pardon pas la touche mais la pédale de timbre, qui autrefois était une genouillère, hein, quand j'ai commencé les ondes Martenot j'avais une genouillère, on l'avait tous là [indistinct] au genoux et on poussait. Oui? [DS: oui] et ça ça joue sur le timbre, mais pour moi ça fait partie du modelage sonore global, ça peut m'arriver de m'en servir là où on m'a même pas demandé de le faire mais où je trouve que ça aide à faire un diminuendo jusqu'au bout ou à donner une douceur au début et une apparition brusque d'un timbre un peu plus corsé, à ce point de vue là il y a certain modelage du timbre mais la variété des timbres, l'intérieur [?] du timbre n'est peut-être pas pour moi l'intérêt premier des ondes Martenot. Ça en fait partie, il y a des ondistes qui vous diraient le contraire, hein, mais moi c'est un peu ça que je vois. Pour moi c'est un timbre, on peut faire beaucoup de choses avec, on peut le varier multiples [sic].

DS: Je me rappelais une question que je devais...

JL: Poser à Suzanne?

DS: Non poser avant mais, c'est l'instrument transistor est-ce que vous savez qui a commencé à en penser pour remplacer les lampes avec les transistors? Je sais que c'était au début des années [19]70 [JL: [19]70 oui], oui et c'était une question de stabilité bien sûr mais ça a pris quelques années je pense, pour remplacer, oui, est-ce que vous avez parlé à des gens? (2:31:46)

JL: J'ai pas un souvenir précis de qui a suggéré à Martenot d'utiliser un transistor, ça pourrait être Marcel Manière, je peux pas dire à coup sûr parce que, je non, j'ai pas de souvenirs précis à ce sujet. Je ne sais pas si mon livre en parle, je ne m'en rappelle pas. Mais, euh, tout ce que je peux savoir, tout ce que je peux dire c'est que, moi cet instrument là c'est certainement un des premiers transistorisés c'est 74, mais il y en avait eu peut-être avant, avec justement celui que Sylvette Allart avait démontré à Olivier Messiaen. Mais qui a dit à Martenot vous devez le faire, je sais pas.

DS: Mmm, oui.

JL: Je sais même pas...est-ce que j'en parle là du passage des lampes au transistors?...Il y a des choses, y a vraiment des domaines, des aspects de toute l'histoire des ondes Martenot...je sais que Caroline Martel est allée...certainement elle me dépassait complètement. Je le lui ai dit d'ailleurs, j'ai dit moi...ton film commence là où mon livre s'arrête. Mais euh, elle a fait quand même des recherches pour, à toutes sortes de point de vues, peut-être qu'elle aurait une réponse à ce niveau là. Peut-être, je ne sais pas.

DS: Oui, ok.

JL: Vous avez jamais été en contact avec elle? Caroline

DS: Hum, je l'ai rencontrée à la Rochelle. C'était la première du film, en Europe, euh, pas en Europe mais en France, donc on a fait une toute petite conversation, mais je n'avais pas fait trop de recherche à ce moment donc mes questions étaient un peu vagues, mais je suis en train de spécifier un petit peu et...

JL: Parce que moi elle m'a donné des tas de textes d'elle qu'elle me demandait éventuellement de corriger si je voyais des [?] (2:34:01) etc, et puis, euh, oui il y avait des petites choses à corriger mais j'ai appris des choses aussi. Comme par exemple j'ignorais complètement mais il paraît qu'il y a à Tokyo un café qui s'appelle ondes Martenot, le café ondes Martenot.

DS: Oui.

JL: Vous saviez ça?

DS: Euh, j'ai lu sur l'internet.

JL: Ah bon? Je me disais mince, j'en reviens pas et, euh, ben oui, les gens vont là ils jouent, je pense, ils s'amuse à jouer, ou il y a peut-être des concerts des fois, je sais pas, c'est incroyable.

DS: [rire] Oui c'est incroyable.

JL: Et ouais.

DS: Oui. Est-ce que vous avez des questions pour moi?

JL: et bien je vais lire ceci, peut-être que ça me donnera des questions je sais pas, euh...

DS: Oui. Est-ce que vous savez comment je peux aider la communauté des ondistes?

JL: Ben en faisant ce que vous faites surtout. Ce qui est important c'est que ça rayonne, c'est le rayonnement. Je crois que ce que vous faites c'est énorme et j'ai l'impression que vous avez la puce, le virus, j'ai l'impression.

DS: Oui, c'est vrai. Je ne peux pas retourner [rire]



JL: Ouais, ouais. Alors pour moi c'est ça, c'est ça le plus important. C'est sûr que si vous pouviez prendre des cours, puis en jouer puis l'enseigner ce serait idéal.

DS: Oui, oui.

JL: Mais euh. Autrement quoi...faire connaître le résultat de votre recherche.

DS: Oui.

JL: Et puis trouver un traducteur pour ça! [rire]

DS: Oui.

JL: Ce n'est pas un livre, euh, je ne me suis pas borné à l'aspect technique. J'ai voulu vraiment que l'on puisse entrer dans toute l'atmosphère de départ. Et ça, ça peut déranger des gens, il peut y avoir des gens qui disent, ah non c'est trop, euh, vous vous perdez Monsieur!

DS: Oui.

JL: Mais, euh, c'était bien mon idée.

DS: C'est marrant parce que tout le monde que je rencontre et qui a quelque chose à faire avec les ondes Martenot, est très, je ne sais pas comment dire en Français [JL: ouais] parce que c'est si, hum, everyone that I meet, that has something to do with ondes Martenot, is very lyrical about it, is very, there's some profound love for the instrument, it's very...and, and...do you think that it is very specific to the ondes Martenot? Is it because people are very protective of it?

JL: It is specific to something relatively new but which is eternal about music.

DS: Yes.

JL: This is my feeling.

DS: Oui.

JL: Je peux pas dire mieux.

DS: Oui.

JL: C'était presque, ça avait même des côtés sectaires par moment, on pouvait croire presque...vous savez, ça j'en parle aussi, Maurice Martenot a même fait partie d'une secte à une certaine époque pour finalement rejeter complètement, mais oui, oui, il avait un petit côté comme ça. Et c'est comme ça que la musique populaire est restée complètement en dehors, parce que c'était presque un péché... mais, euh, est-ce que ça, peut-être que ça a joué un rôle dans le fait que l'instrument a quand même passé à travers, c'est...mais la musique souvent c'est ça. Peut-être plus la musique classique, peut-être plus. Un côté presque religieux, d'ailleurs presque toute la musique classique occidentale est profondément chrétienne, le Christ est partout,

enfin partout, souvent, souvent on le voit. Mais, euh, comment dire, mais la musique c'était sacré bien avant les religions, bien avant la religion chrétienne. Allez en Afrique, il y a des sons qui, sont des façons de nommer dieu, ou les indiens avec leur Om, c'est une bonne, euh, c'est le son qui désigne Dieu. Enfin ce que nous appelons Dieu, et ainsi de suite. Pour moi c'est quelque chose comme ça, c'est quelque chose comme ça, c'est...

DS: C'est intéressant de voir la société qu'on est dedans perdre beaucoup de la religion mais cet instrument a quelque chose d'autre et on ne peut plus l'appeler quelque chose religieux parce qu'on est parlé plus. Donc euh, c'est intéressant de...

JL: Mais on peut parler de spiritualité peut-être...

DS: Oui, oui. C'est un mot un peu difficile pour quelques personnes mais c'est

JL: Oui, oui, oui. Ce n'est pas un mot à la mode.

DS: Oui.

JL: Ça c'est bien vrai. Mais on peut très bien vivre sans ces mots là et transmettre la chose, la réalité quoi, la réalité musicale. La religion correspondait à quelque chose d'important pour l'être humain. [DS: oui, oui] mais moi j'ai beaucoup aimé le livre d'un nommé, comment il s'appelle, un Français, un philosophe Français...euh...dont le nom ne me revient absolument pas...la spiritualité de l'athéisme.<sup>360</sup> C'était très intéressant. Un athée a une spiritualité. Ok, pas de problème.

DS: Oui. Je pense que...

JL: Vous êtes arrivée au bout des questions?

DS: Oui.

JL: Ben c'est très bien. Moi j'ai beaucoup aimé vos questions

DS: Oh merci.

JL: C'est bien, c'est très bien. Très bonnes questions. Et c'est ça, c'est des questions de quelqu'un qui est déjà très engagée et ça c'est...ça fait plaisir. Ça me fait plaisir moi.

DS: Merci beaucoup.

[end of interview]

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<sup>360</sup> André-Comte Sponville, *L'esprit de l'athéisme* (Paris: Albin Michel, 2006).

## Appendix L: Interview with Caroline Martel

Café, Montreal, 27 May 2014.

CM: -situation like about my film about the Ondes Martenot, I'm asking the journalists to send their texts before, and all the time I had to revise their texts because they're writing so many wrong assumptions about the instrument.

DS: Even with you giving the right information?

CM: Oh, yeah, and going to an extent to really make sure they're not going the easy route. Like, 'oh this is the ancestor of the synthesizer' right? So it's- making this documentary is about discovering the universe of the Ondes Martenot, that's what it is for me, it's not just about the instrument, right? But it's also... you know, be able to communicate it, and educate people, and it's not just my audience, it's like all the journalists, and the curators, the programmers... So I don't think I come across as a maniac or control freak so far, but most of them were like, oh god, ok thank you.

(DS: Yeah) Even though my website has good information they could easily steal from.... Sometimes when they kind of steal or paraphrase there are no issues [laughs] although I'd love them to be more creative. Sometimes they're kind of creative and sometimes they're like, uh. Or they're just repeating like false things that are on the internet, like Star Trek, blah blah blah. (DS: [laughs]) So that's um, anyway. Have you had the chance to meet other Ondes Martenot players?

DS: I'm meeting Geneviève this afternoon. (CM: OK, cool!) Estelle wasn't available, and Marie Bernard lives too far away, it's quite sad. Estelle has replied and said 'send me some questions if you want'. Hopefully before the end of my PhD I'll be able to meet Marie Bernard, and-

CM: They're all like, amazing players. Geneviève, I toured with her a little bit, and I love how she talks about the instrument, does demonstrations. I'm not like an audio snob or anything, I really have issues with her electronic reverb. Especially on her last album, it really has some sound that is more like new age-y. Her compositions are really good, I think she is very talented, but the arrangements are very new age-y. (DS: I saw the cover of the album-) Yeah. But I think that's really where she wants to go. I talked to her about this new age-y-ness. She was playing one or two songs of hers and people really loved them and she had the options of kind of

arrangements that were new age-y and I was like... I think too much for the context, so we talked about this but. So just to tell you she's amazing but that's her thing. A bit new age-y or a bit kind of film music, like musical story (DS: Lyrical...) Yeah. There is definitely an avenue there, I think, an audience there. Marie, to interview her, just to mention in terms of context, she uses the Ondes Martenot to support meditation. (DS: Oh, I didn't know that.) I think there's like... it's not something that's been tapped in so much but the Ondes... I wouldn't say it's simply for health, but for... (DS: Well-being, or...?) Yes. You know, it's like, good for the soul, good for the body.

DS: I see so many Ondes Martenot players who look so young for their age, who look so at ease with themselves and calm and... it's amazing.

CM: Yeah. You have to be 'in touch'. I had like, spectators come to me and they were like, 'I do therapy with the arts, I do therapy with children, and I was so moved by this film, I'm sure the sound of that instrument would be so good for them. How can I access this instrument to soothe and inspire and'...? So [laughs]. I remember when I was doing my BA I had like a really great sound class, because I studied sound in parallel and read things about different frequencies being good for the liver and others for the stomach and whatever. And my prof was like, yeah, it's very esoteric but it makes sense. I bet there's something untapped there for the Ondes Martenot [laughs].

DS: That's really interesting. That's not something that's come out of any of the other interviews so far.

CM: It's not something that's so developed, so. I didn't have to represent it in the film, in a way. We strayed away from any new age-y stuff — my editor is allergic to this — and I was like very [laughs]. But yeah, I think it's part of the spectrum.

DS: About the film, how has the reception been so far?

CM: Very good, I could even say excellent. I am kind of always surprised. Even when it's not... it's not that it wasn't great but when I get some comments, ok well, this person didn't embark on this journey or didn't get it, I'm surprised. And when people are so in love with it and want to see it over- and I'm surprised too. [laughs] I like to have a fresh relationship to the film, where the film is not set in stone. I came to really see the film a bit like- (DS: From an outsider?) Yes, but also like, to see it as really- I just realised that I felt like my approach was a little bit like Maurice Martenot. I worked really hard on this thing and then I let people play it. And then I

cared that they play it as well as possible but it's about them, it's not about the instrument, it's not about me, it's about how the players will play the instrument. And it's how the spectators will ride the film. And every time people talk to me about the film, want it or not, it speaks about themselves. So it's very fascinating for me. I really like it. I'm confident now that the film can be really embraced. I've been like- When we first finished the film, the energy... the distribution agents were not so keen on the film. They were expecting something efficient, electronic music, yeah yeah yeah. And they were like, 'oh the subject is fascinating' but the treatment, they were not so sure. They didn't get the jokes of the film. They weren't embarking on their journey that the film was, because they were expecting something more formulaic. And to be truthful to the subject I would've never done something formulaic. That's also not my interest. So I was not traumatised by this because I had a lot of other collaborators who said like 'no no no, they're just more like bureaucrats, don't worry'. But still I don't take anything for granted. And I like it that way. I kept this approach from my previous film, *Phantom of the Operator*. Have you seen it?

DS: Not yet, I really need to see it.

CM: OK, yeah. You got a copy for Leeds University? (DS: Of the movie?) Yeah, you should check it out. Have it acquired by your university if it's not there. Because I sold it to a few UK universities. Suzanne has a copy at her place. But you should acquire it so I get good reach [laughs]. But the Ondes Martenot in the film — now that I've seen as many films as possible with Ondes Martenot — I can tell you it's quite exceptional, it's Suzanne's voice. There's a kind of voiceover that's there on and off, but then there's the voice of Suzanne on my film. Like, to me she's making the film with me in *Phantom of the Operator*. Also her instrument was more in shape. And yeah, I'm sure you will really appreciate it. We used the instrument for sound effects, like in the texture of the movie, not just for musical score, right? (DS: Yeah) I'm really into using the instrument, so that's another context, like. For all its sonic possibilities, not just musical possibilities. And it's rarely been used like this in soundtracks. There's so much potential, the most famous uses in movies are like, you know, orchestral uses in big orchestras.

DS: Why do you think that is? Why do you think that people look at the instrument and go, oh it's normally- do this, or-

CM: They're not thinking like this. It's more that they're used to composing in such

a way. It'd be nice to have this extra voice, but keeping it as a voice, instead of as a drum, a saxophone, there's so much more... When you want the Ondes Martenot to come through in orchestra music it will most often be very lyrical so that you can hear it through the whole orchestra. (DS: And define it as being the Ondes Martenot) Yeah, yeah. So, embodying some kind of soul or angel or, you know, something more...

DS: Which is very interesting to me, that connotation. (CM: Yeah.) Because, it started out being used like that in the '30s, and '40s, you know, this new futuristic sound that wasn't from this earth. But it's still doing that, even though that connotation is gone, because there's so many electronic sounds. And still there's something about it that's still, maybe not new but contemporary.

CM: Yeah. But it's also speaking of the feminine. It sounds cliché but that's what I've seen in musical scores. Like even in a film like, it's a Brian DePalma film, not very good, something snake, it's some American people in Japan. Like, you can really analyse the function of the Ondes Martenot in the film. And there's an um, there... (DS: You can say it in French if you want) *Enquête*, so (DS: Survey?) No, an *enquête policière*, like Sherlock Holmes. (DS: Detective?) No, they're doing this search... so they're- not an inquiry, but [investigation]. It's about the rape of a beautiful blonde American model, and it's been surveilled, video tape. It's like 1990 so it's like, oh, surveillance, like the new thing. So every time they rerun the tape of the rape, I think on the pool table, every time there is the Ondes Martenot. Of the rape scene of this very sexy blonde woman. It's a weird use. When it's all like quirky and sexual it's the Ondes Martenot. [laughs] But yeah. While the Theremin has most often been used to connote something otherworldly, like aliens coming to town, and blah blah. This feminine, like, irrational thing. So anyway, I really think that there's more to do and I'm sure that will happen in the next 15 years.

DS: Yeah, so what do you see for the future?

CM: Um, I'm an optimist. And um. I see that- well, there's this question about the name of the instrument, right? (DS: Yeah.) I'm sure that, not immediately, but sooner rather than later the name will be the Martenot. And it will not be trademarked anymore. That's what I would see. It will be the sign of the times, a kind of, I wouldn't say maturity, but- (DS: A new phase) yeah. But that to me, the name... That's something I've given some thought, and I would like to give it some more thought. But in terms of something to measure how the future is going for the

Ondes Martenot, I would say that how it's named, if it becomes a bit more standardised, in French and English, that that would be a way to see-

DS: So when I abbreviate it, I usually say the Ondes.

CM: Yeah, but then the Americans are like 'the on-dés', then it gets this Latin connotation, which doesn't really fit. So I think it would make sense that it's called the Martenot. Like, not the marte*NOT*, the marteneau - it's kind of difficult.

DS: What do you think that the new instrument that's being created by David Kean and Markus Reich is going to do for the name as well, because that's not going to be called the Martenot, it's going to be called the Ondéa.

CM: Yeah. It would make sense that it keeps the name the Ondéa. It would be nice also to pay tribute to the work of Mr Oliva. Very curious to see how this will go. I could see like maybe two things like... [laughs] I think there will be a bit of an inevitable bastardisation because... because people who don't know the instrument extensively see it as the ancestor of the synthesizer. And I think we cannot emphasize it enough. They take it for granted that you just have the instrument, and you know how to play the piano, you know how to play the keyboard, so [in voice] 'that's cool it's vintage, yeah'. You have lots of money, you can buy one from France, you wait two years and then you can play. Cool. But I have had to also educate people who write me to say 'hey, I'm getting a Dierstein Ondes, I know he's in your film', la la la. And I'm like, 'fantastic, that's half of the battle. Now how will you learn to play it?' So that's the critical question. And then I say 'well, there are some Ondes Martenot players in Montréal, one in particular who has been giving lessons, so you might be interested in getting in touch with her'. And they've all been like, 'yeah yeah'. That's what Jean-Louis Martenot has always feared, since he was young that's what he's always seen. He's seen the instrument being played badly and then the instrument getting this bad rep. Because it sounds like, cheesy, with the [makes noise] or it's not so different from the Theremin, or. So lack of fine expressivity was giving a bad reputation to the instrument. Maybe with time passing there will be very bad players but people will know that this is not the instrument, it's the player. That would be my hope. So yes. It's really- it's not about the sound, it's about the expressivity. That's the point the instrument is trying to make. I don't think we're nailing it in people's head. I had like a discussion with Dave Madden a few years ago, and I haven't read the piece he published like a year ago or something, and I like Dave, but I was so shocked by my conversation with him.

Because he was just talking about the sound and not thinking about the expressivity. So I had issues of him as an academic who said 'I have played with that Martenot player, I know' so he felt like he really knew the subject, and I felt as a documentary filmmaker, I hung out with these people like 5 years. Like, who's the expert here? (DS: OK) And I don't know if I was back at school doing a PhD but I felt like, I had issues of appropriation of academics of subjects, you know? And he was missing the point of the instrument. Talking about the electronic sound, yes, but it's really about the human aspect. But there are so many ways to approach the instrument. But, and this is my approach, it's all about revealing, it's not something essentialist, but the spirit of the object to me is what is important to reveal. So that's why it takes time. (DS: Yeah.) Anyway, so where was I... Yes, about the bastardisation, so like- how people can take things at face value. So, I trust that some new models will be pretty faithful, like sonic-wise. I really find it fascinating, I could keep on filming. You know, being with these people. Nao, the Japanese guy, was trying to do a lamp, a tube Martenot, and besides Dierstein there's also like a duo in France, they're doing like a tube-amplified digital one. (DS: The digital one, by Jaccard and-) Yeah. So it's really great. I think that the Ondes Martenot is an object of constant research and development, of fascination...

DS: To me that is where it differs from the Theremin, because it was made, and remade, but never- the Ondes Martenot had been in development for almost a hundred years.

CM: Yeah, uhuh, oh yeah. So in terms of the future, I see that there's really a future in new *diffuseurs*. Using new materials not just to amplify a sound but to colour the sound. So that's really exciting. I think people really should- I have like issues with people seeing it as vintage. That's missing the point. I see it as an open instrument. That's what also really paradoxical, it's really set on some levels because the Ondes players are used to some parameters of the instrument that are a bit like quirky and not electronically standard. So the makers really tried to respect the instrument as it's always been. But at the same time there's like all these new things that people can try. Of course, like, that's what Dierstein is doing, connecting (DS: MIDI and CV output) Yeah. That's also kind of the future. It's kind of limitless. So I'm optimistic, but I think that it's kind of realistic to think that. And I just wish that this knowledge about the instrument be carried with the new models of the instrument.

DS: So you argue that some workshops are needed by people who know more about



it and that it's not just in a completely isolated place?

CM: It's not about like, a technical instruction manual.

DS: This is an area where some people go one way and other people go another way. I've heard people who said, I love to see people experiment on this without any prior knowledge, people who are maybe looking for something more sonically interesting, and I'd love for the old traditions to keep continuing as well so that there's both avenues.

CM: Hm. I think it's a point of view. Like, I believe that the more you know about the past, the more you can genuinely innovate. But the makers really would like the instrument to be freed, like, I'm going to put it very roughly, from the traditional Ondes Martenot players. They feel it's kind of set in stone by the players.

DS: And the repertoire as well, probably.

CM: Oh yeah. The repertoire, man. Wow. There is so much to do to open it, expand it, it's very exciting, right?

DS: Absolutely. What I'd like to do is buy one of the new Ondéas, try to convince the university to get one as well, and start some workshops. Things like that. It'll take me some time to learn how to play it to a decent level, but I'd love to give workshops on the instruments, on the background, on the sonic possibilities. And first see what they do without any prior knowledge, and then fill them in on what it's about.

CM: I think that's a great approach. That's what Owen would like to do. It's kind of interesting that the conservatoires in Paris and Montréal — I'm just speaking about the ones that I know — like here the instrument has stopped. And I have to say that I met with the head of the CNSMP in maybe 2008, and he was really telling me that every year they were questioning if they would keep the Ondes Martenot. Now I trust that they don't question it anymore, now that there's more initiatives, and the film... It hasn't been played much yet in France, but that is the goal, that institutions not question the legitimacy and the importance of the instrument. But what's interesting is that in university departments, like in music or communication or technologies, that the instrument is like, researchers like and also practitioners, are seeing so much importance and embracing it and bringing it into institutions to be alive and be shared with younger students. (DS: Yeah) So this is also straying away from the traditional conservatoires, repertoire, blah blah. So it's kind of a good thing too.

DS: As long as the spirit keeps being passed on?

CM: Yes, yes yes. So I think that the film in that regard can really contribute to bridging links and like, Nao, the Japanese um, that's kind of an expression in Japanese that he says in his formidable accent: 'I want to communicate with the future'. It's a literal translation from a Japanese expression. That's what I want to do, too.

DS: Something I like to ask everyone: when you talk about the Ondes Martenot, so someone who doesn't know anything about it, how would you define it?

CM: Depends who the person is. (DS: OK.) In a general way I would say one of the earlier electronic musical instruments. It's not about electronic music. And I sometimes say that it's the most expressive of electronic musical instruments. It's a traditional instrument that uses electricity that's been around since the 1920s. I often ask, do you know the Theremin? And I'm surprised, it's like most people don't know the Theremin, but some people will say, 'oh yeah yeah I know [mimics sound]'. Sometimes for people who know the Theremin, it's like, 'what's the difference?' and I'm like... Jean Laurendeau has issues that I say that, but it's kind of my joke. You know, Messiaen once tried to count the amount of timbres the Ondes Martenot can make, and he got up to 10.000. So when someone asked him what the difference was between the Martenot and the Theremin, he'd say 9.999 timbres. And you could also contest, but I coined the idea that it is the Stradivarius of the 20<sup>th</sup> century, or 21<sup>st</sup> century. I really think it is. Because people really are fascinated by the instrument, and try to analyse it. All the research done about the instrument, how it's made... like, I am scientist being fascinated by the instrument, and I'm a music researcher, so. I also come from- my interest is the cultural history of technology, so I see it as a sonic and musical technology, but it's an object of human investment. (DS: Right) That's what I find amazing. That's why sometimes people ask me, ok, why did you make a film about this instrument, and it's because I think this is a marvelous subject. It's not about the instrument, it's about the quest for the instrument.

DS: It tells the history of lots of people-

CM: Yeah. It speaks about human beings, so.

DS: I think you sort of already answered it, but just to get a quote down: what would you say are the most important features of the Ondes Martenot without which the instrument wouldn't be an Ondes Martenot anymore?

CM: Mm. Many things. (DS: OK.) All the elements that allow for high expressivity. The touch, the vibrating keyboard. The ring. Also the *diffuseurs*. So, yeah. To me, when it's not an analogue *diffuseur*, it's just not the same. And again, I'm really not a music snob. When I was actually making the film — I feel the film is still making itself, like — but when I was making the film I would not judge any music, any player, any instrument. I would all take it in. But now that it's done, and I really just react to it, I would say that when it's not the right *diffuseur*, that's very judgmental that it's right or wrong, but it's not exactly the instrument. It's terrible to say that, but I would say it.

DS: You also said that you'd be interested to see new *diffuseurs*. (CM: M-hm) So is it just the fact that they have to be analogue and they have to add something-

CM: Yeah. And when you hear some recordings with two - wow. I've never been - I'm kind of anti like, [sarcastic] 'oh wow, two', but. Wow. Just like, how you respond to some sounds - wow, it's so beautiful.

DS: Suzanne contributed a lot to both movies' scores, or sound design. (CM: Yes) Was that her own transistor instrument or a tube instrument, or-

CM: Yeah, she's got the, yeah, transistor instrument (DS: But with the analogue *diffuseurs*) Yeah. And I have to say something that is against my principles in principle, but in practice not: we added some kind of 'tube' filter on her instrument in the film. So what you hear is her instrument- and I love that because it's a documentary but it's a movie, so I can do whatever I want, so. The sound of her instrument- I believe it can never be truthful because it's not live anyways. So might as well make it as beautiful as possible. That was my choice. So my sound editor who was also sound engineer and a mixer, and also a university professor, so he's quite intellectual, so it was really amazing to make it. So once he tried this tube filter on Suzanne's instrument, and then I got addicted to it, so we applied it everywhere. He was like, oh come on. I know this is horrible and it's not truthful to Suzanne's instrument, but. And, but it's also when I realized that the sound of her instrument used to be more beautiful. Because I used some recordings from *Phantom of the Operator* in the soundtrack of *Wavemakers*, and I was like, how do we always go back to these recordings? Because we love them, and they were both done in the church across Suzanne's place. (DS: Oh yeah) So the acoustic there is amazing. So it's natural reverberation as opposed to this electronic reverberation. So yeah, so that's something I want to say. I'm not sure if you're going to use this. I just

think this is very important.

DS: So are you saying you are not as excited about the new instruments having ways for MIDI and things like that-

CM: No I'm excited about it. It's still going to have this expressivity, so. That's so fascinating, the instrument as a musical instrument but as a music playing interface, right? So, hm.

DS: That's what I found, yeah. I realized in David Madden's article that he first and foremost talks about the sound. And Owen Chapman a little bit as well, in his paper on the Theremin, the Ondes Martenot and the Hammond. Both discuss the sound before the features. And all the Ondes Martenot players I talk to, they say, this is the Ondes Martenot, the expressivity is the Ondes Martenot.

CM: So that's why I find this is not deep research. It's kind of applying maybe-

DS: But Owen's already come back from that, because he said-

CM: For Owen I think it's different because he hung out more with them and with myself. There are potential problems with academics. And I am one, but you have to know the field before you pretend that you- But it might also be applying some- yeah, this is also my choice of how you approach a subject, whether it's academic purposes or making films, but to be able to reveal the subject in its own terms. I find that this is the challenge of research, this is really more marvelous, but. Yeah, so maybe this vision of talking about the sound is applying another mentality of electronic music to an instrument that is not like, about electronic music.

DS: This is not something that can be discussed very quickly, but I'm currently looking for cues of moments where the Ondes Martenot has been reimaged or things have been added or taken away, where there was an influence of people. I know that Gilles Tremblay had a request to add some noise (CM: The white noise), do you know any others?

CM: Did you talk about this with Jean? (DS: A little bit, he said 'Caroline will know' [laughs])

CM: Yeah, um. I know that the Ravel- somewhere they say, Ravel, blah blah, but apparently it's not accurate. I know this was some kind of Ondes Martenot rumour. I know the Ravel thing was not so accurate. Otherwise... um. Jean-Louis Martenot could tell you. I know it's super important, but because I was then just making the film I didn't focus on this.

DS: Do you know anything about the moment where they switched to transistors?

Because I know that was outsourced to a company that made circuits, it was a couple of years after transistors...

CM: Jean-Louis would really be able to tell you. Have you met him, or-

DS: Briefly. I did have a conversation with him in 2012, when I picked up two books by Jean Laurendeau (CM: Yeah) but completely early stages of my research then, so.

CM: Yeah. I go to see him in a month, also to do recordings, because I really want to write about the Ondes Martenot, and do something about the Ondes Martenot in the future. I was debating for a long time whether to do my PhD like while I was at it just do my PhD on the Ondes Martenot, also using actor theory, but to do it more about the Martenot oeuvre in general. But yeah, I've always changed my mind, and you can't do everything, it's so crazy. (DS: And you're teaching in Virginia?) I was teaching in West Virginia for one semester as a global visiting scholar, which was a really great experience. But you can only do so much. But the thing is, I want to interview Mr Martenot more, he's old. So in my rushes I have lots of interviews with him, so I have my primary source, I have material I will analyse later. But at the same time, those were questions asked for a movie, so different than when you do it for research purposes. And now that I know the subject more intimately, there's more questions that arise. Now that the film is out there, I get different questions, and I would like to keep on discovering things, so. (DS: It never ends) [laughs] It never ends. That's why if we keep this spirit of wanting to contribute, that's- Owen has been really great with that. This spirit of exchange and generosity, humility, nothing like 'I'm an expert overnight'. And even someone like Mr Martenot, and Jonny [Greenwood] always keep that approach of not feeling they know everything. My editor, too. I love this approach. I think it's- not just because it's more humble, but it's when you're open to see things differently and keep discovering.

DS: Do you think the instrument attracts people like that?

CM: I would say attracted. In the future it will be people who are like, 'this is so cool' and then they will get into this whole like... (DS: Falling in love) Get caught up and... yeah.

DS: Everyone I've talked to so far who knows things about the Ondes Martenot is completely in love, cannot say a bad word about it. [laughs] Like 'I want to know more, I want to devote a good part of my life-'

CM: Yeah. There's this really lovely guy and woman in New York City, Tim and

Suzanne, they learn with Geneviève. They both have a Dierstein Ondes and they're so great, I love their attitude. They're musicians who studied at a conservatoire. Yeah, there's hope. In San Francisco there's lots of interest too, so yeah. I'm gonna do things in San Francisco.

CM: So have you met Jonny?

DS: I have, yes, briefly after a concert. I was a bit awkward and didn't really say anything about the concert itself, just that I was doing a PhD on the Ondes Martenot and whether he'd like to be a participant. So he gave me the address of his management. (CM: Yeah?) But when I emailed, they proposed an email interview, and that wasn't really very useful-

CM: Yeah, yeah, they do that. He doesn't like to be-

DS: I did also see him the other weekend, actually, in London. He was doing a concert with the Indian-Israeli Rajasthan (CM: Oh no, you were there! Oh wow!) It was amazing. But the Ondes Martenot wasn't used very much. (CM: No?) No, it was very sort of background. Did you read the article he wrote to promote the concert?

CM: No. I read about the concert three weeks ago and I posted it on the Facebook page of the film. Because I thought, Indian music and the Ondes Martenot, it's-

DS: Yeah. It wasn't used very much and he did also play guitar, but.

CM: But he played himself? That's a good thing.

DS: So in the article he said the Ondes Martenot would really take a backseat, and it did.

CM: Did you have a sense he was shy? To play it well enough?

DS: Um, no. I don't think it was shyness. It was more sort of, I'm this white English dude and I'm inviting all these Indian-Israeli musicians here and I'm going to let them do their thing. I'm going to contribute a little bit, because that's part of the concept, but it was more about 'how can my Western background contribute to all these different modes (CM: Yeah), ragas and so on'.

CM: He is really in a study mode all the time. (DS: Yeah, always.) You see, that's his attitude.

DS: And *There Will Be Blood* was played the night after (CM: Wow) but he wasn't- (CM: He wasn't at the forefront at all) no, he was behind the orchestra. (CM: [laughs] Ohh.)

DS: I'll send you the article. Very interesting. Very humble.

CM: Thank you. So if you have any other questions...

DS: Oh, I have so many. This was really all about like, how do different people see the instrument, and see the future of the instrument. And what do they want from what's happening right now. And it's been- not everyone's the same. Of course everyone loves the instrument and wants it to continue, but there are different views, and I think that's interesting.

CM: Yeah, I find that especially someone like Jean Landry has a very different view. Very technically realistic, not poetic. Sometimes I find that's why- he was interviewed in a big paper when the film came out. But he would say things that were very dated. He was obviously not in touch with all the development. Even Owen, I was surprised. He felt like there was not so much future. He didn't come across as seeing the rich net of initiatives. Seeing it as this fragile thing that is on the verge of being vintage.

DS: Oh, that's different from what I learned yesterday.

CM: Yeah, I'm sure he's changed, like in the last year and a half, because we've been reconnecting and he's very enthusiastic with the David Kean initiative. Maybe the last thing I would say is... I could share with you some emails that I've written in English but there's one thing. I'll say two brief things and then I'll get to the- There's like one musician in the States who plays the Theremin, who owns an Ondes Martenot, who owns all, like, even the glass harmonica and old instruments, and he improvises on silent movies. So he's this guy who accompanies films. And he started doing a promotion, saying 'hey, there's this Ondes Martenot film that came out, I could tour with it with the Theremin and my Ondes Martenot and I could demo things'. But he obviously had not seen the film and didn't know the Ondes Martenot very well. He filmed Geneviève Grenier, stayed with her like, 5 hours, and left and is an Ondes Martenot player. So I was like, wow. And he was kind of using the film to promote tours, to pitch to programmers in different like, theaters. And I really had big issues- And this is a bit off tangent, but this really provoked me in reacting. And I'm really not that defensive, but I was like, fuck, we've done all this work to reveal the instrument and then someone would want to demonstrate it and not play well, that's for sure, and I thought that was interesting that I would react that way. And because it's like about revealing the instrument, and, not protecting it, but- and it's about the instrument, not me or my film, it's like, whoa. And there's all these Ondes players that don't live off being an Ondes Martenot player, they should

be able to accompany the film, and you know, represent, and earn a bit of living from that. So that's just one anecdote. The other thing I would say, is about- I was a bit skeptical of the David Kean initiative because I had issues with Mr Oliva and Levine around him. And again, when I was making the film, I was not judging, but now that I've grown much older I know oh, these people- Marie has been waiting for her instrument since 2007. But the thing I want to say — and I really don't want to come across against these people — but there are so many initiatives now, and in principle it's great, but in practice... since each maker has, they're all sharing the market, they can less live off this. So can their initiatives survive if there is not a demand? That's the question. So in principle it's great because it's multiplied the different interpretations of what the instrument is. It's great, research wise, wow. And that's where I see- it can become the Martenot, right? And it's really a sign of the times. But at the same time all this research that each put into making the instrument to sell maybe 20 instruments per year... Like I'm sure David Kean has intentions to bring it somewhere else, and that should be very interesting. But yeah.

DS: Do you know who he worked with to get the sound right-

CM: Oh you mean the players? You're asking the right questions. I don't know which players he worked with. But all the makers that are respected are the makers who work very closely with Ondes Martenot players. So all the initiatives that were done without the ondistes failed.

DS: I know that Jean Landry has a lot of faith in getting the sound right, getting the expressivity right. And he knows exactly what the expressivity needs, and. So I'm cautiously optimistic about it. And he said the price had gone down, mostly because of manufacturing technology, and what they know about constructing Mellotrons, and not about losing quality.

CM: Yeah, so that's quite exciting. So let's wait and see. [laughs]

DS: I hope that Dierstein will continue, that there's two versions on the market, like a practising violin and a Stradivarius.

CM: Exactly. You know Nao is a very utopian, he wanted to make something super affordable. I should let him know about the David Kean-

DS: Can you send me some info on Nao?

CM: I think if you just put Martenot plus Nao in Google... or I think it's Asaden.jp... So you see for instance Wakana studied with Takashi Harada, she was



the Ondes Martenot player who was the lady taking care of Jean Laurendeau in Japan. Then there was one player who learned with Takashi Harada who helped Nao. And then you have the *amis des ondes Martenot*, they converged from all regions of Japan to meet me. So you have curious people about the Ondes Martenot, you have the engineer of Korg who was there, and they played on the digital Martenot that Jean-Louis sold them, and they don't sound really good. So they're doing it just for fun, but Takashi Harada is like the master, and you have these ladies, and then other curious people around the country. And some have studied with him but only those ladies are professional. And there is one younger one who studied in Paris with Valerie Hartmann. So there's really hope.

DS: Do you know of any other places?

CM: Oh, I want to meet Cynthia Millar. I'm sure she's a country onto herself, because she worked with Maurice Jarre- I'm not sure, but she worked with Hollywood composers... she's in that range. That's a really important thing to reveal and I wish I could have revealed in the film. She's definitely this other entity, but. I hope I get to meet her next year.

[end of interview]

## Appendix M: Interview with Nadia Ratsimandresy

Conservatoire à Rayonnement Régional de Boulogne-Billancourt, Paris, 13  
September 2017

DS: So thank you for meeting me. I thought it was really interesting to talk to someone who's both an Ondes Martenot player and someone who teaches Ondes Martenot, and especially here because I haven't really met anyone else who's teaching here [Boulogne]. So a little bit about my research, maybe: I have been doing research for several years part-time — so I've been doing other stuff as well — and I've been interested in the evolution of the instrument itself as a technology. And then how other people around it have kind of influenced any changes in the design, in the approach, and how the instrument itself has sort of changed the people around it. So some of the things that I'd like to ask you is sort of, your opinions on the instrument, your relationship to the instrument, some insights into the types of instrument that you play with, if you know anything about the sort of new Ondes Martenots, the Ondes Musicales Dierstein, the Ondéa, all of these things. I'm trying to see what the future of the instrument would be, I'm trying to find out how far along it is, and so I'm interested in a way in the survival of the instrument, because it's had a really difficult sort of career. One question that I tend to ask people is, how would you define your relationship with the instrument in terms of, are you a performer first, are you teach teacher first? Or how do you see that?

NR: I'm a performer first because I had the chance to have met the instrument when I was nine. So that makes my journey very different from other people's. So I had time to develop a technique, develop an approach to the repertoire and develop my own point of view on the instrument itself. Because as a young ondiste I wanted to have my own instrument. So I was directly and completely related to this adventure of, what would be the future of the instrument? Because the future of the instrument is my own future as an artist. So this topic is, really, is the core of my journey. So I'm a performer first. And I was very sensitive to the music written for the instrument itself. I think that's very important, and that's a reason why the instrument might survive or not. It's not just about building the instrument, you can build

anything you want. If there's no goal and no music for it there's no point building it. So it's not just about having performers, it's just having them... I think that the motivation, the incentive to be the instrument... So it's not just about me being an ondiste, this is about me playing some music for the instrument. And then in this way that makes sense. If it's just about me, just about the instrument, there's no connection between them. So for me it's all about the repertoire, it's all about your duty. What a word but, your duty is to really to build the repertoire, to make sure the tradition is respected and continued. You know, it's very important. And also that new music is still composed for the instrument. And when I was young I was lucky enough to be in a conservatoire in this small suburb, Parisian suburb (DS: Which one?) In Évry. The conservatoire still exists, but 30 years ago, 30 years ago it was a small conservatoire and the director was a composer as well. He hired some interesting musical personalities to teach. So that's how the Ondes Martenot came to this small conservatoire. That's for example how this director was the first one to open an electric guitar class in France. (DS: Wow.) So that's the type of an environment... And that's where I grew up musically as well. So I was able to see electric guitar taught, you know, jazz class... And also the director wanted to invite each year one composer to interact with all the students. So that's how when I was young I was able to meet some great composers. Without knowing who they are, you know, I was nine, ten. So they were there, and when I think about it, 'oh I met this person, I was nine or I was ten, he taught me a boogie woogie on my keyboard!' You know, stuff like that. And I guess that influences who I am and the fact that I was very concerned by the repertoire. Now I feel that my main activity being a performer is something that is to continue the repertoire. And I guess, yes, that's the reason why it's so important that you see the instrument as a tool, and you see the musician as a tool to make the music happen. Not the contrary.

DS: That's really interesting. Do you feel that you have a slightly different approach to the Ondes Martenot than for example a violinist would be about their instrument? Or do you think that it's kind of the same?

NR: Well it's kind of the same, really, for me it's kind of the same, it's all about the body, the way you sit down to be able to be centered. It's very important. The balance between your shoulders and having some tension, those same ideas. How to make your instrument a part of your body, an extension of you. And it takes time. You know as any instrument, you can't have it in two years or six months. You can't

invent it. You know, you can't build it by just saying 'I want the connection'. Sorry, it doesn't work this way, you have to build it.

DS: Put the hours in.

NR: Exactly. And I was lucky enough to be able to lead that because I started at 9. So I know for sure, I'm like any other instrumentalist, any violinist, pianist or flautist at this level of the relationship with the instrument.

DS: Do you feel that the Ondes Martenot is... do you know anything about instrument classification? (NR: Yes.) How would you describe the Ondes Martenot?

NR: For me the Ondes Martenot is very close to the cello. Because, first of all Maurice Martenot was a cellist, so maybe you would say 'of course', but I think there is a reason why the Ondes Martenot exists this way. Because he was a cellist. The fact that you can control the dynamics. He found a way with the left hand to control the dynamics or the *phrasé*. So for me it's very related to some other string instruments, and the vibrato, and the tuning. Everything is there because, just my theory, is because he was a cellist.

DS: Could you say it's in a way an electronic cello with other possibilities for timbre?

NR: Yes, of course, I completely agree with that. Because this is a way I feel it, and on my personal journey, I started violin when I was 15. So then I started this instrument because I wanted to feel the classical music also in my body, not just being able to analyse the music and say 'this is Mozart, and a trio'. I wanted to be able to play it, even badly, because I'm not a good violinist. I started at 15, and some of my professors said 'oh you want to be a professional musician? We advise you to play the 2000 years you haven't been able to play', because I was only performing contemporary music. So I said 'oh, ok', so I started to play the violin. So I know for sure that this is the same. Just maybe because it's not the string producing the sound, ok, this electron, the electricity produced in the sound. But at the end of it, it's the same idea.

DS: So you would say, aside from the sound generation, this is an acoustic instrument.

NR: Of course, I really agree on that, and I will defend this point of view. That's the way I present it to my students. Yeah, like, it's acoustic. I mean the electricity is just a means, it's just because it was there, because maybe it was fashion at that time, and

just like, the first electronic instrument. I think it was just the means in the old project, you know. But for me it's an acoustic instrument, and. Definitely it's like an acoustic instrument.

DS: How do young children approach the instrument? Do you find that that's any different?

Do some find it strange that it's an electronic instrument? Do they have, perhaps, different expectations at the start? How does that work? Or do they just accept it as it is?

NR: I think, kids, you know, it's easy. You just say, this is it. They just accept it, they don't discuss it. And I was the same when I was nine, I never said to myself, 'this is an electronic instrument, wow'. No. I mean, when I see the students approaching the instruments, they are just like, 'oh there is a keyboard, why?' They can't even verbalise it consciously because, but they'll say 'why', you know, it's just like, 'ooh, ok, keyboard, we only have keyboard with piano.' But why. And they you'll say 'it's not because you see the keyboard it's going to sound as a keyboard.' (DS: Yeah.) Because it doesn't sound as a keyboard, you see, the keyboard is just wrong. Just for the sound it's good to have keyboard, of course, but for them it's just that 'okay'.

DS: So it's maybe a connotation that gives people the wrong idea sometimes, and makes them think about organ keys or synthesizer keys, or-

NR: Exactly. I think it's, and when they're kids, when they approach the instrument, the first thing they do is, they put the sensibility. They just find, right away, 'ha, I can vibrate. Oh, it's too loud!' And the first thing I say is 'it's your fault, not the instrument', you know what I mean? It's not on-off, it's not, I change the timbre. We see that later, we see the different colours of the sound later. And it's not important at all. But the way you produce a sound is right away. So first thing they want to do, 'I want to have a good sound!' when they arrive, and after one minute they say, 'I don't like the sound!', like, 'this is your fault. So you want to play piano, you have to control it this way.' And then they say, 'ugh!' (DS: It's frustrating.) Yes, but they know they have to learn. And then it's easy. And the rest, you know, the sounds, it sounds like a flute, it sounds like an oboe. It comes later on, naturally. But it's not the first. And then with the ring, you know it's just fun. And then I said 'you can sing a melody and play it,' and they're just like 'what'. And then they realize, 'oh, it's out of tune,' it's because of you. Because it's you.

DS: Exactly. It's like picking up the violin and not knowing what to do-

NR: Exactly. 'That's right, it's your fault, sorry. So you have to practise', and they just say, 'oh' and they get it right away. And usually when they understand that, they understand that very quickly, and then the next lesson next week, it's 'Nadia, [snaps fingers] can we start?'. And I'm like, 'hold on a second'. And then I have to stop them because they need to learn. To read notes, to sit properly, you know, but then they can't wait. Same way like violinists, 'I can't do this sound, it's awful'. Yeah sorry, you need to do a lot of A notes, to play forever-

DS: Do you use the Jeanne Loriod method?

NR: No no no, I think, right away I propose small pieces. Right away. And we start this way. DS: So you've got your own way of teaching.

NR: Yes. Because I think now after all those years we have some pedagogical pieces, small pieces for beginners. So it's easy to just start a piece right away, work on, you know, tuning or the dynamics. So no. I mean, the method of Jeanne Loriod is a good reference. They are good reference books. It's still there for pictures. You can see [gestures around the room] you know, all the pictures here are from the books. So they see it, but then it's also for them nice to say, 'oh, this is my fourth score.'

DS: Yeah. How many children do you teach?

NR: I have thirteen from seven years old to sixteen. Yes. And [name redacted] is sixteen now.

DS: So is sixteen the cutoff point, or can they go up until eighteen? How does this school work? Because I'm not familiar.

NR: Oh so you can start as a beginner. OK. And you have a different cycles. So first cycle is four years, when you acquire basic techniques. (DS: Yes.) And some repertoire, but I also do transcription for them, so that they can also do some chamber music with all the instruments together, a duet, or a Martenot trio. Yeah because you have three instruments working so I can organize trios, and then they can also play with other instruments. So, basic stuff. And then second cycle also four years, starts with a contemporary side, and the different techniques, the choice of different timbres, and the link between the score and the composer. Because when they're younger they don't realise that they are more in the body. You know, they're more like 'okay I need to sit this way, she wants me to be like that.' And then I say, 'okay, now we're doing an electronic contemporary instrument, you have to be

aware of that'. So I teach also the history of it, and then also the fact that this music was composed by someone who is actually alive. And then understand the relationship between the sound, and their choice of sounds, and the effects.

[Someone comes in]

NR: We need to just have a small break. (DS: Of course) I'm sorry about that.

[later]

DS: We were talking about the age of the students and- so is this sort of an after-school kind of conservatoire where people come after school and learn an instrument as a hobby?

NR: Yes. Sort of. Because also it's a conservatoire where you can also have a professional course. So you can be a beginner just having a hobby, but it's very demanding anyway because you have some theory class. (DS: Yes, I did all of that.) Yes. So it's, anyway. When you saw me with the parents, they were just coming in saying 'ah he has the *formation musicale* at that time and then [?] at that time, it's two hours. No, it's not even 45 minutes: two hours here? So, and then I have to give- So it's demanding even if it's a hobby. It's demanding. I mean, it's like, you can't learn Chinese thinking 'in two years you will learn all the letters', you know what I mean. Same with music, and more specifically in this conservatoire in Boulogne there is this reputation of high level on anything. So it's, yeah it could be a hobby, but it's more than that. Yes.

DS: It's just because I visited Nathalie Forget in the other conservatoire, and that seemed to be sort of like a university study, or-

NR: Oh yeah. This is different. Yeah. Yeah.

DS: So how would you describe the difference, like how do you say in French, because they are both called conservatoire. (NR: Oh.) How you tell them apart?

NR: Oh, the conservatoire where Nathalie teaches is really university delivering- You can be a graduate and a post-graduate at the conservatoire. And before that, and the high school. You know what I mean? And the middle school, the primary, elementary, and the high school. And I can deliver- I mean, not high- the conservatoire can deliver the high school diploma. And then you can go...

DS: Do you see a lot of people entering here and then going on to the other

conservatoire? NR: Not that much, it's really not that much. Well, we are small.

We're a small department. Basically in my case, my students, they came in there seven or eight. And they may be fifteen, sixteen when they enter high school. (DS:

Yeah.) Because then they're too busy. Yeah, some of them, maybe one of them would say 'I continue during high school'. I have one of them actually. He is starting high school now and he wants to continue. And I think he might be able to enter the other conservatoire, the conservatoire supérieure. Yeah. But it's one on, I don't know that statistic. You know, it's... you know.

DS: Yeah. I was just wondering where- I know that there aren't many places in the other conservatoire, but where do they find the students, because they need them to be of a certain level. So are there other places where you can learn?

NR: Yes, like this one, I mean, there was one in Évry, you know, and in Strasbourg. Same level of conservatoire as in Boulogne. And I think this is it. Few of them. We feel that it's few places, but also at the same time, we're not violinists, you know, we don't have orchestra where you can hire a thousand of ondistes as well. So I think it's- somehow it organizes itself. It's a regulation, auto- regulation in a way. I guess, I guess.

DS: Are you in contact with a lot of the other Ondes Martenot players?

NR: So I guess we know each other. All of us. I mean I guess we do. It's just that we... I mean, I have one of my good friends who is an ondiste, Augustin Viard is an ondiste and we worked on projects together. We will play together. I mean it's- but we all know each other. I think it's a question of time and opportunity to, you know... In March I will play with Nathalie, we have a new piece for two Ondes Martenots by this composer Pascal Criton, a female composer, for March for example. But then if you don't have this type of opportunities, we don't work together. But we can see each other during concerts. Yeah.

DS: You said that you're interested in all sorts of repertoire. So have you played classical, new music, popular even...

NR: I do. So I was- I *tried to be* a violinist [laughs] during 10 years, between when I was 15 and 24, just ten years. So the classic I've done is through violin and I like, I enjoy some time doing some classic. This is also with the Ondes, and through my students as well. But it's not- I'm not recognized as, you know, I'm the one doing this new repertoire, I guess it's my label. (DS: Yeah.) But I do different music. I've never played jazz, for example. Never. I'm not sure I can play it. I don't have the skills, I guess, but it's fine. I guess you can't play all the music. I've done some rock music, rock progressive music, experimental... Because I'm part of a production which was labelled rock, progressive in the '70s and now it's contemporary,



experimental, whatever. So I'm in this band, this regular member of this group, band.

DS: What's it called?

NR: Art Zoyd. So for example having this new trio between also rock and experimental and also metal bands, but it's very, it's a mix. So it's really wide, but basically you can find a contemporary touch in any of my projects I do, even if it's rock. You know sometimes- for example, I was hired by this Italian singer and doing some *chanson à texte*, you know, very *poète*. And he said to me, 'I just want *you*.' And I was like, 'me? Do you want me to try to score something?' In his way he wanted to ask me some contemporary stuff. I was doing this event with this guy also, this event in Italy for example, and I was just doing some stuff I like but even doing some rock, *poétique*, whatever music, I was still doing contemporary, they want to bring in this, always. So I've never done rock music, playing rock music. (DS: Yeah.) I guess that's the way I am perceived by others, you know.

DS: Yeah, yeah. So they just ask you to improvise?

NR: Yes, improvise with the score; they had high Ds in mind, etcetera. It's all oral sometimes, so communication is important. If he likes it he will say 'go on', if he doesn't like it he will say 'stop'. But then if you just want to give the best of you, it's important to be able to communicate. So it will always be me improvising, but not really, because they are very picky in this world and they just say 'no no no', and I realise I have to do the score myself. They ask you something completely different...

DS: I see. So one rehearsal everything's fine and that's what they want and then the next one they go like 'oh actually'-

NR: Exactly, they go 'this is the song' and then they ask you something completely different from what you hear. But then it has to be completely... into it. So it's yeah. But it's interesting, it's interesting because you have to be flexible and open and very fast. It's now and not tomorrow, tomorrow is too late. [laughs]

DS: Yes. [laughs] Ok. Can you list the instruments that you have? What sort of what models do you have, what do you play with?

NR: Ah yes, I have an Ondéa model. First generation. I bought it in 2010. Before that I was working on, actually on this instrument [points], on this one actually, this one this is from Jeanne Loriod. But yes, I have an Ondéa. We also have an Ondéa right there, because during summer I sent it to some, the annual revision, you know just to make sure that everything is ok-

DS: Who do you send that to?

NR: In the north of France, well, north, in Beauvais? Do you know it? It's close to the airport. It's like 50 kilometres from Paris.

DS: And who does that?

NR: Mr Rousselle. And the company is CCDE. It's a company, and they were related to Mr Oliva who built the instrument, so each time- I mean, I go there every four months, I go there for my instrument, but for the Ondéa for class I send it once a year.

DS: Ok, good to know. And you said this one was Jeanne Loriod's model. Is that a transistor model? (NR: Yes.) Okay. Okay.

NR: I don't have a lamp- do you say lamp in English?

DS: Lamps, yeah, that's fine, yes.

NR: Valves, no?

DS: Yes, valves, vacuum tubes-

NR: Vacuum tubes, I like this one. No but, lamps, I don't have that here. So, no, no. And yes, I paid for the Ondéa myself. Yes.

DS: Ok. You were also involved in testing the new Ondéa?

NR: Oh yeah. Yes that's true.

DS: How did that work?

NR: I was invited to record my new album on the instrument and also do some- to give my opinion on the instrument. So I went to Calgary to meet the builder-

DS: Was it David himself?

NR: Yes, Audities Foundation. So I was able to test the instrument and say how I felt with the instrument, what could be improved. Also because between French systems and American, you know, just the electricity, it's different. So maybe ok, make them closer to each other. Because I used to say 'first generation' and 'second generation', because it's the Ondéa, because he's the owner, David Kean is the owner of the Ondéa. So I was interested to see how this builder- what his vision of the instrument was.

DS: Can you describe in your own words what you feel that his vision was for the instrument, the motivations, the choices that he made?

NR: I think it's this idea of eternity. I think, I might say. That's what I felt when I talked to him. I think he's very sensitive to the idea that the instrument can live forever. So I think he took a big responsibility. He is aware of that, you know, but he

wanted to take this responsibility of continuing the Ondes Martenot tradition but pushing it, I guess, toward what his vision of modernity is. For example by the fact that the instrument can be a MIDI controller, for example, it's a plus. And I think it's very important. And I'm glad he was able to do it because technically it's very difficult to do I guess. And I think someone had to do it. Someone had to do that for the instrument, and it's done and it's very important, but also, he is... For example, I was very moved and touched by the fact that he said to me, you know, 'when I may be dead and gone, I'll make sure that the instrument can be built without me.' That's what I was really impressed by, because I think few people can have this idea of an instrument. Because this is- for Martenot, for Oliva, the instrument was their baby, their child, and somehow it's difficult to let it go. And I think it's very difficult for them, that is what I found out being in this world. And then when David said that to me several times I was just like, 'wow. This is the way you should do it, just for the next generation.' Just saying, when you teach, you know, whatever you do transmits something, you have a responsibility. You do the transmission in the way that those students, your students, can do the same one day. Maybe. Or not. But the idea is- (DS: The possibility is there.) It's a possibility. Yeah. And I think it's a vision of eternity, that he said that, sounds like, 'ohh'. [laughs]

DS: Yeah. Have you had much contact with Jean-Loup Dierstein?

NR: Yeah, I met him several times and I never had a chance to try it. His instrument really- We used to live close to each other in Paris at some point. It was easy to meet him. And then I never had a chance to try the instrument.

DS: Do you find that many of your students are now interested in buying an Ondes Martenot for themselves? Because they can only practice here...

NR: Yes. For them it's just necessary. I don't know if they're going to be able to do it. I don't know if that's worth it for them. But the idea of buying an instrument, of course. I mean, even one of them is just like, you know, he's ten years old and he's just like, 'when can I get my instrument?' and I'm like, 'well first talk to your parents', it's not like it costs, you know, 100 euros. But they want to have their own instrument, the same way I wanted to have my own instrument when I was a kid.

(DS: Yeah.) And I had to go to the conservatoire to practice, like a percussionist, or- so they want the same, and they don't realize that it's an investment and you can't just have it like a hobby. Unfortunately no. Because it costs too much for just, euh. So if your parents can afford, why not. I'm the first to say yes. Just go for it. It's just,

it has to be a very, you have to be motivated and you have to be very strong.

DS: Yes. Yeah. I'm interested in that because some people have told me that the number one priority for the instrument to continue is there need to be instruments that students can buy, that they can have to practice, etc. Other people then have said, no, the priority is the repertoire, like you. And then some people have said, no, the priority is a high level of teaching available for people interested. So there are three things, and I think they all work together in a way. But you know, some people see one as the absolute priority. I talked to someone from Japan, Tomomi Kubo. She said that there are not enough instruments, and that is the main issue here. With your working on the Ondéa, and you know that Jean-Loup Dierstein's Ondes is also available, and then also the Ondomo, (NR: Yeah) how do you see the future of the Ondes Martenot? Do you think that it's looking up? Is there enough repertoire, are there enough students and teachers, you know- all of it together, I suppose?

NR: I think it's, I don't like to say, 'oh, it's complex' you know, but I think it is. (DS: Yeah) It's complex. It's a combination of things. From my point of view, the more music you make, the more exposed you are. And then they ask you. That's how it works for me. You know, I'm doing new music, new pieces, I have a big ongoing project, these new pieces with the Ondes and electronics, for example, 2018, 2019, a lot of commissions, you know, stuff like that. But the reason I got the trust of my producers — because I have different producers working on that, I am not alone — so the reason why they trust me, and the reason why they say, 'I'll put money towards a new piece', it's because there was music before that. And then they say, 'oh, you've done that, ah, Ravel,' you know. But it's all about exposing, and the more music you make, the more music you transmit, you give, and you play. And then you give the possibility to others to listen to the music and be able to imagine. Not just the ondistes, we don't have the answer on everything and we can't do the work by ourselves. I'm a performer but I have three producers working on this big project, for example. It's because they hired me years ago and they said 'would you like' and then *da-da-da*. It's not just our point of view. We have one partial vision of the whole equation, I think. So we have the responsibility of making the things available. Like, ok, I'm going to see my director and say, 'I would like to have more students. Do you have money for that? No. Fine. Let me know. I'm on it.' Yeah. So that's my responsibility. But I can't ask students to come over to me. I can't invent them. So, you know, somehow I do my part and if my director does his part maybe

he's going to send me students. (DS: Yeah.) That's the reason why I have 13 students, and I'm full. I have no more spots. So I think the repertoire can be done if you meet composers. The composers have to be able to imagine for themselves and then the audience can come over and say, 'we like it, we'll come next year.' You know what I mean?

DS: Yeah. So there is an element of money involved. Obviously these things need to be funded. Performers need to be paid. Composers need to be paid or need to get some revenue somewhere. Where do you think, in general, the money comes from? Is it producers, do you find, or...?

NR: Oh. *Ooh la la*, I don't know. The thing is I can't- I could answer this question, it's just that I don't know which one is the first one. (DS: OK, so there's several. Yeah.) I think there's several. And if, I don't know, if my- I guess if I'm not paid here for example, I'm not coming to teach, you know what I mean? So it comes from here. You know, this maybe could be the start of the loop, here. And then I have students, and I can send them to the- after ten years of education with me I can send them to Nathalie, and then they can have their own production and, you know. Or maybe I can start the loop with me, now, being where I am now, and saying I put my money to pay a composer to do a piece. And then the agents come, and I don't know where to start the loop.

DS: It's definitely a sort of a feedback loop.

NR: I believe in that. And the more you give, the more you receive. That's the reason why- I think I'm someone very optimistic, basically. So I'm not going to say it's going to die. I don't believe that. So it's, you know, it's all about- it's not just one-

DS: It's a complex network.

NR: Yes. But it works all together for sure. And all the power is not in our hands. I mean the ondistes. We only have one tenth of it.

DS: Yeah. What sort of role has the instrument itself played in, sort of, helping it to survive or making it difficult for it to continue? Because I know that lots of these instruments start breaking down, they have trouble, it's difficult to travel with. You know, in terms of the technology itself, how do you see that kind of force influencing the whole cycle?

NR: You don't have to- I think you don't have to let yourself be influenced by this. Other than that, you don't predict yourself because you say, 'oh, it's dying'. This instrument, I have five instruments here. This one over there? It's broken. I can't

have a quartet with my students. But if I think, 'oh and then it's going to be this one dying' I should just stop playing and teaching. So I think you should just, not deny, *hein*, just forget this part to continue to dream or imagine projects. Then you need to address this specific topic of repairing or building your instrument. It's a difference. But you shouldn't just say, 'oh, no instrument?'

No music here. Okay, bye! I'm going home.' You know?

DS: So you think that if you focus too much on the problems that the technology has, it causes you to think very negatively?

NR: And you send the wrong messages, I think. Why should my producer commission a piece to- you know, why? Why, if the instrument is dying? I think the more music you- if you think positively they just say, 'man, it's not working, what can we do?' And then the solution comes out of your own small world. You have to be somewhat like David Kean, who was not a contemporary musician, not a performer with this classical education doing conservatoire, and then conservatoire supérieure. Maybe he's out of this system, and maybe that's his point of view. I think he was first attracted by the music, and *then* he saw the instrument. I think. And if I said to him, 'you know what, I've no commission I've no concerts and no new ideas,' he'd say 'why should anyone be concerned about it?'

DS: Yeah, yeah. Oh, I had another question as well... Do you think that there are any other factors than the ones that we have discussed that have influenced the sort of evolution or maybe even the interest in the Ondes Martenot and the survival of it?

NR: Ooh. Maybe- it's difficult to say, I'm not sure. Maybe because we have reached a battle between digital and *analogique*, maybe? Because *analogique* is coming back and the instrument is one of the first analogue instruments. So maybe this battle — which now is over because it's not to be opposed but it's to work together — and maybe this. Maybe that's one of the reasons they say, 'ooh'. And some famous soundtracks. So maybe those sorts of elements. I'm not sure.

DS: Yeah, absolutely. You said that you really love that the new Ondéa has MIDI. Why exactly is that?

NR: Because it's funny to see how- I mean it's just an extension. (DS: Yeah) It's just a tool. For me it's just more stuff. Because it doesn't change the definition of who I am. It's just the idea that you can control a timbre which sounds like oboe, you can control a timber which sounds like flute. Yeah. You can control a timber which sounds like.... (DS: Anything that you-) Exactly.

DS: So you do see MIDI as just an extension of the drawer?

NR: It's more sound for me. It's more symbolic. For me it's all about more style, more color. It's the same idea when I ask for pieces for Ondes Martenot and live electronic treatment. It's like, it's just an extension of the sound. Just being able to play with the thick reverberation. And if you want to put three loudspeakers, great, and you want a subwoofer, and MIDI, please do so. You know, it's just that. For me I'm doing the same thing with my skills.

DS: On that note, because there are so many... There's almost an unlimited number of possibilities to play because you've got unlimited pitch and unlimited volume and all of these timbers that are now also unlimited. Are there still any restrictions that you need to play with? You know, like for example in other acoustic instruments people start to notice sort of, 'oh I can't do any more than this, but if I sort of bend the possibilities of this instrument I can do some other really interesting things.' For example, with the violin you can start playing overtones even though the strings don't go any higher, and you can play with feedback on an electric guitar. Are there any limitations here that you play with on the instrument, or how do you see that?

NR: I don't see any limitations. (DS: OK.) If you just accept to bring this feedback pedal. Or to bring this mixing desk. No, I think, I mean, it's a question of choice. And what you like or not like. Some people say, 'I don't like this distortion pedal.' Because I also do that. Because I think it's fun. And I also transmit that to my students, like, 'you have the instruments this way but if you want to plug a guitar pedal, please, an echo, please do so because this is it, you can do it.' (DS: Yes.) I don't see any limitation. Same with the *monophonique*, *monodique* stuff. The violin is *monodique*, you know, whatever. No one died because of that.

DS: You know, doesn't the new Ondéa with MIDI have the possibility of-

NR: Yes, there's this *polyphonique* you can do also, so it's fun. It's fun. We won't have, euh, *le recul* [hindsight]. How do you say that in English. Like- we see that now, I know it's fun. And I'm guessing I'll not be the one being able to master it. I let that to my students. Because- but I can see it's fun, you know I might use it. But I'm sure my students will approach that differently. (DS: Yeah, okay, great) Because you know, they grew up with that, and they say, 'oooh'. You know, so I'm not afraid or worried about that. I mean I'm sure it will be used but I guess I'm not- I don't know. But it's fun. Yeah. But they'll do better than us.

DS: Yeah. I have one maybe difficult question that I've asked pretty much everyone

else so far, and that is: what if you take away every single feature, which features do you think need to remain for it to be an Ondes Martenot?

NR: *La touche*.

DS: Just that, *la touche*.

NR: Oh yeah.

DS: I've heard that before.

NR: Yes yes yes. Because this is, you know, it's you. The rest is just, you could have a ribbon, like, you can change the form of the ring, you can change the size of it. It would be difficult, but OK, yeah. But the idea of controlling the sound, that's what makes you a musician.

DS: And that's why the sensitivity of it has to be right.

NR: Yes. Yes, that's right. And that's the reason why when you move a finger, and you don't feel that what you move, you don't hear it? Bad instrument. (DS: Yeah) Yeah. That's why he was a genius, Martenot. He knew it. It's, I think because he was a cellist, because he felt the sound as a cellist in his hands and in his body. So he wanted the same as electricity. It's not even a question of new sounds, he didn't care about the sound, I'm pretty sure about that. That's my feeling. Yeah, but then control, you can control- or hold a sound forever, I think that was the genius.

DS: Yeah. So even if a new instrument came out and everything was MIDI and everything had a different controller, but the *touche* was exactly the same, would you still call it an Ondes Martenot, or an Ondes musicales, or...?

NR: I will call any instrument Ondes that won't hurt my technique. (DS: OK) If I can play, if my skills are not denied, if I can use them... this is an Ondes. So for me the Ondomo is an Ondes as well. (DS: Yeah.) Small keyboard. I can't play with it because I'm not used to it, but it's still an Ondes. I just I think it's important to have different- but, the fact that you can control the sound very precisely and with your inner flame, really transmitting through it... this is the key of it. This is my technique. This is what I learned during all these years. So I will call any instrument that gives me the possibility to play a piece right for Ondes Martenot an Ondes.

DS: Yeah. Yeah. Good point. Yeah that's the most common response. I think everyone's in agreement that the *touche* is the heart of the Ondes Martenot. And Suzanne, you know, who I also interviewed, said, 'you can, even in an orchestra or with a different instrument, you can pick out the Ondes sound, whatever timbre, because of the *touche*'. So it gives it not a certain colour, because it's not a timbre,



but a certain dynamic that is specific to the Ondes Martenot. Do you agree?

NR: I think yes. Yes, I agree, and I agree because I think you hear the performer. You know, you don't hear the electricity. I was playing the Ondomo in April. I was with Nao. At some point he said to me, 'that's funny, it sounds different'. (DS: Right). I'm like, 'no it doesn't sound different', it was the same timbre I was using. It sounds *me*. Sounds like I'm euh [waves hands] (DS: No, no) But really, you know what I mean? He was just like, 'no no no, it never sounds like that', and I'm like, 'it's the same sound'. Yeah. It's the same timbre, technically yeah, but I don't think it's the same way of playing. Yeah, and he was surprised.

DS: So people can immediately put their own personality, their own technique onto it.

NR: That's why you can recognise- and I can do that because I was a [sarcastic voice] *violinist* so you know, but I can recognise the play of other violinists. Yeah. I guess you do that with flute also. There is a touch of it, but that's it also.

DS: That's just so interesting. Yeah. Brilliant. Yeah. I think I'm out of questions!

NR: Great! That's good.

DS: Is there anything else that you would like to say, or would you maybe like to ask me a question, or-

NR: Not really, it's just, uh, I guess it's time just to understand that it's acoustic. I think this is it. I think, acoustic. The rest is just...

DS: Is there a bad connotation... or does calling it an electronic instrument have a negative impact on the instrument, do you think?

NR: Not really. Not bad impact. I think it's part of history. So you can't deny it. We have to accept it. It's just that at some point I guess it was misunderstood. I guess that I'm still proud to say it's an electronic instrument, and I said to the parents, 'it's an electronic instrument, this is it.' You know, I plug it in, so this is an electronic instrument.

DS: But do you feel that people maybe sometimes have different expectations and then are surprised?

NR: Yes of course. Because it's not as popular as other instruments. Yeah, but it will pass. You know, in 100 years... you know. Music remains. Not us. [laughs] You know? Not us.

DS: Oh, I have one difficult question, actually. I wasn't sure if I was going to bring it up, but in my research so far I have been calling the people that are involved in the

Ondes Martenot, you know, whether it's repairers or players or teachers, the Ondes Martenot community. And I've realised through talking to people that maybe there isn't as much of a community as I initially thought there was. So just because people are involved with the Ondes Martenot doesn't mean that they sort of get together all the time. (NR: No.) So do you think that I need to use another word or-

NR: Community? Well you do have to remain global, I guess. Community... yeah, it's a strong word for what it is.

DS: It has a lot of connotations of sort of friends, and-

NR: Not really. Not really. I guess because we're too young. We're not even 100 years. It's coming. In 2028 we'll be 100. I think we're too young for that. We need time. We need history. We need history to talk and to say, backwards, stuff on us. But we're too young.

DS: OK. Jean Laurendeau just released his second version of the- (NR: Yes) I have it [the book] already, it came in the mail. (NR: Yeah?) And he mentions the Ondes Martenot *milieu*. NR: Yeah I think maybe that's a bit more. Yes, it's like a niche. Yes.

DS: It's sort of a, more kind of an area, rather than a connection between people.

NR: Oh, you're right. It's more about what we have in common. Yes. Not the connection. You're right.

DS: I think it's important to get that right.

NR: Because between us we have some connections, that doesn't mean we all can- Exactly right.

DS: No, that's good.

NR: And I don't think it's going to come from us. I think it's going to come from, I said history, but also the next generation, all the other- the audience looking at us, or the next generation. Maybe I'll be gone by then, but giving perspective, and then say 'oh man, we should do more together, talk, I don't know.'

DS: Yeah yeah. Good point. OK, one more question. (NR: Of course.) I know that a lot of professional Ondes Martenot players have been women, and I know that a lot of new people interested in the Ondes Martenot are men. How do you see that shifting, and is it a bad thing, or is it...?

NR: I don't know. Because all my young students, I have four of them. Male. It's funny because... I don't know what's going on. I haven't chosen my students, so I'm not going to say 'I've said yes to this seven-year-old and no to this eight-year-old',

so. I don't know. I've never thought about that. I should think about it. I've seen it in my students already, like, I had a trio, all male, and then I realised that they outnumbered- usually we're more...

DS: It's a strange development.

NR: But for sure that means something.

DS: I know that the people I know that are interested in the Ondes Martenot are interested in it because of Radiohead.

NR: Maybe- yeah! That's right.

DS: Not sure about the young students, the seven-year-olds, that they listen to Radiohead. Maybe their parents do. I don't know. But that's outside of Paris. So I'm not sure how it looks here, but there is sort of a shift in the demographic.

NR: But I think the idea of like, Radiohead, and that rock, experimental outside of the classical has made this shift. Maybe. That would be an explanation. You're right. You're right. When I think about it... When I talk to people... I'm like, 'oh yeah'.

DS: I like that one of the first electronic instruments- you know, electronic instruments in general from the synthesizer onwards, it's been such a male world, because it's music technology, and technology is supposed to be male, and all of these things. And within music technology we are trying to change that a little bit to, you know, be more inclusive, more inviting to women, et cetera. I teach music technology as well, so I try to help. But then with the Ondes Martenot that was not an issue at all. And now, you know, maybe someone needs to protect that, or make sure that it doesn't sort of shift to an all-male...? I don't know. Maybe it won't happen.

NR: Maybe it won't happen. Again, I would say, we're too young, you know. Because this is the first focus. And just like, 'oh, a lot of women'. But then what will we say in two hundred years?

DS: There's maybe no way to see trends so far, yeah.

NR: Yes. But you're right about that.

[end of interview]

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