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The appendices are designed to support this research and highlight the development of a practice, fundamentally experimental, supported by interviews with artists, authors and musicians who are currently operating in varying genres of auditory art. Presenting ways of initiating a sonic realm; to arenas of potentialities, forces listening to their silent voices through vibrations and resonances of sensory experience. This is a volume of visuality supported sonically as expositions utilised through Max and Ableton. Initial experimentation was conducted in the Isadora program as a predecessor to Max for the intention of patching, troubleshooting and audio-visual experimentation. It is important to add visual screenshots of the arrangements to give the untrained eye an expectation of what was developed throughout the thesis. A Video showreel of the Max and Ableton patches will be provided in a DVD format at the back of this volume as will the author's music and sound compositions. This volume incorporates a glossary of terms, contemporary artist's contextual reference material and questionnaire data.

Sound is omnipresent and manipulatable due to the physical properties built-in. What this volume was required to do was highlight the influence sound has in the author's practice as well as technology used to output a creative process. An opening of other potentialities can be inferred from sounds capacity to transgress varying genres and styles of post-production. What one hears, someone will apprehend something contrary?

## **Appendix II**

### **Soundings**

#### **Interactive Artwork 1 *Watching* (2014)**

Contributing evidence of this principal interactive artwork commences the journey for the foundation of this amplification. The system of interactivity manifested a particular outcome: Participators observe themselves on screen and utilising their voice or another way of sound conception, can 'glitch' their self-image. Any sound or noise by the participant transforms the perception further. The Isadora software program was assessed for reference purposes and examined for maintaining a future application. The aim of the artwork was for testing interactivity using gesture and voice in an exhibition format, together with other artworks and designed to challenge sound in an elected space. The installation setup was a computer screen, webcam and a MacBook Pro computer with Isadora software installed. The exhibit had one computer hidden under a plinth, so the public had only one screen to look at (to avoid distractions).

Instructions were provided, so participators knew what they needed to do to interact between machine and human. The purpose of providing instructions was to consent novice computer users to contribute to an interactive installation.

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## Isadora Program

Below are the screenshots of the testing required for the artwork *Watching*. Highlighting all the testing conducted utilising the Isadora program is evidenced. Isadora is comparable to the Max environment by the system of patch cords and objects. Isadora contributes a factor of interactivity, yet it did not sufficiently sanction all parameters necessitated to control image and sound editing in the requisite manner expected.

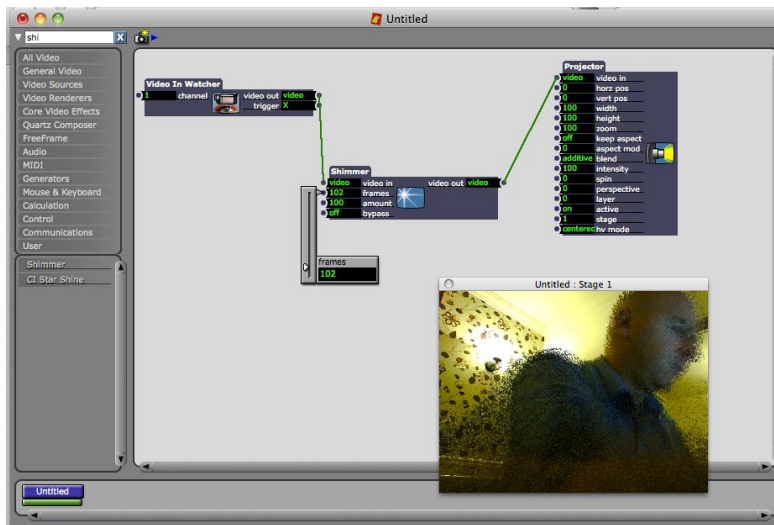


Figure 1  
Paul McConnachie  
*Isadora and Modifying Shimmer Effect (2014)*  
Webcam Test Screenshot

The shimmer effect is measured by adjusting the parameters (changing numbers) to enhance the grain amount, which develops an increased manipulation of the image to test appropriateness as an exhibition context.

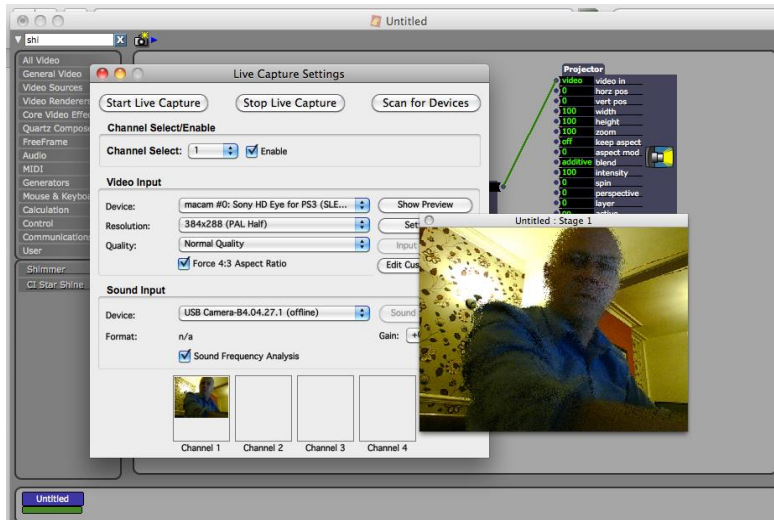


Figure 2  
 Paul McConnachie  
*Video Effect and Live Capture Enabled* (2017)  
 Screenshot

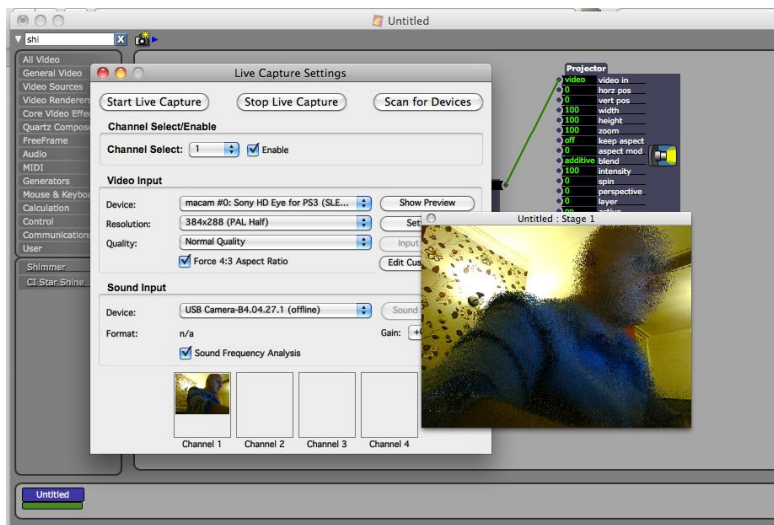


Figure 3  
 Paul McConnachie  
*Increased Shimmer Effect, Disintegrating Image Pixel-by-Pixel* (2017)  
 Screenshot

Figure 3 exhibits the desired outcome necessitated to disintegrate an image beyond comprehension. The video camera is apprehending in real-time and maintains the expectation of the exhibition.



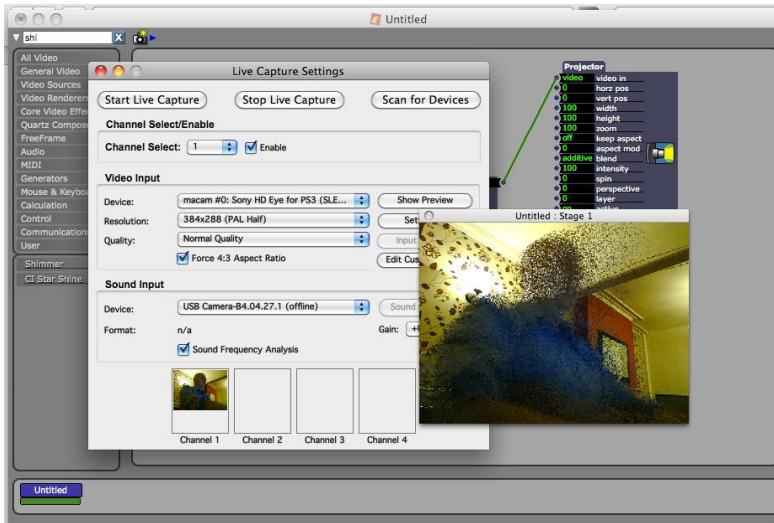


Figure 4  
 Paul McConnachie  
*Envelope Generator* (2017)  
 Screenshot

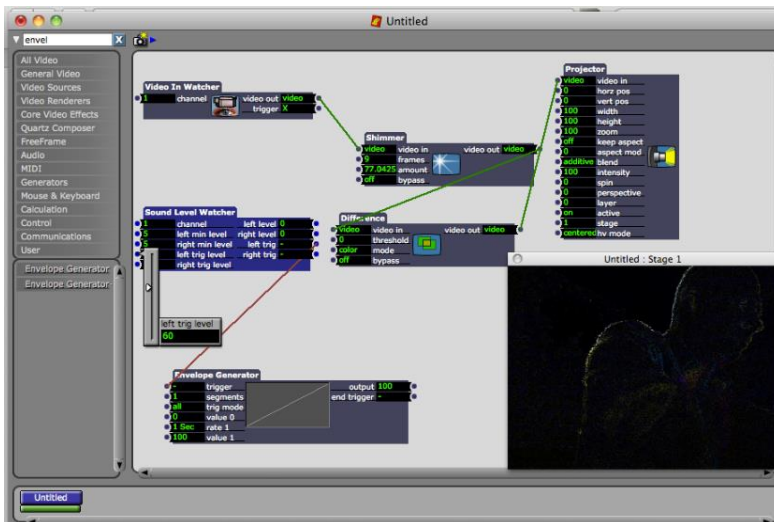


Figure 5  
 Paul McConnachie  
*Testing Audio and Video Effect* (2017)  
 Screenshot

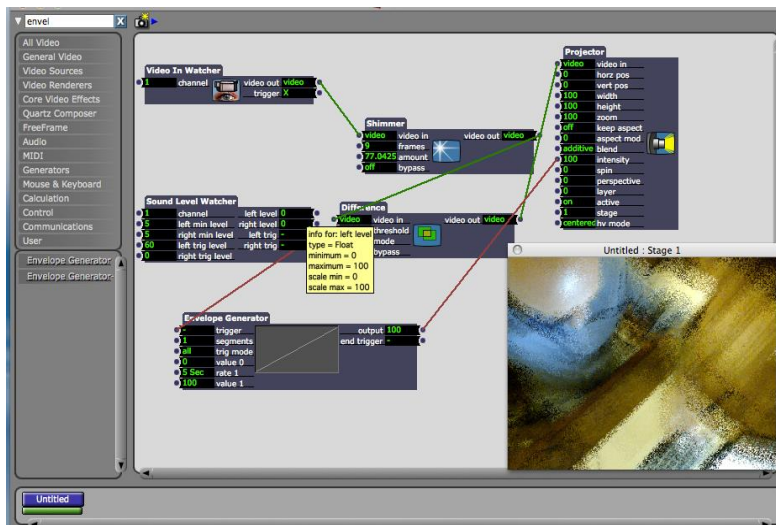


Figure 6  
 Paul McConnachie  
*Six Patching Objects for Interactivity and Webcam* (2017)  
 Screenshot

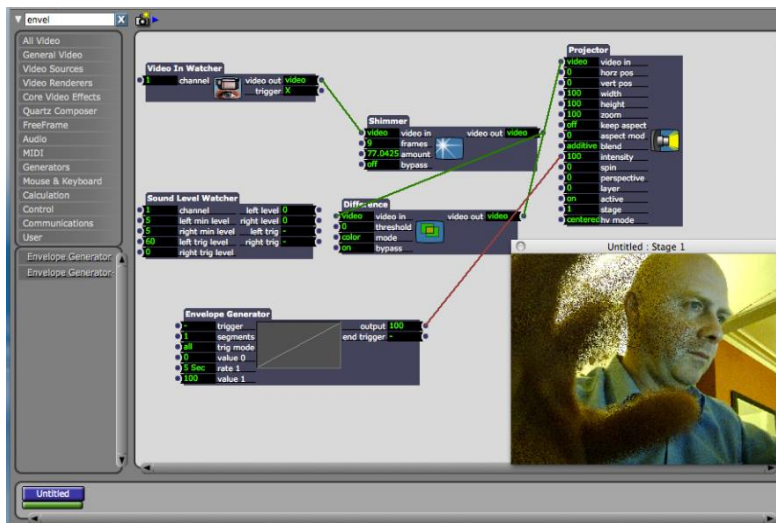


Figure 7  
 Paul McConnachie  
*Correct Parameters for all Modules* (2017)  
 Screenshot

Figure 7 exhibits the desired outcome necessitated to disintegrate an image beyond comprehension. The video camera is apprehending in real-time and maintains the expectation of the exhibition and of Watching as an artwork.

## Interactive Artwork 2 Gesturing

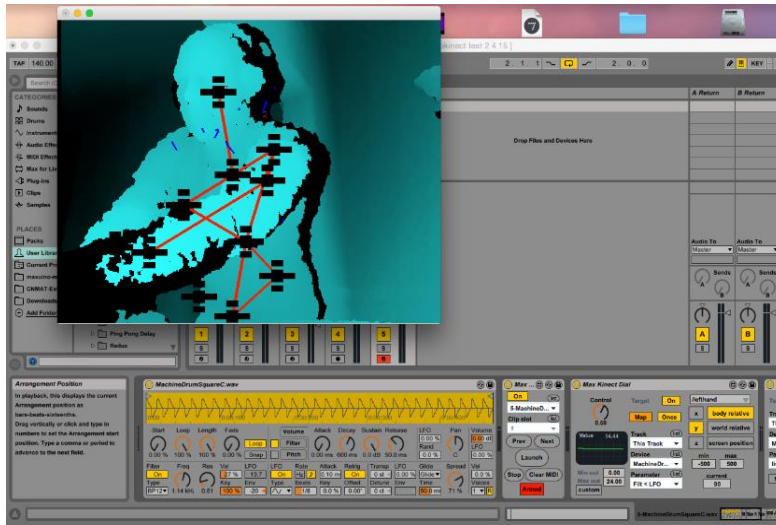


Figure 8  
Paul McConnachie  
*Kinect (Synapse) and Ableton Synchronised* (2014)  
Screenshot

Figure 8 presents the author's body, mapped, employing the *Synapse* program. The skeleton composition (highlighted in red) corresponds to the frame and is mapping parameters, granting the program with functionality. The Kinect operates with Ableton to command various considerations and body gestures can manage several features of the program. The Kinect and *Synapse* trigger audio and video functions together. A continuous audio track is essential, so while a participator accesses the space, a video event is initiated, and elements of the body will generate events at distinct times.



Figure 9  
 Paul McConnachie  
*Adding own Composition for Kinect (2017)*  
 Screenshot



Figure 10  
 Paul McConnachie  
*Adding Audio Effects to Soundtracks (2017)*  
 Screenshot

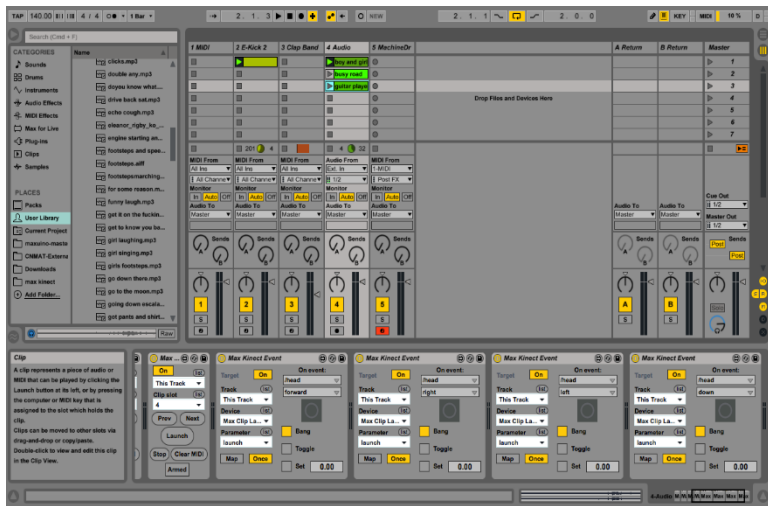


Figure 11  
 Paul McConnachie  
*Kinect Events Triggering Different Facets of Audio* (2017)  
 Screenshot

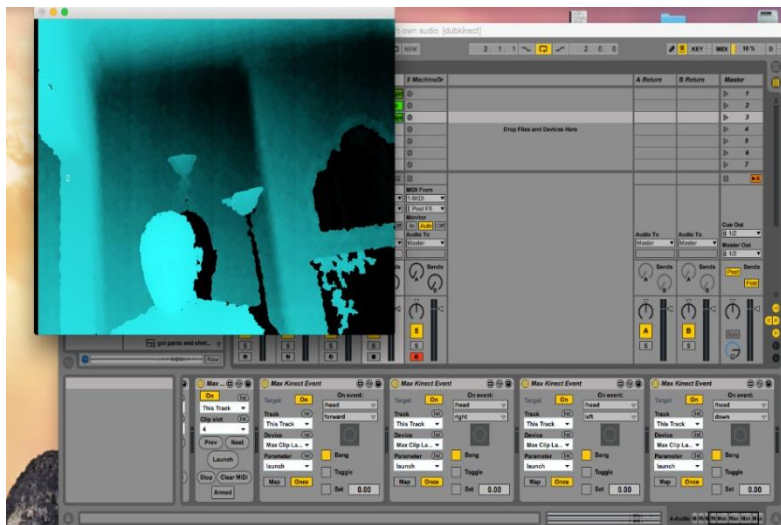


Figure 12  
 Paul McConnachie  
*Synapse Screen and Max Events* (2017)  
 Screenshot

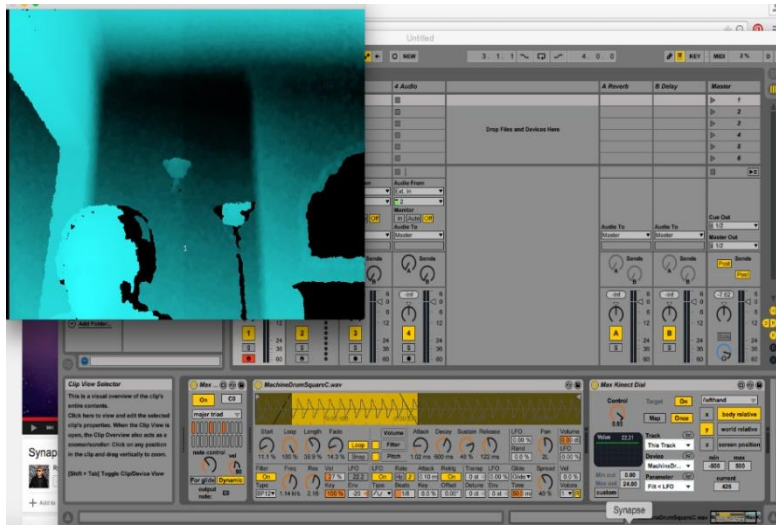


Figure 13  
 Paul McConnachie  
*Gesturing with Hand* (2017)  
 Screenshot

Max Kinect dial is operational and controlling the LFO (Low-Frequency Oscillation) by gesturing with the left hand. The Kinect dial requires parameters -100 minimum and maximum 100 permitting for smaller movements of an arm to modify the sound. Adjusting the minimum out to 1- stops the LFO button from operating down to silence.



Figure 14  
 Paul McConnachie  
*Testing Different Gestures* (2017)  
 Screenshot

To improve this Kinect project and examine the gestures expected, is to acknowledge sound comprehension and audience members to detect what is exhibited. There are many complex sounds triggered all at the corresponding time. Comparable to the expectation when walking along a bustling street in the city. The intention was, to create with, small gestures, which get more significant, the more sounds are created. Developing motions, this way to control audio has been one of the central premises of this project. Technology, as a facilitator permits control of the audio output. The audience, creator and participator present the parameters of sound within the work and is a modified approach of rationalising an artwork while attending an art exhibition.

The author has formulated the installation work, for observers, players and listeners anticipated to complete the work. It is not concluded until there are synergies between technology and participators. The exchanges are reciprocal, as it will only operate when the other is present.

The *Synapse* technology requires knowledge a person has arrived in front of the Kinect and will only work when someone is standing in front of the camera with their hands raised above their head. Once mapped by the infrared eye, exchanges take place, and human to computer gestures returns a sonic output.

### Interactive Artwork 3 *Blackstrip Put Your Card In*

Participants in the production phase of creating sounds. The audio work they created and recorded is available on Soundcloud (<https://soundcloud.com/pmgunk/black-stripput-your-card-in>)



Figure 15  
Paul McConnachie  
*Participants using Wiimotes to Create Sounds: Interactive Sound Installation (2019)*  
Photographer Paul McConnachie

The participants were pointing their Wiimotes towards the image on the wall and conferred the correct position adopted as if in a gaming context.





Figure 16  
Paul McConnachie  
*Participants Adding More Gestures Using Wiimotes: Interactive Sound Installation (2019)*  
Photographer Paul McConnachie

Figure 16 shows the students increasing more confidence and practising gestures by raising their hands higher. By modifying their playing position, they are adjusting the pitch and frequency of the sounds.

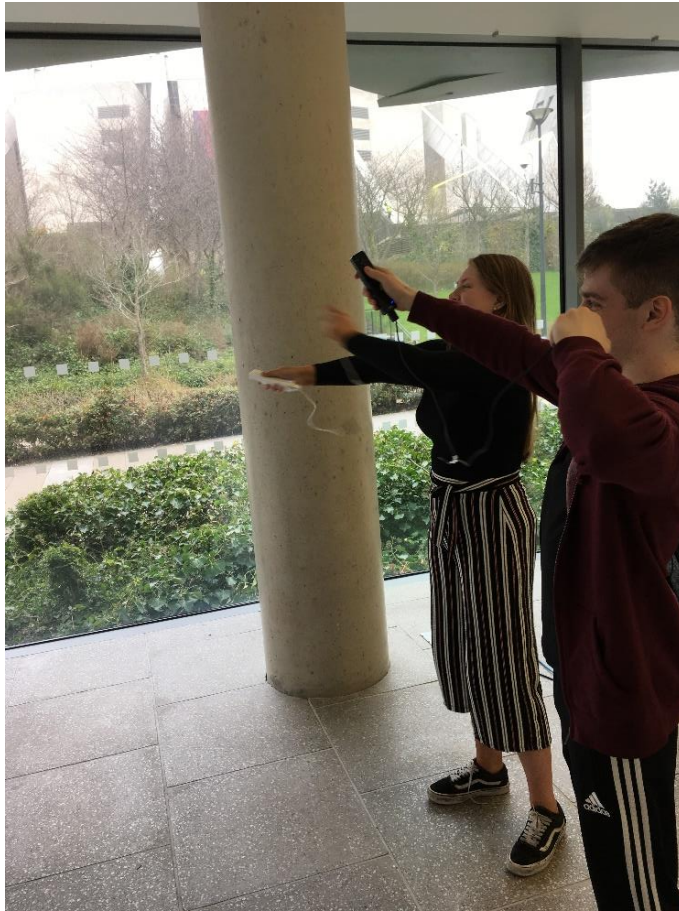
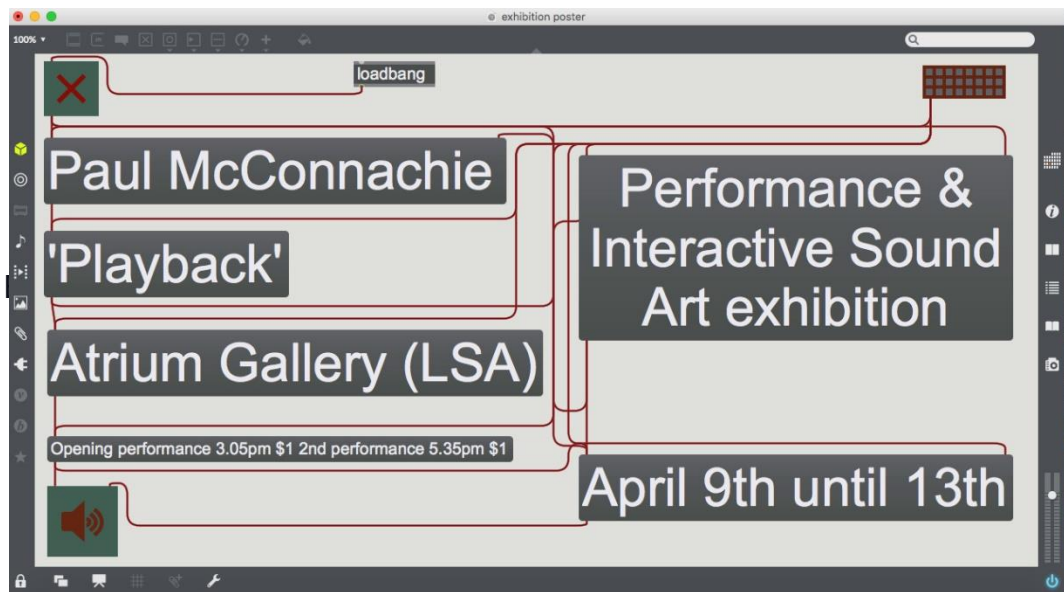


Figure 17  
Paul McConnachie  
*Participants Displaying More Confidence Using Wiimotes* (2019)  
Photographer Paul McConnachie

What transpired was a soundscape of noise unique to the duo with individualised sounds generated. No traditional conventional instruments were adopted, so participants were free to investigate sound and music production, utilising devices commonly associated with gaming. Every button on the Wiimote was programmed to generate sound. Dependent on the motions of each individual, an interactive, immersive soundscape was composed. There were 6 Wiimotes available to use but only two were activated at this time.

## Interactive Artwork 4 *Playback Performance*

The exhibition *Playback* (2018) contextualised from a performer applying a traditional instrument (guitar), rather than performing behind a computer screen. A guitar is attached to *Ableton* and *Max for Live* for generating complex sounds, similar to an effects pedal. An original score was composed for the performance (33), and the score was played by applying the guitar in a table top style, comparable to Fred Frith. The performance is durational and has no time restrictions; it is up to the player when they want to complete the work (using a Cagean ideology). A video of the production is accessible on the Showreel DVD in this volume.



*Playback* Exhibition Poster  
Paul McConnachie

Live performance showing the setup of performer and table top guitar.



Figure 18  
Paul McConnachie  
*Playing Modified Guitar Through Ableton and Max: Performance (2019)*  
Photographer J.W Barrie



Figure 19  
Paul McConnachie  
*Playing Modified Guitar Through Ableton and Max: Performance (2019)*  
Photographer J.W Barrie



Figure 20  
Paul McConnachie  
*Modified Guitar with Projection* (2019)  
Photographer J.W Barrie

#### Performance setup:

- Electric guitar
- Focusrite Audio interface
- Marshall Amp
- M audio USB speakers
- 2 projectors
- 2 Apple Macbook Pro computers

## Playback/Feedback Score

The score is composed for guitar and is in 3/4 time. Repeated phrases are indicated throughout the piece and notes are to be played up and down the neck. The opening bars set the tone for the whole piece, and the performer can choose how long they want the notes to ring out.

### Playback/Feedback

Paul McConnachie

The musical score is written in 3/4 time and consists of six staves of music. The notation includes various musical symbols and performance instructions:

- Staff 1:** Starts with a treble clef and a 3/4 time signature. It begins with a dynamic marking of *mf* and a trill. The first measure is marked with a bracket and the number 8. The piece concludes with a trill and a dynamic marking of *f*.
- Staff 2:** Measure 9 is marked. It features a dynamic marking of *f* and a bracket with the number 8. The staff includes instructions for repetition: "repeat x2", "repeat x6", "repeat x6", "repeat x3", and "repeat x4".
- Staff 3:** Measure 18 is marked. It includes instructions for repetition: "repeat x4", "repeat x2", "repeat x2", "repeat x2", "improvise here", "repeat x2", "repeat x2", and "repeat x2".
- Staff 4:** Measure 27 is marked. It includes instructions for repetition: "repeat x3", "8 repeat x2", "8 repeat x2", "8", "8", and "repeat x3".
- Staff 5:** Measure 36 is marked. This staff contains a single melodic line with a long, sweeping phrase.
- Staff 6:** Measure 46 is marked. It includes an instruction for repetition: "repeat x8".

Figure 21  
Paul McConnachie  
*Playback/Feedback Composition* (2019)  
Paul McConnachie

## Interactive Artwork 5 *Watch Play Listen*

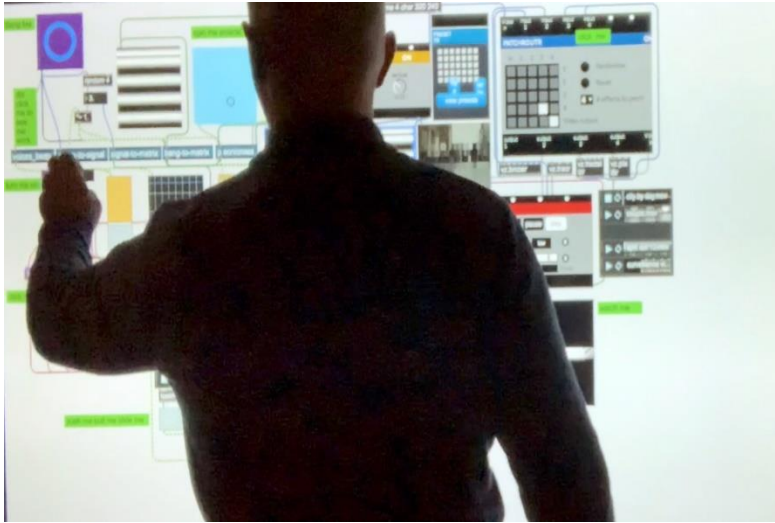


Figure 22  
Paul McConnachie  
*Watch Play Listen* (2018)  
Video Still



Figure 23  
Paul McConnachie  
*Watch Play Listen* (2018)  
Video Still



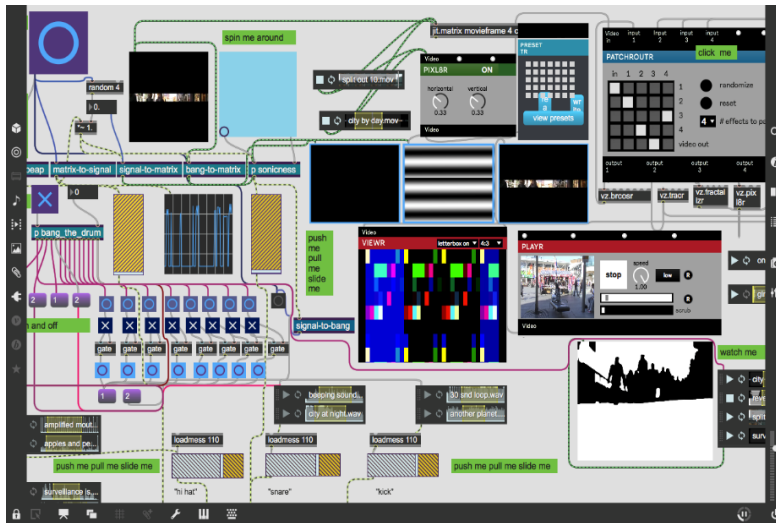


Figure 24  
 Paul McConnachie  
*Watch Play Listen* (2018)  
 Screenshot

The complete patch, *Watch Play Listen* shows all the patch cords on display and each object having a specific function, making this audio-visual spectacle operate. Instructions are added in green comment boxes to give the viewers/listeners ideas of how to interact with this patch. The patch operates by a user clicking on the enlarged blue button with an instruction to 'bang me'. This is standard practice in Max patches to switch events on. Once this is engaged, the 'drum machine' is triggered into action, activating different audio files. When users click on the purple box with the blue "x", this triggers video files. Some objects work instantly, requiring no button press or input as these are set up with a 'loadmess' message, which loads a file automatically upon opening. All video and audio files are from the author's designs and library and captured in Liverpool at the time of writing the thesis.

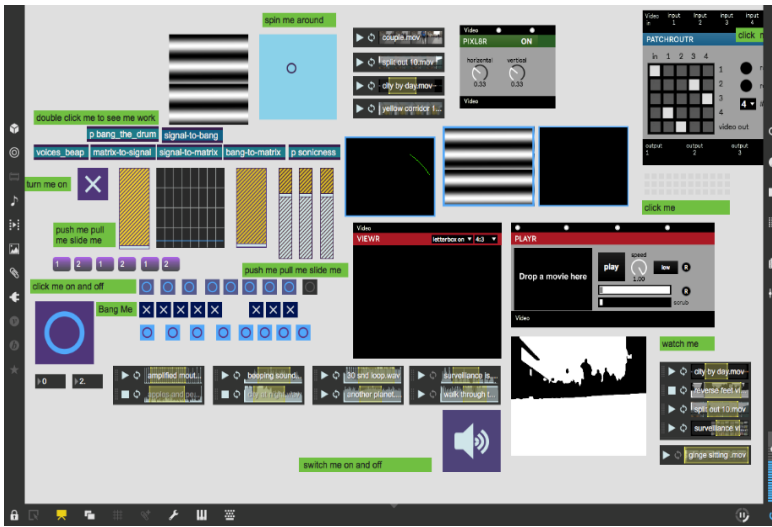


Figure 25  
 Paul McConnachie  
*Watch Play Listen* in Presentation Mode (2018)  
 Screenshot

Figure 25 is in 'presentation' mode (front end). This is what users witness when observing this patch. All patch cords are hidden, and any irrelevant detail is dismissed into the background to restrict any accidental switching off or moving of objects. Presentation mode sanctions users to adjust and resize interface objects in a patch, independently of their functional position and size in patching mode (where objects are connected). Since 'patching' in presentation mode is not possible, it is conceivable to provide an editing encounter closer to a typical object-oriented drawing application.

Every object in Figure 26 is linked via patch cables and designed to represent a fast-paced media vibrant cityscape.



Figure 26  
Paul McConnachie  
*Layout of Objects in Watch Play Listen* (2018)  
Screenshot

Object numbers and their role in the patch:

1. Audio Files
2. Bang (Turns Everything On)
3. Drum Machine (Connects to Audio Files)
4. Sliders (Switches Different Audio Files On and Off)
5. Speaker (Turns All Sounds On or Off)
6. Video Files and Viewer
7. Sonicness (Sound Creator)
8. Signal Visualiser
9. Video Viewer (Pixelation)
10. Pixelator
11. Video Player (Drag and Drop)
12. Scope (Frequency Visualiser)
13. Frequency Visualiser
14. Abstractions
15. On and Off button for Drum Machine and Sounds

## Ableton

An essential aspect of the author's practice is *Ableton Live* for the production of sonic works. The application acts as a fragment of the bigger picture for an investigation into sound installation art. As a definition, they are experiments in utilising the functions of the Ableton program. Ableton or 'Live' as it is commonly understood, permits end-users to redesign sounds and alter them into their smallest constituent elements, (granular level).<sup>1</sup> The program is to be applied in a live context and once downloaded; anyone can freely take elements of sounds and re-distribute them into their compositions. Ableton proposes a full production studio for constructing complete compositions, requiring no additional engineering from anyone else. Utilising the program in its entirety, a person becomes the musician, designer, creator, composer and sound engineer, highlighting the numerous roles by the artists, investigated for this thesis.

Ableton is a standalone audio DAW (Digital Audio Workstation) that operates independently from Max. Ableton satisfies an explorative experimenter, any sound inputted manually or generated utilising samples or piano chords, can be broken down to single granular fragments where original sound heard, becomes redistributed into a new sound. A unique

---

<sup>1</sup> Granular synthesis: is a basic sound synthesis method that operates on the micro sound time scale. It is based on the same principle as sampling. However, the samples are not played back conventionally, but are instead split into small pieces of around 1 to 50 ms. These small pieces are called grains. Multiple grains may be layered on top of each other, and may play at different speeds, phases, volume, and frequency, among other parameters.

sound work becomes achievable by using audio effects, midi effects and own compositions. Screenshots of compositional layouts are explained and referenced, corresponding to some of the artists in this thesis.

### Overview of how Ableton works in Arrangement View



Figure 27  
Paul McConnachie  
*Ableton Layout, Categories Section of a Composition in Progress (2019)*  
Screenshot



Figure 28  
Paul McConnachie  
*Midi Mapping* (2018)  
Screenshot



Figure 29  
Paul McConnachie  
*Session View* (2018)  
Screenshot

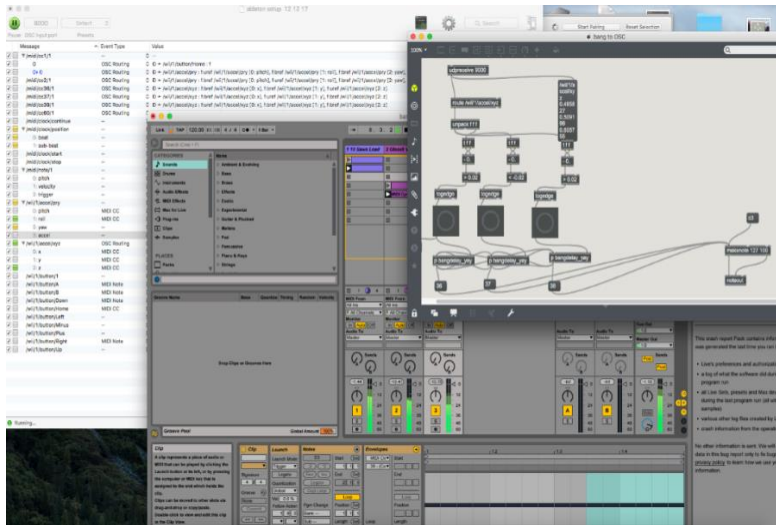


Figure 30  
 Paul McConnachie  
*Ableton, Max and OSC* (2018)  
 Screenshot

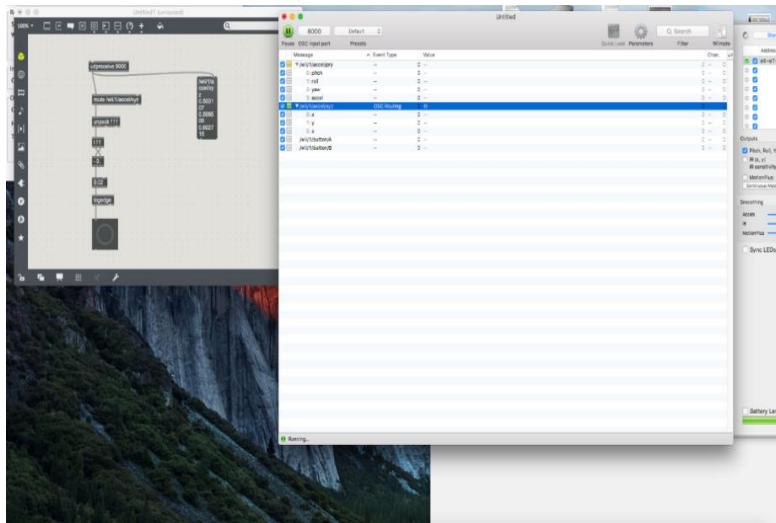


Figure 31  
 Paul McConnachie  
*Testing Different Drum Sounds* (2018)  
 Screenshot

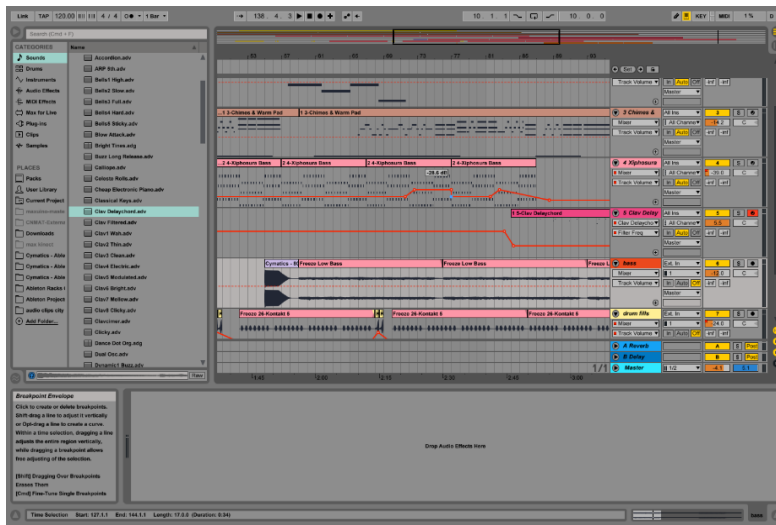


Figure 32  
 Paul McConnachie  
*Arrangement View of Ambient Dark Sound (2018)*  
 Screenshot



Figure 33  
 Paul McConnachie  
*Bassline Repeat Pattern (2018)*  
 Screenshot





Figure 34  
 Paul McConnachie  
*Arrangement View of Ableton for Live Performance (2018)*  
 Screenshot

*Arrangement view of Ableton for Live Performance* demarcates distinct effects attached to the composition. A ‘follow on’ action proposes that whenever a particular scene is initiated, a randomised outcome is chosen. Rather than acknowledging a person with a Wiimote possessing full control over the buttons pressed, the computer has an element of autonomy in the sequence it prefers to play an effect or sound. This is generative sound production, the author programs sound in, and the computer determines what and when to play.

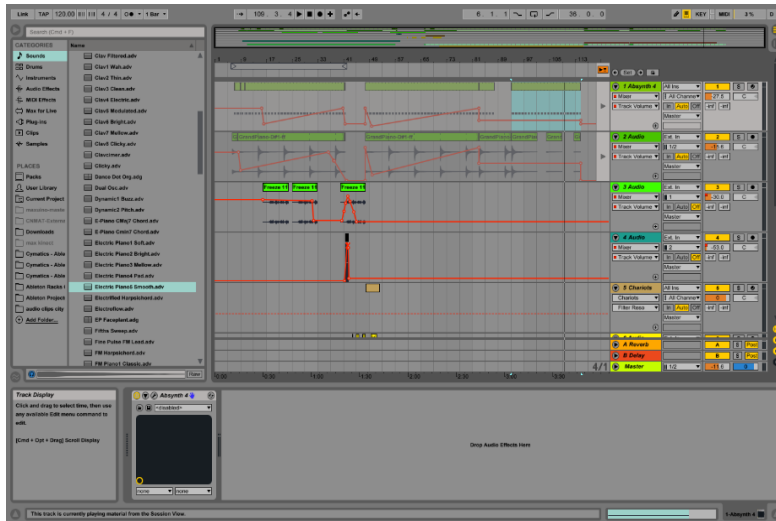


Figure 35  
 Paul McConnachie  
*Glitch Track With Automation* (2018)  
 Screenshot



Figure 36  
 Paul McConnachie  
*Noise Generator* (2018)  
 Screenshot



Figure 37  
 Paul McConnachie  
 Session View Presenting Generative Programming (2018)  
 Screenshot

The Ableton composition Figure 37, inspired by glitch and the audio work of Aphex Twin, Alva Noto and Ryoji Ikeda is intended to be played in a live context as well as in the studio. Titled, *Glitchy Machine Set* it has a combination of effects, samples, field recordings, Max for Live patches and use of built-in sounds formulating an overall impression of what is prevailing in sound art production. Send and return tracks are programmed to automate randomly, permitting the computer to make some choices for the composition generatively. Alvo Noto's *Xerrox Vol. 1* (2007) is an album that utilises audio fragments by eliminating their referents, and all three artists discussed, to begin with, the minutiae of sound, before transferring them beyond their initial referent.

## Compositions

All the compositions listed below are created by the author and representative of the sound art/ music outputted on various online platforms including Spotify and Soundcloud. Every track was composed in Ableton and Max for Live. Hardware used; Roland A300 Pro Midi keyboard: Ableton Push: MacBook Pro computer. Compositions can be accessed directly in Soundcloud, using the following hyperlink: <https://soundcloud.com/search?q=pmgunk>

## CD listing

|                           |                  |
|---------------------------|------------------|
| Composed and Directed by: | Paul McConnachie |
| Text                      | Paul McConnachie |
| Musician                  | Paul McConnachie |
| Recording/Engineering     | Paul McConnachie |
| Mixing and Mastering      | Paul McConnachie |

- Black Strip (Put Yer Card In)
- Candle Light
- Day in the Life
- Digital Immersion
- Dripping Tap
- Drone Attack
- Glitchin Time
- Heterotopic Space
- Immerse Yourself
- Kicking it Hard
- Let Darkness be Your Light
- Move Away
- Somnambulist
- Sonic Collage
- Take Time to Slow Down

## Information on compositions

***Heterotopic Space:*** Is an exploration into spatial relations of the keys on a piano; it is durational, explorative, experimental and recorded live.

***Drone Attack:*** A drone begins then extends to other sounds. What was once a sine shifted to something else, an experiment into sound art.

***Somnambulist:*** One who walks in their sleep capturing the sound around, in a dreamlike state wandering until one awakes.

***Let Darkness be Your Light:*** This is an exploration into a place not seen, touched or listened.

***Dripping Tap:*** Conceived from listening to a dripping tap in a kitchen and recording the resulting drips. What started with a beat, ensued writing and composing from a single idea?

***Kicking it Hard:*** This composition inspired from Aphex Twin's 'Window Licker' that begins slowly then proceeds to a Techno style beat.

***Take Time to Slow Down:*** Take time to slow down and catch the glitches of hearing! Sometimes they are not apparent yet come to the front of listening. Composed at 110 BPM, this is the moment to listen and take in what is around, noises included.

***Day in the Life:*** This is a day in the life of a voyeur in the city. Observing, sitting, listening and soaking up what the city gives. How much is heard, how much is seen? The beat of the city flows to the sound of life, always watching and being watched.

***Black Strip (Put Yer Card In):*** Is a sonic collage of found sounds designed to challenge listening experiences. Inspired by the Beatles song

*Revolution no9*, the composition uses an idea of how a collage is constructed and develops into an auditory collage of different sounds.

***Immerse Yourself:*** Relating to the research aspect of this thesis. *Immerse Yourself* is a polyphonic exploration of voice using Robert Henke's 'Granulator' in Ableton. Each recorded voice is stored on a different channel in Ableton and played through the Granulator, offering a listening experience suited to someone whispering in an ear. It is many voices repeated to create an unsettling effect.

***Move Away:*** This composition is inspired by an elitist society, challenged by the people who struggle with bureaucracy and the clear divide between the rich and the poor.

***Sonic Collage:*** Sounds layered on top of each other, creating an imbalance of expectation when listening to specific sounds.



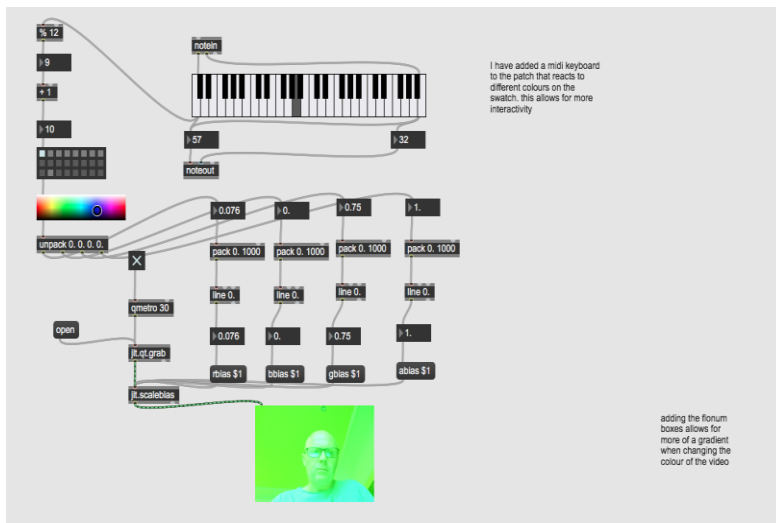


Figure 39  
 Paul McConnachie  
*Colour Changing Video With Sound* (2018)  
 Screenshot

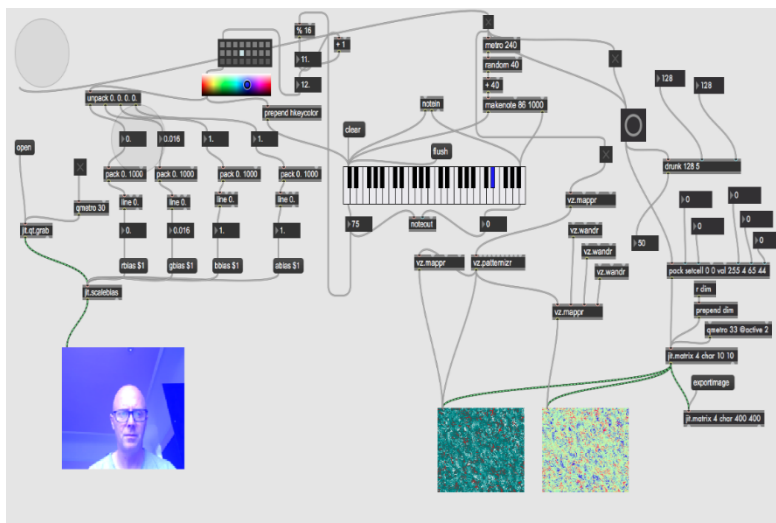


Figure 40  
 Paul McConnachie  
*Colour My World (Updated)* (2018)  
 Screenshot





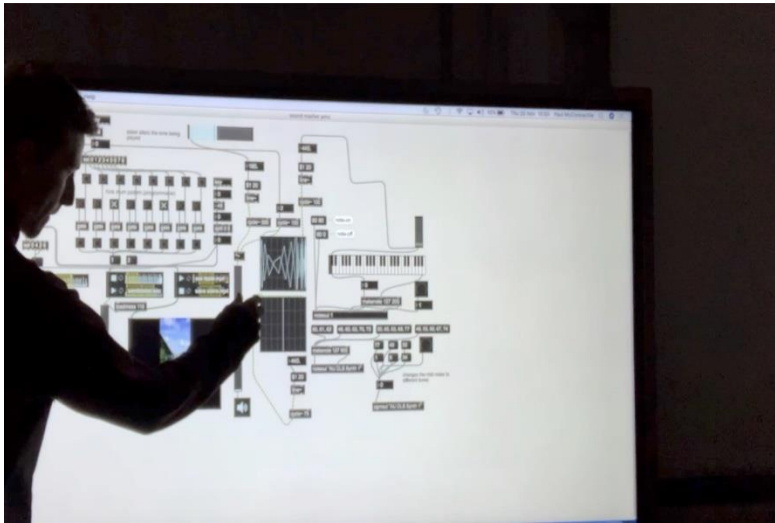


Figure 42  
Paul McConnachie  
*Sounding Out Interactively* (2018)  
Video Still

Student interacting with the program by using fingers to click, drag and pull to create sounds.



Figure 43  
Paul McConnachie  
*Sounding Out Interactively* (2018)  
Video Still



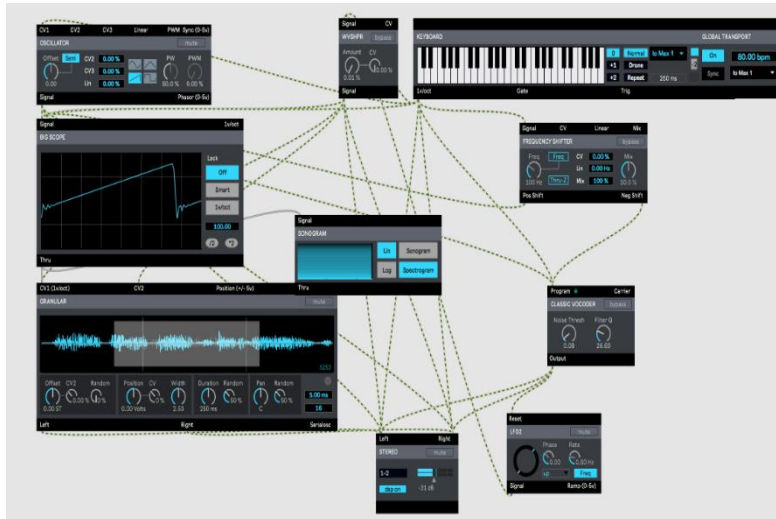


Figure 45  
Paul McConnachie  
*Listening Voice* (2018)  
Screenshot

Within Max, there is an additional software program called *Beap*, initially developed as a pedagogical tool for the Electronic Production and Design students at Berklee College of Music in Boston. The *Beap* library is a collection of modules that emulate the function and signalling of hardware modular synthesizers. Like the Max environment, *Beap* is used in both Max and Max for Live and is cross compatible. In *Listening Voice*, ten different modules are added for creating a patch that emulates a voice as if vocoded<sup>3</sup>. The intention was to produce a vocal effect without applying a voice; words are heard but difficult to interpret, so a brain is deceived into imagining; it is hearing the English language being spoken. The actuality is the *Beap* modules collaborating with granular synthesis and LFO's to make *Listening Voice* operate.

<sup>3</sup> <http://www.roland.co.uk/blog/what-is-a-vocoder/>

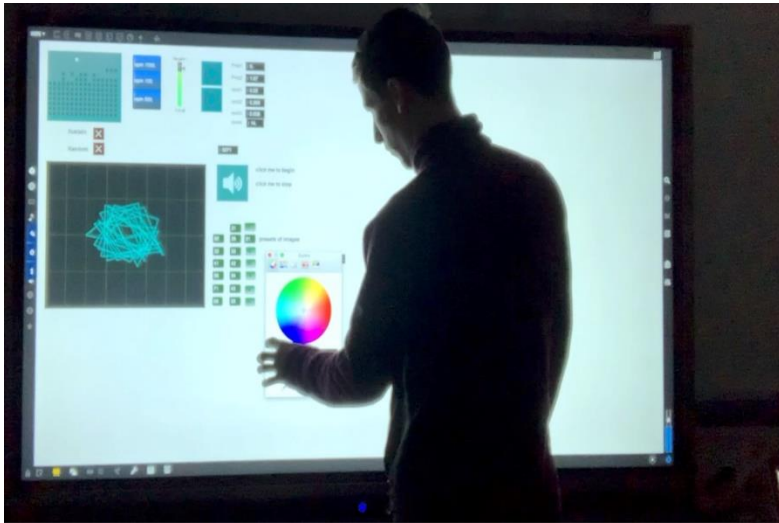


Figure 46  
Paul McConnachie  
*Signal Loop* (2018)  
Video Still



Figure 47  
Paul McConnachie  
*Signal Loop* (2018)  
Video Still

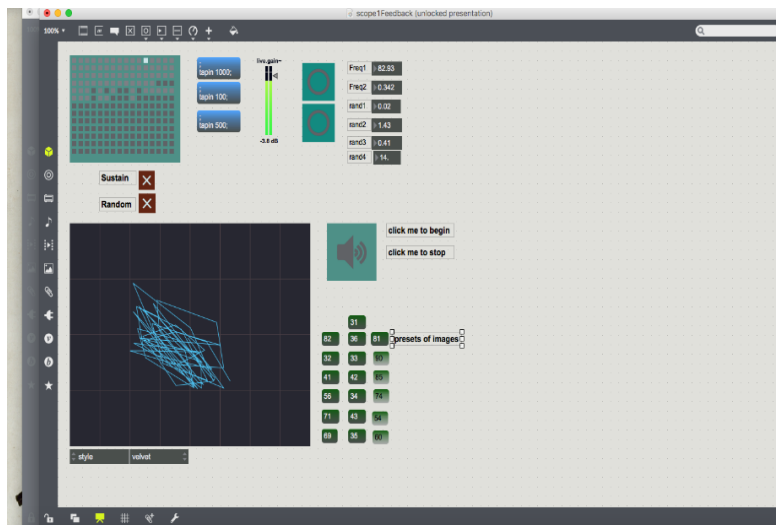


Figure 48  
 Paul McConnachie  
*Signal Loop* (2018)  
 Screenshot

*Signal Loop* provides feedback from the audio driver and outputs sine sounds. This patch exhibits sound like a series of shapes, geometric and randomised. Designed interactively so users can click, drag and change parameters including numbers and preset sound files already programmed and stored. Figure 41 is in presentation mode to allow anyone who has minimal knowledge of the Max software to become overwhelmed by what is displayed. The aim of this patch is another factor to visualise sound, building on Carsten Nicolai and Ryoji Ikeda's *cyclo*. (2000) sound drawings<sup>4</sup>.

Highlighting the Fourier analysis of frequencies and manipulated through various wave effects including, Sawtooth, square, sine, pulse and triangle. Users can see a visualisation of the shapes the sounds make when processed through a Max object called 'Scope'. The scope is designed to permit users to see sound visually employing geometric shapes. Dependent on the pitch and frequency of the sounds determines the shape. Various presets of shapes are attached due to the interesting purposes formulated from the live sound analysis. This patch operates the various sound waves by adding them concomitantly and multiplying the signals. Attaching a Sawtooth wave and combining it with a triangle wave at varying frequencies, creates sound events.

<sup>4</sup> <http://www.ryojiikeda.com/project/cyclo/>

## Appendix III

### Interviews with Artists

The original email interviews carried out with artists, academics and authors who are currently in the field of sonic studies are listed below. The only editing has been to change the font style and name to Arial size 12. All punctuation and grammatical submissions are in their original form.

#### Nicolas Bernier<sup>5</sup>

Nicolas Bernier produces audio-visual performances and installations, aiming to shape a dialogue amid the sound and solid matter. Formed by work within the areas of cinema, literature, dance and theatre companies, his language combines elements of music, photography, design, science, video art, architecture, light design and scenography. Amid this eclecticism, his artistic interests remain constant: the balance amongst the cerebral, sensual, among organic sources, and digital processing. An awardee of the prestigious *Golden Nica at Prix Ars Electronica* (2013) (Austria), his work is widely recognized, presented all over the world including, SONAR (Spain), (Canada), Elektra (Canada), ZKM (Germany), Transmediale (Germany) and LABORal (Spain). His sound compositions are widely published on electronic music labels: 901 Editions (Italy), LINE (US), leerraum (Switzerland), Entr'acte (UK) and empreintes DIGITALes (Québec).

Paul McConnachie interview with Nicolas Bernier

Subject: Sound and Intermedia art

#### **PMC: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**NB:** As an artist, genre and classification is not something I am thinking about. That said, even if I officially come from the music field I prefer the term sound art because it doesn't tie me up with the burden of the music history. The term sound art puts it clearly that one is doing art, which is not clearly the case with what is associated with the term music today. If one is work in the music field, it doesn't imply that he his in the art field? You can do advertising music, elevator music, video game music, etc. (not to

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<sup>5</sup> <http://www.nicolasbernier.com/page/about.htm>

mention that music is generally understood as being a support for another form).

On a really pragmatically level, if I am telling someone that «I am doing music, I will of course be asked what kind of music, what instrument are you playing? which are questions that are not asked when you say you are making sound art. You will then be asked what kind of material are you working with, what kind of space or setup do you use which are questions that appeared to be more related to my practice.

Generally, sound artist will think on different terms than music. The sound art will often be conceptual, or related to the invention of an audio-based process, with not much sense of construction in time, which usually is the focus of music composition. I think I personally stand between sound art and music, borrowing to each discipline.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**NB:** My only advice would be to stay away from any strategies!

**PMc: Sound artworks are often described as being immersive. Within your own practice, is this an objective?**

**NB:** It is not an objective, only a fact: sound is immersive by definition as it is flowing everywhere around us. But immersion is not necessarily a focus in my work. I think that even in stereo (as opposed to surround) can sound immersive with the right sound in the right space played at the right intensity.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

**NB:** Actually, I don't think we can state that affirmation for the current artist as sound art have been tied up to visual since his inception, whether you think of Luigi Russolo, Fluxus artists, Milan Knížák or Christian Marclay. Another misconception would be to think about music as being non-visual. Orchestral music concert, for instance, is quite visual. A body on a stage is visual indeed.

But for sure, the advent of the computer has accelerated the multidisciplinary skills of a lot of people, which makes it maybe easier to create multidisciplinary work. Sound artist can easily work with photo or video and vice versa. But we could also see a lack of imagination with the



ubiquity of the screen-based audiovisual performance and installation, as if the easiness of using the screen have forced the use of this medium, forced to make everything visual, sometimes weakening the sound element of a piece for instance in favor of the visual.

**PMc: Can music and sound art have a distinct separation in terms of context?**

**NB:** Like I said above, I think that the main distinction between sound art and music is form. Sound art will often be presented in a gallery, often more as installation where the development in time is not the main focus. It will be more about creating a state that having an introduction, a development and a conclusion, while music will be an art of time, of fluctuating time (again, most of the time, and there is of course blurry lines between music and sound art).

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**NB:** I can only give my point of view on what was happening in Montreal because I was traveling less intensively in those years. But there was indeed a cultural shift at this time here. A really interesting one that I think has been lost around 2008. The shift was this: young people we're listening to « instrumental » music in the sense of music without words or signing. The main reason for that, as I see it, was the advent of post-rock, namely with bands like Godspeed You! Black Emperor, Mogwai or Fly Pan Am. Used to more experimental music, this generation easily embraced the proliferation of the resurgence of laptop electronic music. That was great! I felt people we're opening their ears to sound, to texture, without finding it weird that there was no singing. But then Arcade Fire arrived and all the kids went back to indie, this paradigm shift was destroyed in a matter of months (and I have nothing against the music of Arcade Fire or indie rock which is actually my kind of music). At least this is my analysis of the Montreal case.

**PMc: What is the future of Sound Art in the 21<sup>st</sup> century?**

**NB:** Sound being considered as art, being globally understood by an art form as much as painting or cinema is for instance. Sound composition made of textures not being considered as weird by most of the people.

**PMc: Is a sound work complete when a listener interacts with the work?**

**NB:** Interaction is not my cup of tea so I'll let this one to the experts.

**PMc:** **How do you get an audience to listen actively to sound works (can you suggest any strategies)?**

**NB:** Is this not a repetition of question no. 2? Because we insist here, so even if I said earlier that the only strategy would be to not have any strategies, I would say that, for me, the best strategy is to borrow to music. That is: to think about form, about evolution in time, about contrast and density of events and material. In my approach at least, this is the key.

**PMc:** **Can you describe what intermedia art is and how do you contextualize it in today's current art climate?**

**NB:** When we talk of intermedia, I understand a multidisciplinary work making use of several media, which have been the case since the beginning of time, from the first music instrument to Greek theatre and so forth. Several disciplines focusing on a work where each discipline can be seen distinctively even though assembled together.

**NB:** What is maybe more present in our zeitgeist would be transdisciplinarity where the line between the disciplines could not be distinctly draw. For instance, when one artist is working alone photography, video, sound and architecture to make a work blending all these disciplines would be transdisciplinary. I am thinking of Herman Kolgen for instance, or Iannis Xenakis, Hiroaki Umeda, Ryoiochi Kurokawa, Artificiel or Rafael Lozano-Hemmer. This is a really simple thought, but this is of course probably due the proliferation of the micro-computing that led to the return of our DIY era (which is not the first explosion of the DIY in history).

**PMc:** **Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?**

**NB:** Yes of course, sound artist are included in this globalization like everybody else — not only artists. Sharing of knowledge and information is, at least for now, quite accessible to the one who can afford the Internet.

**NB:** There is new pathways, but “new” is always being tributary of the “old”. One shall always remember that we are constructing on the past and that nothing fall out from nowhere. The question would then be: even if the pathway is different, like working from analogue circuitry to digital processing, will the result be that different? Maybe, maybe not. And

another question would be: does those multiple pathways necessarily means that there will be that multiple type of works? Is our era really an era of originality or rather an era of homogenization due, for instance, to the fact that a lot of tools or shared by a lot of people or the fact with this globalization awkwardly come quite a bit of uniformization and conservatism?

Sorry for replying with a question but you will understand that I am just an artist, not a art philosopher so there is question I can ask but I wouldn't try to formalize some answers in that field. At least, not without thinking about it really seriously.

**PMc: Can you expand on the importance of space when presenting an intermedia piece for public consumption?**

**NB:** It depends if we are speaking about the sounding/resonant space, the space within the sound itself or about the physical/architectural space? I could possibly answer but the question should be more specific.

**PMc: Increased communication, travel and migration are affecting the way we live. How do you think this is affecting contemporary intermedia artists?**

**NB:** Where I am a little bit dubious about the effect of globalization on the artistic work itself, here I think we can say that the effect of globalized electronic communication is crucial. Because today's artists that are working with ease with the micro-electronic world, they've been able to quickly build important virtual networks in the 90's. The electronic arts festival of those days was often presenting video-based piece that didn't require the presence of the artists. But from these network, a number of important festival appeared, and that brought the attention from the public, the press and the funders with the help of which those events could then have the funds to invite artist in person and commissioned works, then artist would more often meet in person, then collaborative project are created, etc., etc.. All of this due to the ease of communication.

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?**

**NB:** I think art always been multi-dimensional. From the ancient Greek theatre, to Bauhaus, to Xenakis/Le Corbusier, to Chris Salter today, this multi-dimensionality brilliantly mixing text, gesture, sound, architecture and image seems to have been there since the beginning. Actually, I can't

really think of an art form that is “pure” because a phenomenologic object will always affect multiple senses. Sound is not just hearing but sensing through the body; dance is not just about gesture but visual composition; video is not just about video but space (inner space of the frame and outer space where the work is presented) etc.

I would even say that to consider sound as the perfect companion of the multi/inter-disciplinary is to weaken sound as an art form that should stand by itself. Sound and music being ubiquitous, most of the people will think of sound as accompanying something another art form: dance, cinema, theatre, video, visual art, etc. I would even praise for more “purity” in the arts (even if I just said that pure purity doesn’t exist): sound art with only sound, dance with only dance, no *mise en scène*, no music, no light.

## Robert Henke<sup>6</sup>

Robert B. Henke (1969) is a German computer music artist operating in the realms of audio-visual installation, music and performance. He was born in Munich, Germany, and lives in Berlin. Originating from an engineering environment, Henke is captivated by the attraction of technical objects. Developing his instruments and algorithms is a fundamental part of his creative method. His substances are computer-generated, sound and images, field recordings, photography and light, transformed, re-arranged and accentuated by precise rules, real-time interaction and controlled random movements. Many of his works use multiple channels of audio or are explicitly formulated for unique locations and their singular properties. Henke is currently investigating the language of high power lasers in his installations and performances. Robert Henke is also a co-developer of the music software Ableton Live, with Gerhard Behles. Since 1995, he has performed electronic music under the name *Monolake*, which he established in collaboration with Gerhard Behles.

Paul McConnachie interview with Robert Henke

Subject: Sound and Intermedia art

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**RH:** Categories are more for curators, collectors, critics and other people involved in the arts market and not so much by the artists themselves. I know a lot of artists who struggle with explaining their work in such a restricted way and prefer their work not to be labelled at all.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**RH:** That's quite simple and the hardest at the same time: doing something that is unique and interesting. However, what I often find problematic in sound related arts is the lack of understanding from curators, museums and critic about the interaction with sound and the space in which the work is presented. If exhibitions with sound art fail, then mostly because the works are presented wrong. No curator would put a painting in bright sunlight or in a room with red flashing light. Presenting sound art in noisy, reverberant spaces or five pieces in one room is not as uncommon as it should be.

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<sup>6</sup> [https://en.wikipedia.org/wiki/Robert\\_Henke](https://en.wikipedia.org/wiki/Robert_Henke)

**PMc: Sound artworks are often described as being immersive. Within your own practice, is this an objective?**

**RH:** It is an essential quality I'd like to achieve in some of my works.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

**RH:** That's exactly the problem with the definition of 'sound art'. I can only speak for myself here: It simply makes sense at times to work with a visual component or focus entirely on a visual idea. Why should I limit myself to work only with the abstract concept of pure sound whilst the combination of sound and image is such a powerful way of expression?

**PMc: Can music and sound art have a distinct separation in terms of context?**

**RH:** Practically no. The boundaries are not clear anymore, and that's evident both in musical practice as well as in let's say film sound design. The distinction is a function of context, not of content.

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**RH:** I believe the cultural shift was simply a result of the broad availability of technology. Around 1997 it started to become possible to create sound entirely on a laptop and to edit sound digitally without having an expensive studio. This enabled a whole new generation of emerging artists to create sound based works.

**PMc: What is the future of Sound Art in the 21st century?**

**RH:** Working with sound did become another possible way of artistic expression, just like painting, photography, theater. It is there as a technique and it can be further explored.

**PMc: Is a sound work complete when a listener interacts with the work?**

**RH:** The work is complete when the artist believes it is. If for the artist the interaction with the audience is essential, then it shall be, but there is no general rule about what defines an (artistic) work as complete.

**PMc: How do you get an audience to listen actively to sound works (can you suggest any strategies)?**

**RH:** The key is the quality and care of the presentation. It starts with basic practical considerations: Where is the audience placed in regards to the position of loudspeakers? Can they enjoy the presentation in a comfortable way? Is there e.g. unwanted visual distraction? Do I want them to focus on a performer or on the sonic result, and if the later how can i move the focus away from the performer (e.g., by playing in darkness). Can I provide an experience that goes beyond of what can be enjoyed at home and that in itself already changes the perception (e.g. a multiple speaker immersive setup, a room with a specific interesting acoustics, a 'neutral' white cube situation). And then there is volume, but that's something I personally find very cheap. It is always easy to be 'overwhelming' if you are extremely loud. Creating permanent hearing loss should not be the main focus of sound art.

**PMc:** Can you describe what intermedia art is and how do you contextualize it in today's current art climate?

**RH:** I am very bad in finding definitions.

**PMc:** Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?

**RH:** Can you provide me with a link to the text in which Nicolas Bourriaud discusses this issue? That would be helpful.

**PMc:** Can you expand on the importance of space when presenting an intermedia piece for public consumption?

**RH:** see answers above.

**PMc:** Increased communication, travel and migration are affecting the way we live. How do you think this is affecting contemporary intermedia artists?

**RH:** On the positive side, there is much more exchange of ideas, there is a much wider ability to discover other artists and to stay informed about global developments in this field. And that inevitably leads to the massive downside of normalization and a loss of regional uniqueness. That can be perfectly observed in dance music culture, where certain styles are copied again and again to satisfy a global demand for such a unified experience. It can also be observed by the growing number of international audiovisual festivals, basically all showing the same group of artists again and again. Since I am one of them, I benefit from it, just writing this email from Santiago de Chile, having been in Peru before. However, it is more than slightly absurd. Whilst being in Lima, Peru I just noticed that e.g. Herman

Kolgen is going to have a show there soon. I think I met him more this year than some of my best friends, because we circulate in that global audiovisual art scene. It all became a market, with the usual mechanics of it. Standards, markets, strategies are part of the art business, but not a good thing for the development of new artistic expression, they are actually oppressive.

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?**

**RH:** I certainly do. It comes back to my initial hesitation to label sound related works as 'sound art'. It is artistic expression that includes sound as a possible means of expression and that's it



A follow up email interview with Robert Henke took place in November 2017.

Paul McConnachie interview with Robert Henke

Subject: Follow up questions relating to Sound and Intermedia art

**PMc: I am interested in how your creative process begins both in sound works and visual works. How does your process start and how do you end up creating the work you do?**

**RH:** Start can be different things. Often I am invited to do e.g. a visual work for a museum or gallery. I visit the space and try to come up with an idea that fits the physical space but also the concept of the planned event. Other starting point can be a technical process i want to explore, like a specific piece of hardware, or a mathematical concept, or working with a specific material. Very often, the process therefor starts on paper, with a notes, sketches, and then I test things and either the initial results are promising and i continue or they lead me to a different route. The end is very often actually defined simply by a deadline. Because every work can be refined for ever. If I have a fixed deadline, I can define smaller goals with that time frame, to ensure i am not getting stuck with an insignificant detail too long.

**PMc: With regard to your own practice what are your intentions with your visual and audio works?**

**RH:** Most important is the creation of an 'experience', an event which triggers thoughts and emotions, that transforms mental, temporal and physical spaces and their perception. This can be as simple as being delighted by a good groove or sound, and it can be as complex as the satisfaction to listen, watch and understand how a complex process unfolds in an installation. Everything else is a secondary effect, but also very important: A concert or an installation is always also a social process, and a statement about cultural and even political ideas. Thus, I do spend a lot time thinking about how a work is presented and its context. The other end is that my intention with each single work is to overcome previous limits of my skills, to learn new things, and to expand my knowledge and craft.

**PMc: Do you know who your audience is when you are creating sound/artworks?**

**RH:** I prefer scenarios, where i can at least anticipate what audience I am going to have. It helps shaping the work in a way that ensures a 'working communication' with the audience. It does not necessarily imply pleasing them in every aspect, that would be too little of a challenge, but to make sure there is a common ground from which to depart. But part of the joy of

working in the arts is, that there is a certain amount of unpredictability involved and that sometimes the most inspiring situations happen when there is a mismatch between expectation and result which enforces a different level of engagement.

**PMc: Are there any other technologies you use other than Ableton and Max and how do you integrate them into your practice?**

**RH:** well, obviously there are my lasers, which are the medium i decided to explore for most of my visual works. They are controlled by my own Max patches, though. For sound creation in the studio I also rely on a small collection of older and not so old hardware synthesisers and effects, including what I would consider medium sized modular synthesis rack. I try to work with a reasonably small setup of things, because I believe the main challenge at the moment is to define a personal artistic practice centred around a limited palette of options, carefully chosen from the abundance of what is available and possible.

**PMc: What type of engagement do you want your audience to have with your works?**

**RH:** that depends on the type of work. In the museum i hope i can keep the audience interested for an extended period of time, just because what they hear and see wants them to stay. In a club i of course like people to dance, and when I perform in a theatre I want them to be amazed and surprised for the duration of the piece, so that when it is finished they feel inspired.

**PMc: It has been suggested that we are in an age of occularcentrism. I would like your views on a new methodology for sound in the 21st century? What does visual listening/auditory seeing mean to you?**

**RH:** I am not sure about all those labels, I do not need to find a complete theory about it all in my artistic practise. Of course I make up my mind what succession of shapes and sounds I explore in my audiovisual works, but I do not derive my working practise from a theory, it is the other way round, I explore my medium in a very naive practical way, and whilst doing so I discover underlying themes. Then I create more material informed by that experience. In some of my works, sound and vision are highly synchronised, and I perceive them as audiovisual 'events' with which compose, in other works, a visual experience suggest a certain type of sonic counterpoint or the other way round.

**PMc: What does it mean to listen?**

**RH:** I noticed something that i find really disturbing: news videos or documentations, where people say very important things, for instance

talking about the effects of the hurricane in Puerto Rico, and who ever made the video decided to added a generic music background with drums and strings etc. That's the opposite of 'to listen', neither to the person speaking, nor to the non-music in the background.

## Linda Ioanna Kouvaras<sup>7</sup>

Linda Ioanna Kouvaras (1960) is a Melbourne-based composer with knowledge in Punk/New Wave. Her productions investigate genre mixing, and focused on vocals and piano music, are released on ABC Records and Move Records. Kouvaras is also a musicologist at the Melbourne Conservatorium of Music of the University of Melbourne. Her investigation interests incorporate Australian music and gender. *Loading the Silence: Australian Sound Art in the Post-Digital Age* was distributed by Ashgate in 2013 and earned the Rebecca Coyle Publication Prize of 2014. She is one of the compilers of the academic journal, *Current Issues in Music*.

Paul McConnachie interview with Linda Ioanna Kouvaras

Subject: Sound and Intermedia art

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**LK:** I think it deserves its own genre labelling as I see it quite distinct from other artforms.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**LK:** A point of reference, perhaps, that's readily communicable; explanatory written blurbs/talks

**PMc: Sound artworks are often described as being immersive. Can you identify any art works that satisfy this description?**

**LK:** Too many to name – but the work of Australian artists Sonia Leber and David Chesworth is often immersive, so is Ros Bandt's.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

**LK:** I think the point is artists are seeking to break down this 'dichotomy'; one of postmodernism's missions is dissolving barriers between artforms and even art & life, and as my book *Loading the Silence: Australian Sound Art in the Post-Digital World* argues ☺, sound art is postmodernism's exemplar.

**PMc: Can music and sound art have a distinct separation in terms of context?**

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<sup>7</sup> [https://en.wikipedia.org/wiki/Linda\\_Kouvaras](https://en.wikipedia.org/wiki/Linda_Kouvaras)

**LK:** Sure! Depends on audience expectations, marketing... classical concerts involving a well-tuned grand piano would be unwise if staged outdoors... an immersive sound artwork might not 'work' on a massive concert hall stage.

**PMc:** My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?

**LK:** Again, as my book starts to explore, I perceive a post-postmodern range of expression – what I call the altermodern – emerging, but am not sure that this is due to proliferation of exhibitions – more a 'natural' historical current.

**PMc:** How would a sound artist keep the audience interested in their work and not distracted by other exhibits?

**LK:** I don't know how to answer this question. If you mean, other exhibits in the same room/venue, then I'd suggest hoping the work is strong enough to hold engagement but I can't see how one can prescribe this...

**PMc:** What is the future of Intermedia Art in the 21<sup>st</sup> century?

**LK:** Highly dependent on technology, the state of the world (stability, govt. support for arts), and up to artists!

**PMc:** Is a sound work complete when a listener interacts with the work?

**LK:** Sometimes but not nec'sly.[sic]

**PMc:** How do you get an audience to listen actively to sound works (can you suggest any strategies)?

**LK:** See above; already canvassed.

**PMc:** Can you describe what intermedia art is and how do you contextualize it in today's current art climate?

**LK:** Art that involves more than 'just' sound. As mentioned above, and in my book, pmo responds to the world, sound art is the most 'acute' expression here, being able to use 'the world' in its materials.

**PMc:** Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?

**LK:** Ah yes: he also likes 'altermodern'; he was referring to visual artists. I found his def'n rather narrow, and see a larger picture (final chapter of my book...)

**PMc:** Can you expand on the importance of space when presenting an intermedia piece for public consumption?

**LK:** Is all-important – one needs to feel the space as much as hear the sounds.

**PMc:** Increased communication, travel and migration are affecting the way we live. How do you think this is affecting contemporary intermedia artists?

**LK:** Only as much as my previous points about pomo, post-pomo, reflecting the world, exploring the medium.

**PMc:** I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?

**LK:** I can certainly concur with it!

## Ulf Langheinrich<sup>8</sup>

In 1991, Ulf and Kurt Hentschlaeger founded the Media-Art duet *Granular-Synthesis* and have realised for more than a decade a number of international large-scale projects including *Modell5*, *Noisegate* and *Pol*. They exhibited and performed at the Museum for applied Arts ICA London, Hull Time based Art, MAK Vienna, Museums of Contemporary Arts of Lyons, Montreal and Seoul, The Stedelijk Museum, Kunstverein Hanover, ISEA Montreal and Liverpool, ICC Tokyo, Creative Time New York and the Austrian Pavilion at the Venice Biennial 2001. *Granular-Synthesis* received an Austrian state stipendium, a PS1 stipendium and the first prize of the International Biennial in Nagoya.

Paul McConnachie interview with Ulf Langheinrich

Subject: Sound and Intermedia art

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**UL:** well justified, in a way it is music, yes, however the starting point is not necessarily the development of sonic events over time and in this regard some sort of performative event, but-among others- the interaction of an audience with sonic setups, their specialization in space, or the sonic properties of objects exhibited, in general the space rather than time as the main focus of the artist.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**UL:** not really, i simply trust this to be the case, focusing on this aspect may result in a somewhat didactic approach. What raises and keeps attention is an enigma, a depth that unfolds and happens or doesn't, but cannot be made.

**PMc: Sound artworks are often described as being immersive. Within your own practice, is this the main objective?**

**UL:** It's not an objective, yet it happens always. In general -and this is true for the attention strategies as well-, the core of art is not where the intention and strategies are, but beyond the artist's objectives.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

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<sup>8</sup> <https://www.ulflangheinrich.com/biography>

**UL:** In general, categories are inventions, derived from the notion of allocation of endless and endlessly fluid (let's put the quantum constant aside for this argument) existence to a quantized description.

**PMc: Can music and sound art have a distinct separation in terms of context?**

**UL:** The term sound art is the attempt to establish such distinction, the argument is described above.

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**UL:** I have never been concerned with this question

**PMc: What is the future of Sound Art in the 21<sup>st</sup> century?**

**UL:** I don't know?

**PMc: Is a sound work complete when a listener interacts with the work?**

**UL:** this can only be answered in regard to a specific work and the ambitions of the artist, especially if the artist considers interaction as an essential aspect of the work, further more if interaction is a prerequisite to make anything happen at all.

**PMc: How do you get an audience to listen actively to sound works (can you suggest any strategies)?**

**UL:** Again, I can't, nor do I have this as a task in my work. I simply know that this will happen once I know it. If there is something that could be interpreted as a strategy: I have to be convinced, I have to be fascinated. whenever I listen to sound I do not listen "active" myself, as a term that distinguishes between the normal good enough for the average and the special, necessary for the delicious and supreme. I cannot not listen. most music annoys me, if for instance a taxi-driver listens to radio-music I ask to mute the radio.

If work demands me to listen active, translating as I should pay full attention while I am not captivated, I won't do this, since I don't believe this exercise would do any good. Frankly such a request is one of the big misunderstandings in art in general, that the artist may request something more because of the arts "better"-ness in comparison to the lower forms of human Endeavour. The assumption of the ability to make us better through art. If that was the case, Art shouldn't already fail on step 1, to grab my attention and excuse this with its advanced state not accessible if not extra work of attention is invested.



**PMc: Can you describe what intermedia art is and how do you contextualize it in today's current art climate?**

**UL:** It is yet another attempt to find satisfaction in completeness. The completeness of a theoretical system that doesn't like creations going astray from the theory, Hence, a new box is invented. The need to create such a box is however, not a prove of the advanced, rebelish, modern or superior nature of the artworks that the box was created for.

**PMc: Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?**

**UL:** I don't know

**PMc: Can you expand on the importance of space when presenting an inter-media piece for public consumption?**

**UL:** Space was already discussed earlier.

I very much agree to the term consumption, and this includes work asking for- or even happening only if there is- interactive contribution. Interactivity is eventually a form of a "consumable", defined and labelled with a price system, as such offered on a market, may it be the off market, or the off-off market; offered, assessed in terms of market value-categories like all aspects of human relationship, including our body, age, sexuality and soul. Cigarettes are nowadays more subversive than any kind of art, because cigarettes are defined as not suitable for self-optimization. Art is. It is a market-offer that is considered to make us better people and artist believe they are better people, maybe not recognized, but in possession of this "better"-ness. They offer it to those who want to be enlightened and to be upgraded by a better entertainment product, a better object to own than the cheap, even if this "better"-ness is mainly provocation. Withstanding or understanding the boring or unbearable provocation elevates the consumer in a higher cast, an art connoisseur or an art "understander".

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?**

**UL:** I can agree that your position can be argued. However, I don't see any art having an advantage over another, I don't even see much point in such considerations. Yet, "satisfy" is the term, that triggers my interest, that supports my argument that art is a product. As such it is meant to do what every consumable product promises -and as an inherent quality- fails to do: to temporarily satisfy, while a constant state of greed, uneasiness

incompleteness and failure is present as a mass hypnosis. If there is anything that perhaps justifies artistic efforts, it is qualities that resonate and refer to the moment close to death: Waking up from the hypnosis can be a bitter moment, the only moment alive since early childhood. If there is anything beyond being consumable and meant to satisfy, that art is about, i believe it is to create glimpses of awakening.

In this regard, I find most art and its theoretical/marketing framework to be a smart, competitive, hopefully profitable but hopeless and futile endeavour.

## Annea Lockwood<sup>9</sup>

Born in New Zealand in 1939 and residing in the US since 1973, Annea Lockwood is recognised for her investigations of the rich world of natural acoustic sounds and situations, works ranging from sound art and installations, through to text-sound and performance art to concert music. Her music is performed in many venues and festivals including the Possibility of Action exhibition at MACBA Barcelona, De Ijsbreker, the Other Minds Festival-San Francisco, the Walker Art Centre, the American Century: 1950 – 2000 exhibition at the Whitney Museum, the Los Angeles County Museum, Queen Elizabeth Hall, the Westdeutscher Rundfunk, CNMAT Berkeley, the Asia-Pacific Festival, Donaufest 2006 Ulm, the Donau Festival Krems, the 7th Totally Huge New Music Festival Perth, Ear To The Earth Festival – New York and Sonic Acts XIII.

*A Sound Map of the Danube*, was performed in Germany, Austria and the USA. This is a surround 'sound map' of the entire Danube River, incorporating a wide variety of water, animal and underwater insect sounds, rocks from the riverbed and the voices of those whose lives are intimately connected to the river. Other current projects include *Ceci n'est pas un piano*, for piano, video and electronics commissioned by Jennifer Hymer; *Jitterbug*, commissioned by the Merce Cunningham Dance Company, a six-channel soundscape with two improvising musicians; and *In Our Name*, a collaboration with Thomas Buckner based on poems by prisoners in Guantánamo. She was a beneficiary of the 2007 Henry Cowell Award. Her music is published on CD and online on the Lovely Music, Ambitus, EM, XI, Rattle, Lorelt, and Pogus labels.

Paul McConnachie interview with Annea Lockwood

Subject: Sound and Intermedia art

### **PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**AL:** My first response was that such categories are thoroughly permeable and not easily distinguished, but then it occurred to me that there is still such a visual predominance in our culture that the term/category 'sound art' usefully throws the emphasis onto audio and off visual, at least a little. Although I recently had an opening, one of my sound maps, in a show which is focused on sound art, and a startling number of friends said, 'We came to see your work'.

Of the seven pieces in that show ('Foot Notes: On the Sensations of Tone', at Apex Art, NYC) every piece, except one by Chris Watson and

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<sup>9</sup> <https://www.annealockwood.com/biography/>

Robert Macfarlane, was either a video, and/or incorporated photographs, and mine (A Sound Map of the Housatonic River) incorporates a physical map. This seems normal - there are often virtually no distinct medium categories, something which the intermedia artists of the '60s established, I believe.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**AL:** This is one of the challenges I've always enjoyed. I like to draw people into listening for extended periods of time, since my installation works in particular aim to immerse listeners directly (more below) and they unfold gradually. So, I want people as relaxed as possible, sitting or lying down, rather than standing briefly. For the most recent work, a collaboration with Bob Bielecki titled 'Wild Energy', which was outdoors in a grove of trees, shrubs, brambles, we set up two hammocks, which induced peoples to listen over quite long periods of time. The piece is 46 mins and some stayed for the entire run, many seemed to keep listening well over 20 mins. The physical ease opens the body to the sound well, and encourages closer and closer listening. People said they felt that they were floating inside the sound and that the way their bodies were supported really helped to induce this well.

**AL:** A listener's sense of immersion in my sound fields is very important to me. For example, in my three sound maps of rivers, my aim for myself is to record in such a way that I begin to sense the nature of the river, through my mind, which tracks the intricate acoustic details, and my body, which is absorbing all those sound waves as vibration. My aim for you, as listener is as above and in addition, that this sort of immersion might lead to a recognition of no-separation between you and this river's energy.

**AL:** So it follows that I try to bring those sounds to you as directly as possible, in such a way that you are not aware of me as a presence in the work. I use no manipulation other than some EQ, sometimes a little reverb, often use slow cross-fades to avoid disturbing a listener's concentration, etc.

**AL:** As I may have suggested above, I don't see this as a dichotomy. The visual appearance of my recent installations is very important to me, in that it should complement the audio but never compete with it; but the emphasis is usually on creating a clean, uncluttered space. In other works I've used images projected behind musicians (the Lascaux paintings in Thousand Year Dreaming, for example), or the installations have included visuals: Conversations with the Ancestors includes objects owned by the old women whose lives the work presents, together with photographs I made of their hands, silk screened hangings carrying quotations from their interviews, because for people to be able to make physical contact with those women (through a tea-cup and saucer, a muffin tray, and other object), and picture them was integral to truly hearing their lives.

And I think this kind of integration is true of many people's practice and doesn't arise from perceiving the visual and the auditory as distinct – any more than our senses do as we move through our daily environments.

**AL:** Music and sound art each have a sort of temporal context: music tends to happen in a rather short period of time, (other than Satie's *Vexations* and its offspring of course, not to mention LaMonte Young), and generally on a specific date whereas sound art is often presented in spaces which allow for long periods – days, weeks, months and sometimes years, like O+A's installation, *Harmonic Bridge*, at MassMOCA. Music is not often structured interactively, in terms of listeners, whereas sound art is quite frequently and more easily lends itself to that, as with many of Liz Phillips' installations.

**AL:** In terms of physical/spatial context, distinctions have fallen away. Music is made in every possible environment and structure, as is sound art – which is truly liberating.

I don't have a response to this one, sorry.

Nor to this!

Yes, absolutely – the listener completes the work, I've always felt.

**AL:** I think I responded to this for question 3. But would like to add that any design, for the overall exhibition and also for individual works, which slows visitors down and interrupts the tendency to do a quick scan, is vital, perhaps especially for environmental sound works, where the tendency to identify a sound source superficially and move on is thoroughly conditioned just from the way we process ambient sound environments daily.

**AL:** This questions and nos. 11 and 13 are interesting but too generalized for me to be able to respond. For one thing, I tend to perceive the 'art climate' as many disparate climates with very different points of focus, dependent on their own cultures particularly, the basic nomadism of artists notwithstanding.

**AL:** I want to respond in a personal, rather than general way. Important to me are a sort of balance between the scale of the work and the size of the space. Some pieces seem made for intimacy, (*Conversations with the Ancestors*, for instance), others, such as *Wild Energy* with its solar oscillations, atmospheric whistlers, volcanic gas resonances etc., for expansiveness. The acoustics of the space are primary, of course, and since I don't like presenting my work through headphones, I enjoy playing with the ways in which a given space can enhance my sounds and create a sense of presence. And finally, there needs to be sufficient space for people to feel comfortable and just settle into listening, unimpeded.

**AL:** There are different forms of sound art, which is in any case a nicely loose term. Not all work is multi-media, but this is not a hard and fast practice choice either, if I understand your 'multi-dimensional' correctly. For many of the sound artists I know, some of their work is purely sound, some incorporates visual and kinetic streams, some is more documentary, arising out of the old film and video tradition, depending on what media the subject matter seems to need.

**AL:** The late video artist, Paul Ryan is a superb example of this. His body of work includes 'three-ing', which explores balance and relationship through direct contact in real-time; video without sound; video collaborations for which the sound comes from a very different medium; and work in which sound and image are closely intertwined. Much of his work is multi-dimensional though and could be of real interest to you if you haven't already encountered it. You can find a portal into it via Wikipedia – look under Paul Ryan, video artist.

## Francisco Lopez<sup>10</sup>

Francisco López is internationally acknowledged as one of the significant figures of the sound art and experimental music scene. For practically forty years, he has produced an extraordinary sonic universe, corporeal and iconoclastic, based on a profound listening of the world. He is destroying boundaries among industrial sounds and wilderness sound environments, moving with passion from the borders of perception to the most dreadful abyss of sonic power, proposing a blind, profound and transcendental listening, freed from the imperatives of information and open to sensory and spiritual augmentation. He has accomplished hundreds of concerts, projects with environmental recordings, workshops and sound installations in over seventy countries of the six continents. His extensive catalogue of sound pieces (with live and studio collaborations with hundreds of international artists) released by nearly 400 record labels / publishers worldwide. Awarded four times with honorary mentions at the competition of Ars Electronica Festival and is the recipient of the Quartz Award 2010 for the best sound anthology.

Paul McConnachie interview with Francisco Lopez

Subject: Sound and Intermedia art

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**FL:** Perhaps not very relevant for me artistically, but definitely crucial socio-politically, i.e., in terms of not being creatively and socially squeezed between the traditional categories of “music” and “art”.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**FL:** It's very simple: doing interesting work (or, should I say just not boring?).

**PMc: Sound artworks are often described as being immersive. Within your own practice, is this the primary goal?**

**FL:** For me immersion is not a goal but a medium for transcendence.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

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<sup>10</sup> <http://www.franciscolopez.net/>

**FL:** In most cases, unfortunately, just a superficial result of the bad influence from the “art” world (e.g., the classic speakers in a gallery space).

**PMc: Can music and sound art have a distinct separation in terms of context?**

**FL:** More in terms of ethics and aesthetics, I believe.

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**FL:** In my view, those exhibitions around the turn of the century were basically a disorganized, level 1 introduction of sound work to unaware artists and audiences from the visual and objectual art world. The problem is that fifteen years later they remain very similar.

**PMc: How would a sound artist keep the audience interested in their work and not distracted by other exhibits?**

**FL:** Same answer as in question 2.

**PMc: What is the future of Sound Art in the 21st century?**

**FL:** I have no idea, sorry.

**PMc: Is a sound work complete when a listener interacts with the work?**

**FL:** When listening has dedication –more than interaction- the sound work takes place –not only is complete. In fact, that happens without any artist in the process.

**PMc: How do you get an audience to listen actively to sound works (can you suggest any strategies)?**

**FL:** Same answer as in questions 2 and 7.

**PMc: Can you describe what intermedia art is and how do you contextualize it in today’s current art climate?**

**FL:** I don’t believe there’s such a thing as specific intermedia art. On any substantial level, all art is.

**PMc: Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between**



**multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?**

**FL:** Any artist since the Renaissance would perhaps fit into such a description.

**PMc: Can you expand on the importance of space when presenting an intermedia piece for public consumption?**

**FL:** For sound, space is not just important, but in most cases its matrix. But I'm personally not interested in "intermedia" nor "public consumption".

**PMc: Increased communication, travel and migration are affecting the way we live. How do you think this is affecting contemporary intermedia artists?**

**FL:** In most cases, surprisingly very little: you now hear the same globalized clichés coming from all parts of the world.

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?**

**FL:** Sound art (whatever that is) by itself is massively "multi-dimensional", "inter-related", etc. No other "elements" are needed.

Francisco carried out a further email interview in November 2017.

**PMc: I am interested in how your creative process begins both in sound works and visual works. How does your process start and how do you end up creating the work you do?**

**FL:** I don't have a system or a procedure I could summarize in those terms. Too many elements involved, not only sonic but experiential, emotional, etc...

**PMc: With regard to your own practice what are your intentions with your sound works?**

**FL:** To produce a transcendental experience through sound as a spiritual gate.

**PMc: Do you know who your audience is when you are creating sound/artworks?**

**FL:** Not really. I strive to reach as wide an audience as possible.

**PMc: When performing do you create 'on the fly' or have you planned exactly how each performance goes in terms of what sounds you are using?**

**FL:** Neither of those exactly but something in between: something like a site-specific and equipment-specific live composition.

**PMc: What type of engagement do you want your audience to have with your works?**

**FL:** An absolute one! I believe music (or something substantial like it) is not created by producing sound but instead by an act of profound listening. That fundamental act of creation is thus in fact in the hands of the listener.

**PMc: If you could use any new technologies to further support what you do what would they be and why?**

**FL:** Future technology for live performance: self-organized swarms of controllable hovering speakers!

**PMc: It has been suggested that we are in an age of occularcentrism. I would like your views on a new methodology for sound in the 21st century?**

**FL:** According to McLuhan, that supposed age of occularcentrism started its decline decades ago. From my perspective, the most interesting and substantial developments for sonic/listening creative strategies are not related to current futile paradigms of resolution (3D, 4D, VR...) and information mapping (data 'sonification', 'sound visualization'...) but rather to the work with situations, conditions and expectations for listening or experiencing sound. That leads to a very eclectic and absolutely time-transversal imbrication of tools and concepts from very different ages. We don't need 'new technologies' as much as we need new ways of meaningfully imbricating the accumulated history of creative tools.

**PMc: What does visual listening/auditory seeing mean to you?**

**FL:** Despite its apparent look as synaesthesia, currently those expressions smell more like data mapping.

**PMc: What does it mean to listen?**

**FL:** Obviously many possible things, depending on context, intention, listener, etc. At a transcendent creative level -the one I'm more interested in- it means to engage in body and soul in an act of true creation.

## Paul Rooney<sup>11</sup>

Paul Rooney is an artist/musician based in Liverpool, who composes music with words “investigating the intersections of music, myth, memory and place” (The Wire magazine). His records and installations investigate the variable narratives that haunt commonplace objects or places, and the comically deceptive character of the narrative itself.

Paul McConnachie interview with Paul Rooney

Subject: Sound and Intermedia art

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**PR:** I must say at the outset that I do not regard myself as a sound artist, I am an artist who happens to use sound. I also use text, video film and other media. It seems odd to think any more about 'sound art', 'stone sculpture art' or any other type of art being separate from the general endeavour of art making or 'work involving culture'. There are artists who only use sound of course, but their work should still be seen in context with work of all sorts of media. I also think it is even undesirable to categorise any practice as either art, literature, or music. So, I am not even comfortable with the term 'artist' anymore, particularly given its art-world connotations.

**PMc: Can you suggest any strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**PR:** My own sound work often uses the ideas and practice of pop music and fairly accessible literary narrative elements. I am not interested in sound as an abstracted thing detached from an engaging musical or verbal experience (given that all sound is music and vice versa, but some of it is engaging and some of it isn't). In the same way that I find the texture of a stone statue a lot less interesting than what its form conveys.

**PMc: Sound artworks are often described as being immersive. Within your own practice is this an objective?**

**PR:** Not in terms of spacial Sonics, usually, though maybe in terms of music or narrative.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

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<sup>11</sup> <http://www.paulrooney.info/about-2/>

**PR:** See answer 1. I don't think a lot of artists want to compartmentalise what their art is doing. Almost as soon as film was invented, we came up with the idea of playing music along to it, so it is hard to see those two time based forms for instance – film and music, as they are experienced – as a dichotomy.

**PMc: Can music and sound art have a distinct separation in terms of context?**

**PR:** No. I think it is all sound, and all music. It is just that some of it is interesting, and some of it isn't.

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**PR:** I have never considered this, it may be true. I started making (pop musical) sound work in 1997, and there were other artists using music at this time (such as Susan Philipsz) so maybe there was a shift. After the pop cultural aspects of yBa work, there seemed to be a willingness to consider pop music in an art context again, in response to the pop-prohibition of minimalism and conceptual art (though this is a gross simplification). Possibly.

**PMc: What is the future of Sound Art in the 21st century?**

**PR:** As I don't think it should be regarded as a separate form it's hard to say!

**PMc: Is a sound work complete when a listener interacts with the work?**

**PR:** As with all art, it continues to require the next listener, and the next; never completing.

**PMc: How do you get an audience to listen actively to sound works (can you suggest any strategies)?**

**PR:** Aside from the tactic of using accessible forms that I outlined above, and though I don't do performances myself anymore, the best way to get the attention of a number of people at once is through making event based performative works, I would say. Or making work that can be played on mainstream radio (not easy but possible, usually involving accessible forms again).

**PMc: Can you describe what intermedia art is and how do you contextualize it in today's current art climate?**

**PR:** I can see why some Fluxus artists may have used the term, and how

it may have been useful in 1966, but it seems redundant now. Surely the term 'art' is enough?

**PMc: Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?**

**PR:** Again, see answer 1. They fit into it by making art with sound that engages with the changing world you speak of. In other words the content, the discourse, the experience, is primary, not whether it is sound or not.

**PMc: Can you expand on the importance of space when presenting an intermedia piece for public consumption?**

**PR:** It depends totally on the piece of work. Work I have made for radio or CD or vinyl record can be experienced anywhere in any space and through headphones, in the way much music can be, and does not rely on a specific spacial context at all. Because I often make narrative or spoken-word-based work I find that most gallery environments are unsuitable for displaying the work because of their bad acoustics, which often make the verbal content inaudible (aside from when carpets and sound dampening curtains are available, which is not often).

**PMc: Increased communication, travel and migration are affecting the way we live. How do you think this is affecting contemporary intermedia artists?**

**PR:** This is a huge question! I don't know where to start. To take one example, the internet has altered the way I am able to research work, in terms of information or access to other work, making the art making process a little less time consuming, and altering the character of the work itself I am sure. The overwhelming amount of material now available, however, can have its own problems.

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?**

**PR:** It is interesting how sound works operate in group exhibitions. If they are not contained within a sound-proof area, or even if they are, they often bleed out and affect the reception of many of the other works in the show. This is something that has to be managed, but can be used in a positive way. Either way it is worth being aware of and in some way in control of this. So yes, sound is the ideal inter-relating element.

## Dawn Scarfe<sup>12</sup>

Dawn Scarfe is an artist based in London operating with field recording, sound installation and performance. Her practice examines objects that seem to sound themselves such as resonating glasses, Aeolian wires and self-opening swell boxes. Dawn has collaborated with Ryoko Akama, Jem Finer, Jiyeon Kim and Volkhardt Müller. She operates with Sound Camp to coordinate Reveil: an annual crowdsourced live broadcast, which tracks the sound of the sunrise around the world for 24hrs. Her work has been aired on BBC Radio 3 and Resonance FM. She has exhibited at ZKM Karlsruhe, Q-02 Brussels and New Mart, Seoul. Residencies include Sound and Music's embedded programme with Forestry Commission England, MoKS Centre for Art and Social Practice, Estonia, TOPOS Exeter and Octopus Collective with Cumbria Wildlife Trust at South Walney, Cumbria. Commissions include Organ Reframed, Union Chapel, Continuous Drift, Dublin and Tonspur Museums Quartier Vienna.

Paul McConnachie interview with Dawn Scarfe

Subject: Sound and Intermedia art

Hi Paul,

I've tried to answer here but can develop any of the points further, just let me know which would be good to expand on. Or we can discuss by Skype sometime maybe?

Hope my responses are of some use/interest anyway. I tend to be as brief as possible and hope that's not an issue.

Good luck with the thesis.

All the best,

Dawn

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**DS:** I have mixed feelings about it. The term can be productive if it is used as a way of bringing people with different perspectives and experience together, but I'm less interested in the kind of debates that emerge when people try and define what sound art is or should be.

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<sup>12</sup> <https://www.cafeoto.co.uk/artists/dawn-scarfe/>

**PMc: Can you suggest any specific listening strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**DS:** I find it helpful to think about the kind of sound materials used, how they are arranged temporally and spatially, and whether there is a relationship with the acoustics of the live situation or not. Then over time I might listen for a sense of distinct sections, whether there are elements of repetition, contrast or gradual progression between these. There is also the question of what the work is exploring and how successful it is in doing so.

**PMc: Sound artworks are often described as being immersive. Within your own practice is this an objective?**

**DS:** It depends on the work, but I'm usually more interested in dispersion, how recorded or transmitted sounds dissipate into new environments, seeming to blend or meld with their new surroundings.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

**DS:** If the visual and sonic elements are of equal importance then maybe we should be thinking in terms of mixing and blending rather than dichotomies that separate these different qualities.

**PMc: Can music and sound art have a distinct separation in terms of context?**

**DS:** That depends on who is doing the listening.

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**DS:** I think the idea of sound art seemed to gain currency around 2000 in the UK and US specifically.

**DS:** Douglas Kahn writes about this in terms of art market trends (see p. 3 [http://www.douglaskahn.com/writings/douglas\\_kahn-sound\\_art.pdf](http://www.douglaskahn.com/writings/douglas_kahn-sound_art.pdf)). It might have to do with practicalities: digital media was becoming more accessible, so it was easier to collect, share and edit sounds. Perhaps to add to that, there was a concern the immaterial nature of digital media. I remember David Toop writing in the Sonic Boom catalogue: 'our fingers no longer grip; they click and drag', as if emerging digital environments threatened our corporeal identity. Being invisible and of the air, sound seemed to be an appropriate medium through which to explore these concerns, for me at least.

**PMc: What is the future of listening in the 21st century from an artist's perspective and a listeners?**

**DS:** I don't like to generalise but I would hope that art schools continue to become more supportive of work in sound, I remember the message 10 years ago being something like: if you are interested in sound go to the Music dept.

I'm interested in how technological developments such as quieter electric vehicles could really impact on our experience of listening to the local environment. I've hardly been anywhere in the UK where it's not possible to hear a road.

**PMc: Is a sound work complete when a listener interacts with the work?**

**DS:** It depends on the intention of the artist and the form of the specific work.

**PMc: Can you describe what intermedia art is and how do you contextualize it in today's current art climate?**

**DS:** Well, to me it speaks of conceptual art, where the primary concern is with ideas and process rather than specific media outcomes or mastery of a particular medium in terms of 'craft'.

There is a sense that museums and galleries are encouraging us to experience all art is intermedia. For example, by commissioning sound pieces that respond to paintings, as a way of diversifying interpretation.

**PMc: Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?**

**DS:** Depends entirely on the sound artist, the kind of work they are making and how they share it. Some sound artists are concerned with getting a good recording, and not much beyond that.

**PMc: Can you expand on the importance of space (head, architectural and resonant) when presenting an intermedia piece for public consumption?**

**DS:** The 'space' of the work is all important, as it can completely change the experience of the material. I'm not that interested in making fixed media pieces like CDs as then you lose control of things like the volume of playback which can make all the difference in an installation.

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements**



**satisfies this interest, can you clarify if you agree with this statement or not?**

**DS:** It depends on the kind of sound art, there are so many people involved in producing it and theorising it, I don't like to generalise about 'sound art' as a whole.

## **Peter Stollery<sup>13</sup>**

Pete Stollery is a Professor of Electroacoustic Music and Composition. He studied at the University of Birmingham with Jonty Harrison and was a founding member of BEAST (Birmingham ElectroAcoustic Sound Theatre). His compositions are performed around the world at major festivals, and conferences and most works are available on CD. A solo DVD-A (Un Son Peut En Cacher Un Autre) was released in 2006 on empreintes DIGITALes, Montreal and a further CD published in 2011 (Scenes).

Paul McConnachie interview with Professor Peter Stollery

Subject: Sound and Intermedia art

**PMc: What are your thoughts on sound art being defined as a specific category in current art practice and theory?**

**PS:** At the moment, I self-identify as a sound artist or composer, depending on the activity with which I am involved – composer for the concert hall, CD and sound artist for installation, internet and non time-based work. So it's useful for me to have this separate term, but only speaking as a musician. I can't really answer as to whether it should be separated from other "arts".

**PMc: Can you suggest any specific listening strategies that a sound artist can employ to keep the audience engaged within their artwork?**

**PS:** I try to prepare my audiences before an event so that they are in the correct frame of mind to listen deeply. I often ask them to "take off their current pair of ears and replace them with a new, fresh pair" and to listen carefully, more carefully than they would normally do.

**PMc: Sound artworks are often described as being immersive. Within your own practice is this an objective?**

**PS:** In my concert music, certainly, as I will surround the audience with loudspeakers and sculpt (usually) stereo sound in 3D space. It is important that the listener appreciated this spatialisation. I never present music merely over two loudspeakers as this is not a dynamic listening environment.

**PMc: A lot of current sound artist's works are as important visually as they are auditory, can you expand on this dichotomy?**

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<sup>13</sup> <http://www.abdn.ac.uk/music/profiles/p.stollery>

**PS:** This is not really applicable to me as, mostly, I require the audience to undertake a total listening experience where the visual in the real world is not necessary. However, I do like to make sure that my performance space is clean and tidy and symmetrical.

**PMc: Can music and sound art have a distinct separation in terms of context?**

**PS:** Yes – see 1 above.

**PMc: My interest is in sound art post year 2000. Do you think there was a cultural shift at this time due to the proliferation of exhibitions occurring at this time?**

**PS:** I didn't perceive this myself, perhaps it is more relevant to the non-musical world, but the proliferation of sound-based project on the internet mid-90s was more of a shift for me.

**PMc: What is the future of listening in the 21<sup>st</sup> century from an artist's perspective and a listeners?**

**PS:** We are in dire straits. The dominance of the visual over the aural has increased slowly over the past few thousand years; all that time ago we would listen intently to sounds in the forest in order to locate the current position of our dinner and then, using our eyes, would seek out the animal to kill it. Now, mostly, we just wander around the supermarket looking for it whilst listening to our iPods. We've forgotten how to use our ears – we've forgotten how to listen. Consequently, focussed listening for many has become a rare and often difficult activity.

**PMc: Is a sound work complete when a listener interacts with the work?**

**PS:** Yes, and only when this happens.

**PMc: Can you describe what intermedia art is and how do you contextualize it in today's current art climate?**

**PS:** Art where two or more disciplines collide to produce something which is multifaceted.

**PMc: Nicolas Bourriaud discusses how artists are responding to a new globalized perception and how they traverse a cultural landscape, saturated with signs and create new pathways between multiple formats of expression and communication. Does the sound artist fit into this explanation? If so, how?**

**PS:** Not sure how to answer this really but I guess this might be about identity and expression? If so, in my own case, I am a global sound artist in that I can compose using sounds from wherever I find myself in the world, but I am most at home when I am composing sounds in the part of the world where I have lived for nearly half of my life, the northeast of Scotland.

**PMc: Can you expand on the importance of space (head, architectural and resonant) when presenting an intermedia piece for public consumption?**

**PS:** All are important but for me the resonant space is probably most important, in that sounds can be presented in a variety of contexts but how they sound is important rather than where they sound, unless there is a strong visual or architectural context, in which case it is different! I guess it's all about the context of the piece.

**PMc: I am interested in art being multi-dimensional, inter-related and relational, and I feel sound art combined with other elements satisfies this interest, can you clarify if you agree with this statement or not?**

**PS:** I think so. I understand that that might interest you, but in my case, I'm often more than happy to work with myself as a sound artist.

## Appendix IV

### Contextual Research

Ryoji Ikeda is known for conceiving generative sounds identified as *Glitch* music or *Granular Synthesis*.

### Ryoji Ikeda

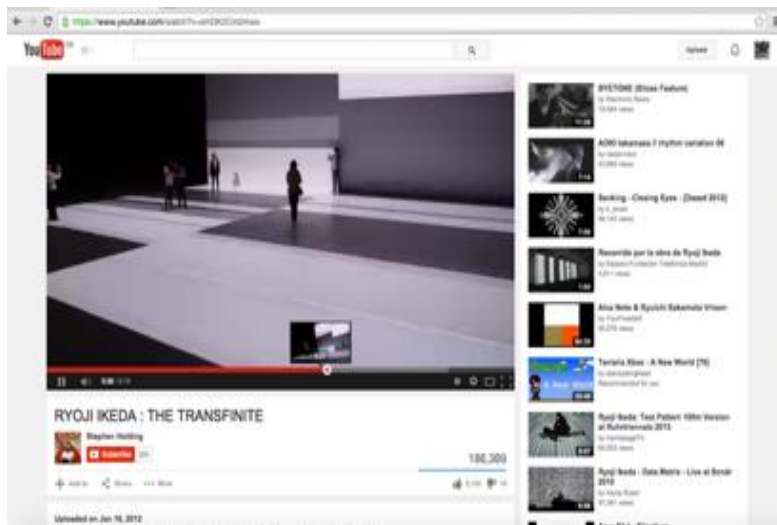


Figure 49  
Ryoji Ikeda  
*The Transfinite* (2016)  
Digital Installation  
Park Avenue Armory New York  
Screenshot YouTube

## Supercodex (2013)



Figure 50  
Ryoji Ikeda  
*Supercodex* (2017)  
Digital Installation Live Set  
Metropolitan Museum of Art New York  
Screenshot YouTube

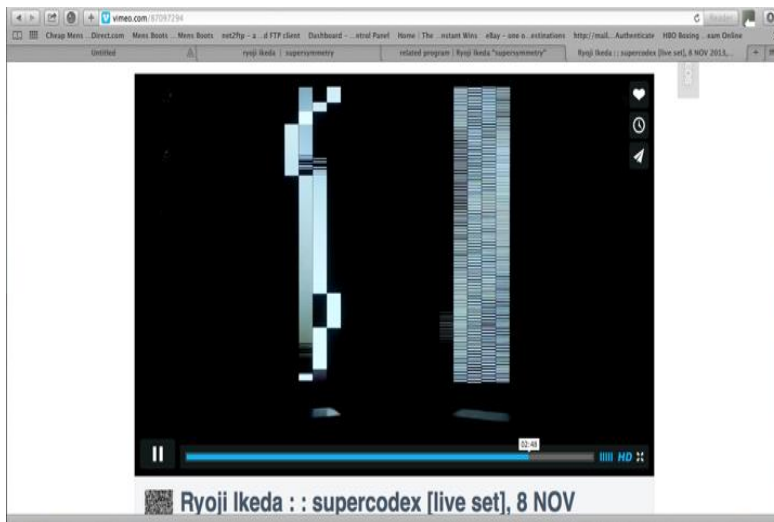


Figure 51  
Ryoji Ikeda  
*Supercodex* (2017)  
Digital Installation Live Set  
Metropolitan Museum of Art New York  
Screenshot YouTube

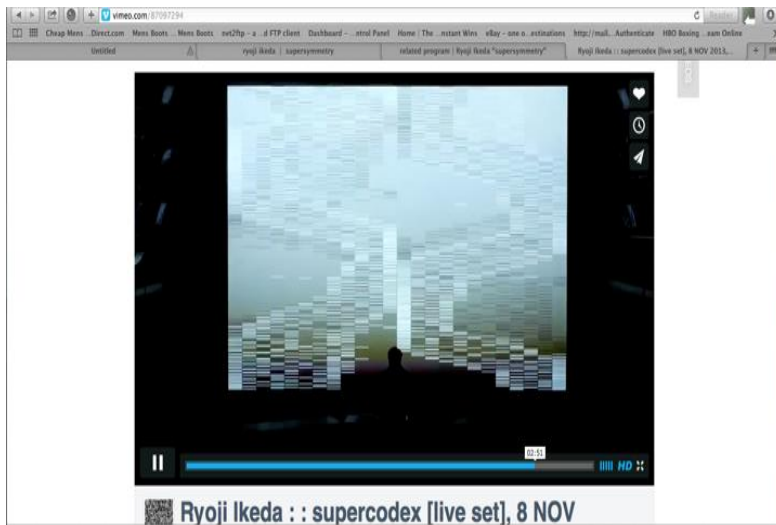


Figure 52  
Ryoji Ikeda  
*Supercodex* (2017)  
Digital Installation Live Set  
Metropolitan Museum of Art New York  
Screenshot YouTube

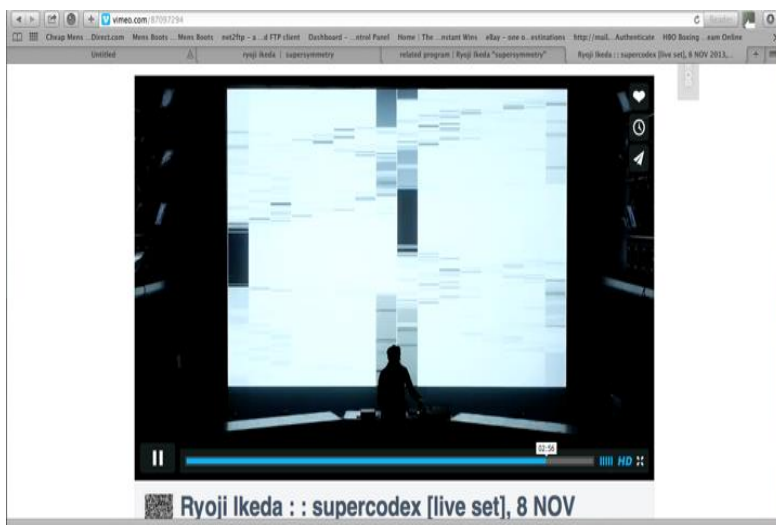


Figure 53  
Ryoji Ikeda  
*Supercodex* (2017)  
Digital Installation Live Set  
Metropolitan Museum of Art New York  
Screenshot YouTube

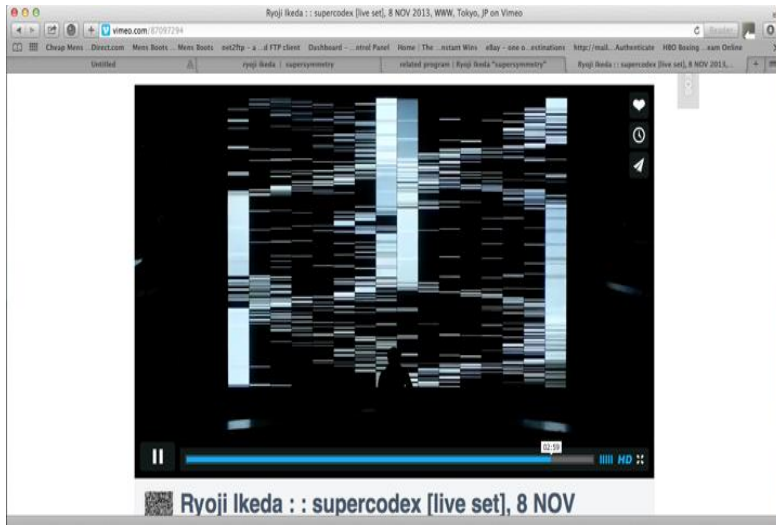


Figure 54  
Ryoji Ikeda  
*Supercodex* (2017)  
Digital Installation Live Set  
Metropolitan Museum of Art New York  
Screenshot YouTube

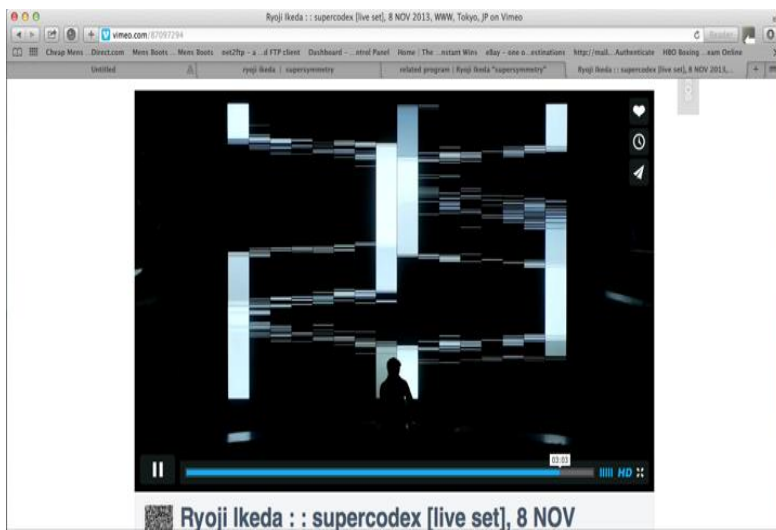


Figure 55  
Ryoji Ikeda  
*Supercodex* (2017)  
Digital Installation Live Set  
Metropolitan Museum of Art New York  
Screenshot YouTube



All the screenshot images correlating to *Supercodex* (2017) highlights a 3 minute 20 seconds segment of a live performance by Ryoji Ikeda. It reveals the artist, shadowed centrally to the two large screens located behind him. What the artist is executing in the video is indistinct; however, the two screens work synchronically with repetitive clicks and burrs. The projections are principally black and white and have high FPS (frames per second) rate, confronting perceptively of what is listened to and viewed. The representation of Ikeda is dark and silhouetted, the darkness of the room, two large screens and strange digital audio encompass all senses, making this an audio-visual, immersive experience. As a viewer/listener, an expectation is to watch and listen, like a concert or gig, whereby passive acquiescence is ordained. This distinct performance warrants a passive immersive encounter, where hapticity is not a prerequisite, but a visual and auditory undertaking is obligatory.

## Ryoji Ikeda and Carsten Nicolai

*cyclo.* (2000) is a collaborative research project by Ryoji Ikeda and Carsten Nicolai, which focuses on the visualisation of sound (*cyclo.*).

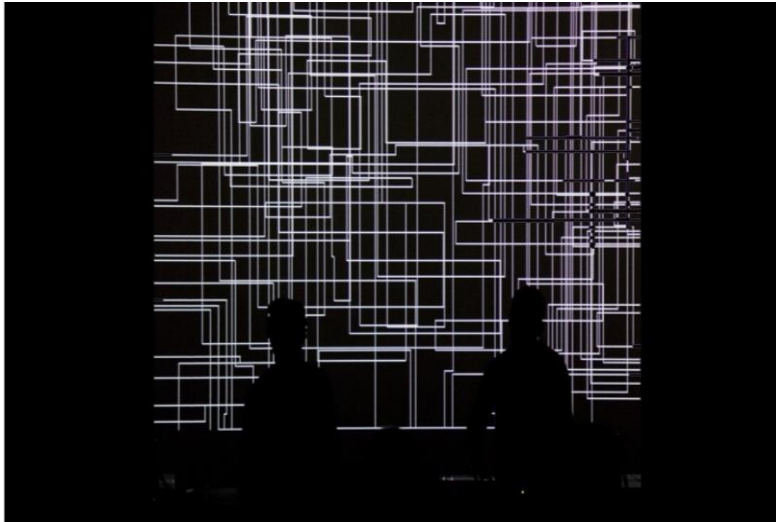


Figure 56  
Ryoji Ikeda & Carsten Nicolai  
*cyclo.* (2000)  
Digital Installation Live Set  
Museum of Modern Art New York  
Screenshot Vimeo

Creating a site-specific installation, *α (alpha) pulse's* generated light patterns pulsed in a synchronized frequency across the entire façade of Hong Kong's iconic 490 meters high ICC (International Commerce Centre) on the Kowloon harbour front. Similar to a lighthouse, the tower was sending pulses into the city, reaching out to Hong Kong residents and visitors. *α (alpha) pulse* was an experimental creation highlighting the effects of audio-visual stimulation on human perception. The work inspired on principles of neural feedback and pulsating light sources. Visible from numerous locations across Hong Kong and accessible via a mobile device app, *α (alpha) pulse* can be experienced by anyone with the App, all over the city. Designed by Nicolai, the App provided audio for the installation and responded to the light display on the ICC, adding another immersive layer to the installation.

## Janet Cardiff

Janet Cardiff's voice and sculpture work are designed to create immersive soundscapes, providing a narrative for a listener. To complete her work requires listeners to listen intently. Including Janet Cardiff and George Bures Miller as inspiration in this research process, outlines how important they are to sound art practices. *The Murder of Crows* and *40 Part Motet* are similar due to the many speakers used in a space associated with reverie. As an audience member immersivity is achieved from the ability to wander throughout the installation; listen carefully to the speakers, of which, some only whisper.

Where Nicolai and Ikeda are present in their installations, Cardiff and Bures Miller are absent. It is the audience who complete the work by actively participating, either by sitting, listening or walking around. *40 Part Motet* is a 40-track audio installation, which is a reworking of '*Spem in Alium nunquam habui*' by Thomas Tallis in 1575. The duration of the work is fourteen minutes and seven seconds. Where *40 Part Motet* differs from a musical, is that instead of standing watching. As an audience member, walking around and becoming involved in the installation, through sight, sound, olfactory, space and touch is expected, and combining all the senses aids understanding of the installation.



Figure 57  
Roman Maerz  
*The Murder of the Crows* (2008)  
Mixed Media Installation, Audio Speakers, Amplifiers, Computer, Electronics, and Miscellaneous Media.  
Nationalgalerie im Hamburger Bahnhof, Staatliche Museen zu Berlin  
Photograph

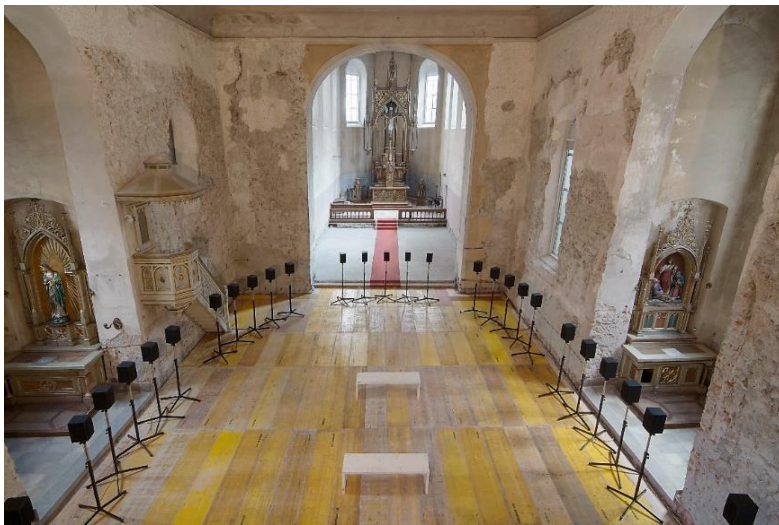


Figure 58  
Marcus Tretter  
*40 Part Motet* (2001)  
40 Loud Speakers Mounted on Stands, Placed in an Oval, Amplifiers, Playback Computer  
Johanniterkirche Feldkirch Austria  
Photograph

## Appendix V

### Exhibition Questionnaire



I want to ask a few questions about your experience with this event. Your responses are confidential. Please be open and honest with your feedback, as this will help with future planning.

Have you been to an Interactive Sound Art exhibition before?

Yes

No

Don't know

Please indicate the extent to which you agree or disagree with the following statements based on your experience of the [performance/exhibition].

|  | Strongly agree | Agree | Neither agree or disagree | Disagree | Strongly Disagree |
|--|----------------|-------|---------------------------|----------|-------------------|
| This was an immersive experience                                   |                |       |                           |          |                   |
| It made me want to know more about what I was seeing/hearing       |                |       |                           |          |                   |
| I was exposed to new ways of thinking about Sound installation art |                |       |                           |          |                   |
| I felt engaged in the experience                                   |                |       |                           |          |                   |
| It was interactive   |                |       |                           |          |                   |

How would you rate the performance/exhibition?

|  |           |
|--|-----------|
|  | Excellent |
|  | Good      |
|  | Average   |
|  | Poor      |
|  | Very Poor |

What did you like most about the performance/exhibition?

Was there anything about the performance/exhibition that could be done better?

Are you:

|  |                     |
|--|---------------------|
|  | Male                |
|  | Female              |
|  | Non gender-specific |

What is your age group?

|  |             |
|--|-------------|
|  | 12 or under |
|  | 13-19       |
|  | 20-29       |
|  | 30-39       |
|  | 40-49       |
|  | 50-59       |
|  | 60-69       |
|  | 70 or over  |

Do you have any other comments to add that will support this type of exhibition?

## Evaluation of Questionnaire



I want to ask a few questions about your experience with this event. Your responses are confidential. Please be open and honest with your feedback, as this will help with future planning.

Have you been to an Interactive Sound Art exhibition before?

Yes **9**                      No **11**                      Don't know. **4**

Please indicate the extent to which you agree or disagree with the following statements based on your experience of the [performance/exhibition].

|  | Strongly agree                              | Agree                                  | Neither agree or disagree | Disagree | Strongly Disagree |
|--|---|--|---------------------------|----------|-------------------|
| This was an immersive experience                                   | 1111111111<br><b>10 in total</b>            | 1111111111<br>11<br><b>12 in total</b> | 11<br><b>2 in total</b>   |          |                   |
| It made me want to know more about what I was seeing/hearing       | 1111111111<br>11111<br><b>15 in total</b>   | 111111111<br><b>9 in total</b>         |                           |          |                   |
| I was exposed to new ways of thinking about Sound installation art | 1111111111<br>11<br><b>12 in total</b>      | 111111111<br><b>9 in total</b>         | 111<br><b>3 in total</b>  |          |                   |
| I felt engaged in the experience                                   | 1111111111<br>111<br><b>13 in total</b>     | 1111111111<br>1<br><b>11 in total</b>  |                           |          |                   |
| It was interactive   | 1111111111<br>1111111<br><b>17 in total</b> | 111111<br><b>6 in total</b>            | 1<br><b>1 in total</b>    |          |                   |

How would you rate the performance/exhibition?

|  |           |
|--|-----------|
| 111111111111<br>111111<br><b>17 in total</b> | Excellent |
| 1111111<br><b>7 in total</b>                 | Good      |
|  | Average   |
|  | Poor      |
|  | Very Poor |

What did you like most about the performance/exhibition? Replies included:

Chatter: The amount of noise: I liked to hear the different sounds: I liked using the Wii remotes: I liked the technology: Listening to the sounds: it was interactive: It was interactive: Sound: The work: Wii remotes: Interactive: Using the technology: All: Interactive and sound: All the different sounds and technology on show: Technology: The artist has clearly spent a lot of time making this exhibition: Every bit of it: The performance.

Was there anything about the performance/exhibition that could be done better? Replies included:

No: ?: No :No :No :Louder :No: No :No :No :Different space: Nope: More Interactivity: No: Change the graphics to something prettier: Too Bright: More sound: Make it darker: No : Add more colour/pictures: Engaging

Are you:

|                                    |                     |
|------------------------------------|---------------------|
| 111111111<br><b>9 in total</b>     | Male                |
| 111111111111<br><b>12 in total</b> | Female              |
| <b>1</b>                           | Non gender-specific |



What is your age group?

|                            |             |
|----------------------------|-------------|
| 1                          | 12 or under |
| 1111111 <b>7 in total</b>  | 13-19       |
| 11111111 <b>8 in total</b> | 20-29       |
| 1111 <b>4 in total</b>     | 30-39       |
| 11 <b>2 in total</b>       | 40-49       |
| 1                          | 50-59       |
| 1                          | 60-69       |
|                            | 70 or over  |

Do you have any other comments to add that will support this type of exhibition? Answers received:

No, I really liked it: It was immersive: It was great: Play More: Would love to have seen it at night-time: Add more colour: Make it darker: As exhibitions go. It is really nice to see people using technology in this art college: add pictures to video:

## Analysis of the Questionnaires

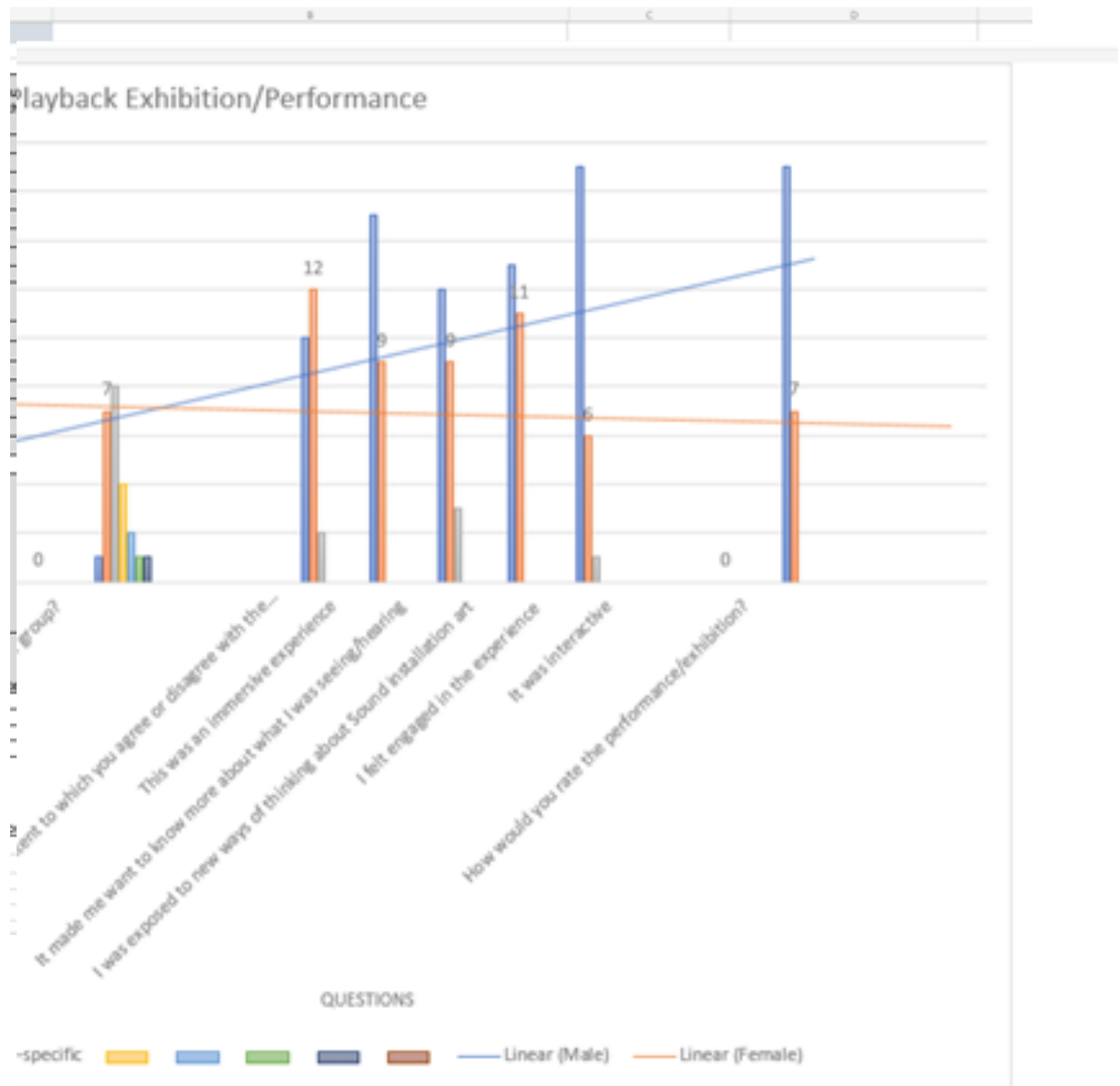
Fifty questionnaires were submitted for members of the public to complete.

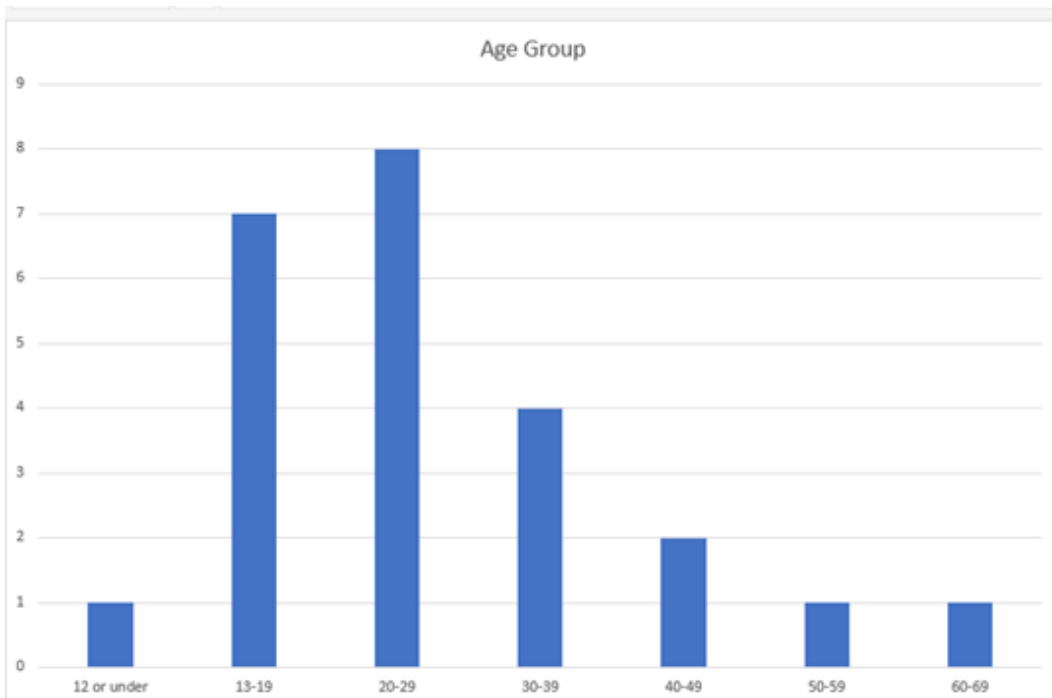
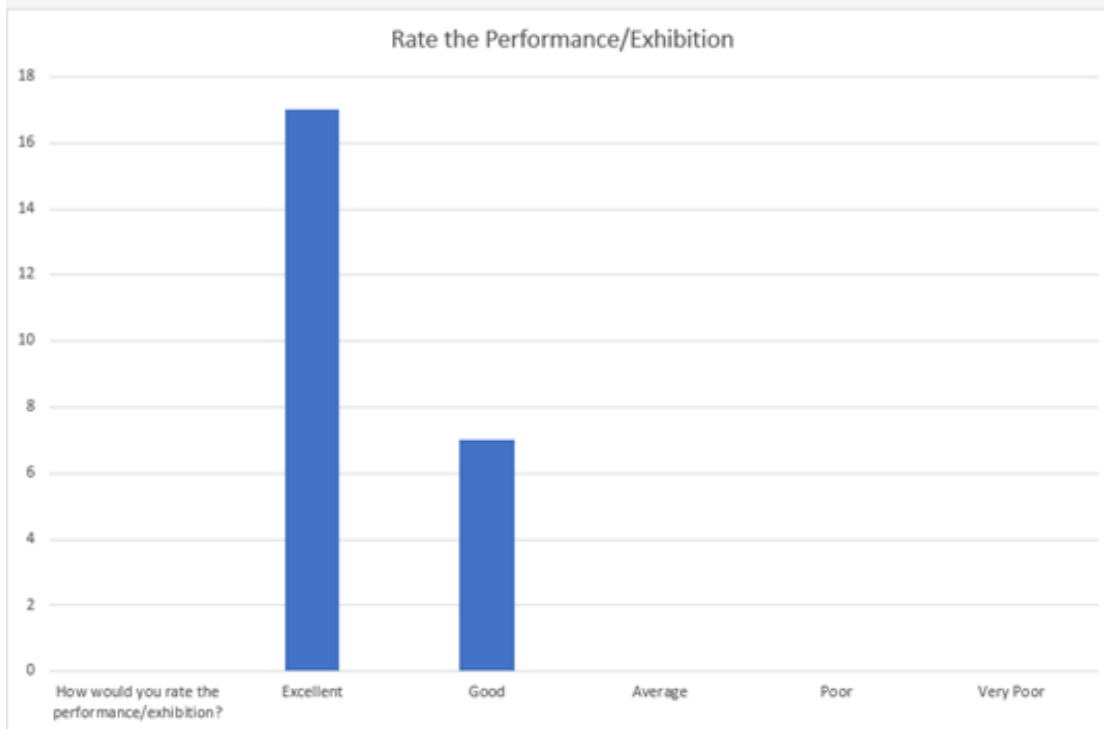
Twenty four out of fifty were returned, representing forty eight percent.

- Nine out of twenty four have visited an interactive exhibition before.
- Eleven out of twenty four have not visited an interactive exhibition before.
- Four did not know if they had visited an interactive exhibition.
- Ten people strongly agreed the exhibition was immersive and twelve agreed it was; only two could neither agree nor disagree.
- Fifteen respondents strongly agreed they would like to find out more about the exhibition and nine agreed they would want to find out more.
- Twelve people strongly agreed they were exposed to new ways of thinking about Sound Installation art and nine agreed the same. Only three could not answer this question.
- Out of twenty-four, thirteen strongly agreed they felt engaged in what was presented and eleven agreed with this as well, which meant that all who took time to fill in the questionnaire had an engagement with the work.
- The highest number of respondents (18) strongly agreed that the exhibition was interactive, and six agreed with this as well.
- Twelve females, nine males and one non-gender specific person completed the questionnaires.
- Seventeen respondents rated the exhibition 'excellent' and seven replied it was 'good'. No negative comments in this section.
- Only six respondents (26%) could not agree or disagree with some of the questions asked.

The findings indicate this was a positive outcome for the exhibition, and there were no negative comments or feedback. Asking respondents whether they were male or female was primarily to get an idea of who visited and took part in this exhibition, and to detect if there was a bias among genders.

## NVIVO Analysis





## Appendix VI

### Technical Notes

#### Glossary

**Acousmatic listening:** Pierre Schaeffer to describe listening in which sound has been decoupled from its source as well as reduced listening

**Acoustic Ecology:** R.M. Schafer referring to research into the effects of the acoustic environment on the creatures living in it.

**Additive Synthesis:** sound construction by means of the addition of sine waves to create complex timbres.

**Aleatoric Composition:** roughly synonymous with Interderminancy, including composers Pierre Boulez and Stockhausen.

**Atonality:** describes a wide range of compositional styles that do not rely on the conventions of tonal harmony and specifically do not organise pitches around a tonal centre.

**Computer Music:** compositional practice that uses computer programs to generate sounds from scratch, to manipulate existing sounds that have been digitised.

**DAW:** A digital audio workstation is a blank piece of paper with the expected paintbrushes for an artisan to express their works of art. As a user, to produce sounds, talent and most of all, creativity is what is needed. It is a computer application, devised for editing, recording, mixing and mastering files (digital audio). The ability to record from various instruments and controllers, then lay down tracks, rearrange, splice, cut, paste, add effects and finalise songs is what most DAWs provide.

**Detournement:** literally to divert or distort: a Situationist tactic by subversively altering sounds with other sounds to create a new context.

**Electro Acoustic:** electronic music composition that combine the resources or electronic music with traditional acoustic instruments.

**Electronic Music:** arises within the context of popular rather than classical music.

**Epistemological:** the theory of knowledge mostly concerned with the nature of knowledge and experience (contrasting with ontology, which is concerned with the nature of being or existence).

**Experimental Music:** a term coined by John Cage to designate musical styles that the outcome of which are not known in advance. Delight in the musical moment, composer/audience interaction.

**Field Recordings:** As a medium, field recording is recognised as capturing sounds from outside 'in the field', which can be from urban, landscape and seascape sounds. The sounds are then processed through digital software applications for either manipulation, where the sounds become 'acousmatic' (Schaeffer, 1966) or left unedited or abstracted.

**Furniture Music:** A form of background music conceptualised by Satie and Darius Milhaud. A precursor to Brian Eno's ambient music.

**Glitch:** refers to the work of composers and sound artists who focus on the sonic artefacts (noise, blips, and other unwanted sounds).

**Granular Synthesis:** Granular synthesis is a mode of generating sounds by cutting previously designed auditory objects into tiny packets of sonic data known as microsound. Having the capacity to manipulate sounds into grains, consents a composer to stretch audio, pitch, tempo and time. Inherently unique by eliminating all originality from the sound source, breaking down any sound into a grain sanctions an auditory object to become manipulatable instantly. The pitch remains the same, but the sound is stretched considerably to exclude all signifiers.

**Hermeneutics:** A philosophical movement premised on the primacy and irreducibility of interpretation in the understanding of human artefacts (texts, laws, institutions).

**Interderminancy:** Describes the production of musical compositions via chance techniques.

**Intermedia:** Considering the viewpoint of Intermedia and what it clarifies, 'Inter' defined as among or in-between and media relating to communication, technology and information. This is a style of art making or production involving a relationship encompassing different genres

## Max for Live Programming

When assembling a Max patch<sup>14</sup>, the application default arrangement for colouring objects and patch cords is a composition of grey blocks and grey patch cords. Once a patch is in progress and operational, the method of colouring blocks and building structure is adopted. Grouping objects together, so the location is more accessible when patches get challenging to read, is owed to cords and blocks ordered randomly. The patching window can become too small to manage so can be lengthened. However, it is not a good practice when patching as it indicates a considerable movement of the blocks executing the display window, and disorganised looking. Only explicating what is on screen, in front and not the protracted window is what programmers desire to accomplish. Operating in this method encourages selection and comprehending what to grant to public listening and viewing. This operational process is comparable to a printmaker who builds layers to attain a cohesiveness with image, layout and design.

## Updates to Ableton and Max 2021

At the time of writing this thesis, there have been essential updates to Ableton and Max. These updates are designed to increase workflow and to enhance creative use with the programs. All patches and compositions created before the updates have been tried and tested to support the latest versions.

- Max 8 has updated to Max 8.18, and the changes include:
- MC (multi-channel) authoring to promote 120 oscillators; 60 delays and max for live devices.
- Load time of large patches increased for both Mac and PC.
- Mapping interpolating Max and Ableton is more responsive and can 'map as you play'.
- Improvements to the Jitter (video) environment.

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<sup>14</sup> Max programs (named patches) are made by arranging and connecting building-blocks of objects within a patcher, or visual canvas. These objects act as self-contained programs (in reality, they are dynamically linked libraries), each of which may receive input (through one or more visual inlets), generate output (through visual outlets), or both. Objects pass messages from their outlets to the inlets of connected objects.

A small number of updates relevant to users of the Max 8 environment are discussed:

- Ableton Live 10.0 has updated to Live 11
- Introduction of a wavetable synth.
- The wavetable synth is an excellent addition to Ableton as it is a standalone program within the main patch.

Max for Live is built into the Ableton environment rather than as a separate program to be added. Sound packs have been overhauled to promote more sampling. Further details can be found in the footer section<sup>15</sup> although updates released in 2020, they have not altered the way both programs are utilised. Every patch and composition prepared for this thesis can be utilised with the latest versions as well as earlier versions. All sound files created in Ableton and Max operate characteristically. Tests on all video projections are conducted as a pre-condition to make sure no compatibility concerns arise when managing the new software.

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<sup>15</sup> <https://www.ableton.com/en/live/> Accessed 3/10/18



## MIDI CC

Description of Midi CC is a Continuous controller, they are usually abbreviated (CC), while the accurate term is "Control Change".

MIDI messages used to communicate performance or patch data for parameters, distinct than those which have their dedicated message types (note on, note off, aftertouch, polyphonic aftertouch, pitch bend, and program change) are the designation. The continuous controller message arrangement contains a controller number and a seven-bit value. One hundred twenty-eight controller numbers are possible; eight are saved for purposes, leaving 120 available. Notably, the mod wheel is assigned to continuous controller #1. Numbers 0-31 are for commonly executed controllers. Some of these controllers are proficient of affording more resolution than what the seven-bit data byte can contain.

Numbers 32-63 are used for additional resolution for these controllers. When a controller needs to send a high-resolution value, it sends essential bits using its conventional controller number, and then it sends the supplementary bits using the controller numbered 32 higher. Below are the standard numbered parameters used for Midi CC.

- If a controller has a mod wheel competent of communicating a new resolution, each time the wheel is actuated, the controller transfers the standard controller #1 message accompanied by a controller #33 message.
- Numbers from 64 to 69 (originally 64 to 80) are reserved for on/off model parameters, with #64 attributed to the sustain pedal. (A condition of zero equals "off"; any non-zero value is taken to be "on".)
- Numbers 70 to 95 are for controller definitions correlated with General MIDI. The degree to which these are executed varies considerably.
- Numbers 96 to 101 are used with the displayed parameter mechanism.
- Numbers 102 to 119 are reserved.
- Numbers 120 to 127, as mentioned above, are unique numbers for communications known as "channel mode" messages. They are for determining the receiving device to transform modes affiliated with the MIDI capability itself.

## Osculator (OSC)

Osculator is an open-source sound control program, interfacing amongst other software programs, permitting sound to be controlled across many platforms and hardware. Each program using OSC needs to communicate with each other through the same port information. When programs are sharing the same port (8000) for example, and the same IP address, any communication between programs will be recognised via numbers or dials moving on the computer screen.

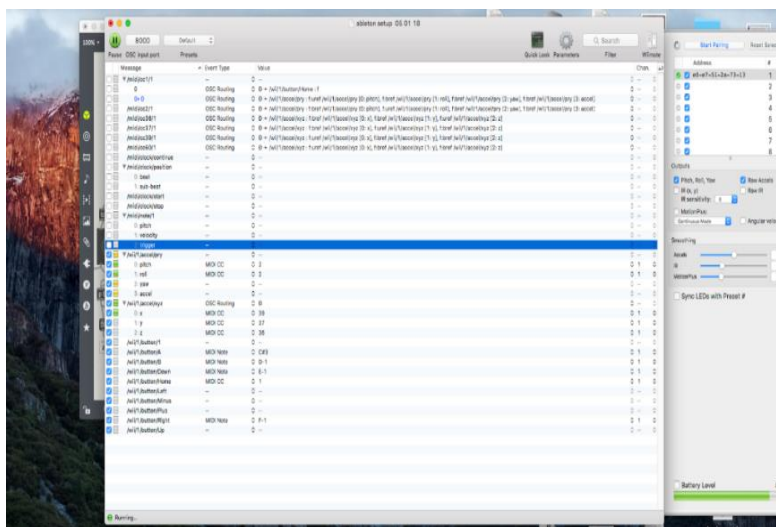


Figure 59  
Paul McConnachie  
*OSC Program* (2018)  
Screenshot

The OSC program presents all the data it currently holds for the Wiimote. The green squares are lit up, recognising it is operational as expected. Using a Wiimote as the midi controller is due to Bluetooth capabilities and an accelerometer built-in. The Wiimote transmits data to the computer around 100 times per second and is difficult to be perceived by the human eye or ear.



## Directory of Source Recordings

The sound sources are the field recordings used in live performance and compositions. All sounds are captured by the author using an M-Audio Micro track 11 recorder.

|   |  |
|---|--|
| 2-12 Eleanor Rigby.mp3                  | Clicks.mp3                             |
| 16 Heart beat speeded up.mp3            | Double any.mp3                         |
| Acoustic Picking repeat section.mp3     | Do you know what.mp3                   |
| Aha me.mp3                              | Drive back sat.mp3                     |
| Are they helping him up oh my god.mp3   | Echo cough.mp3                         |
| Are you all right mate tempo change.mp3 | Engine starting and footsteps.mp3      |
| Are you all right mate.wav?             | Footsteps and speech.mp3               |
| Audio riots.mov                         | Footstepsmarching.wav                  |
| Beep in station.mp3                     | For some reason.mp3                    |
| Beeping sound a.mp3                     | Funny laugh.mp3                        |
| Beeping sound.mp3                       | Get it on the fucking road.mp3         |
| Bell ringing.mp3                        | Get to know you back.mp3               |
| Better than the room there.mp3          | Girl laughing.mp3                      |
| Bought a concrete.mp3                   | Girl singing.mp3                       |
| Boy and girl talking.mp3                | Girl's footsteps.mp3                   |
| Boy laughing.mp3                        | Go down there.mp3                      |
| Breaking glass and laugh.mp3            | Go to the moon.mp3                     |
| Breaking glass and lots of shouting.mp3 | Going down escalator.mp3               |
| Brown noise.mp3                         | Got pants and shirts anyway.mp3        |
| Bus stopping a.mp3                      | Got some plastics.mp3                  |
| Bus stopping.mp3                        | Guitar player.mp3                      |
| Busy road.mp3                           | Heart beat then flat line.mp3          |
| Car sound.mp3                           | Heart beat.wav                         |
| Cars.mp3                                | Heavy walker lady.mp3                  |
| Chance.mp3                              | Helicopter above.mp3                   |
| Child talking 2.mp3                     | Helicopter control its well alight.mp3 |
| Child talking.mp3                       | Helicopter riot.mp3                    |
| Click.mp3                               | Hiya come to the.mp3                   |
| Horse's running.mp3                     | Pakistani voice.mp3                    |
| I am opposite.mp3                       | Police car radio.mp3                   |
| Ineligible voice.mp3                    | Police car siren and monkey chants.mp3 |

|   |   |
|---|---|
| Is good yeah.mp3                          | Put me on this sometime kid voice.mp3             |
| Just walked past him.mp3                  | Rattling noise.mp3                                |
| Kid's voice set a trap.mp3                | Reporter talking about the riots amplified.mp3    |
| Ladies footsteps.mp3                      | Reporter talking about the riots.mp3              |
| Lady walking heels.mp3                    | Rioting and shouting.mp3                          |
| Landed right in front of him.mp3          | Riots ive.mov                                     |
| Look at all the lonely people amp.mp3     | Riots london.mp3                                  |
| Look at all the lonely people correct.mp3 | Riots.wav   |
| Look at all the lonely people.mp3         | Rustling paper.mp3                                |
| Look what we've done a.mp3                | Saw tooth sound.mp3                               |
| Look what we've done.mp3                  | Saying about ye.mp3                               |
| Looting.mp3                               | Scrunching noise.mp3                              |
| Lorry going past.mp3                      | Security personell.mp3                            |
| Man coughing.mp3                          | See you tomorrow.mp3                              |
| Man's cough 2.mp3                         | Shall we girl talking.mp3                         |
| Man's laugh 1.mp3                         | She does not have all.mp3                         |
| Me ahooo.mp3                              | Shit.mp3  |
| Me aooo                                   | Shouting and glass.mp3                            |
| More trouble ensues.mp3                   | Shouting riots.mp3                                |
| Motorbike going past.mp3                  | Sine sound.mp3                                    |
| Motorbike.mp3                             | Singer and speaking.mp3                           |
| Move away riots.mp3                       | Singing and girl talking with repeat and fade.mp3 |
| Move away.mp3                             | Singing and girl talking with repeat end.mp3      |
| Music audio.mp3                           | Singing and girl talking.mp3                      |
| Nah mate nutter.mp3                       | Singing in the town.mp3                           |
| Ob1.mp3                                   | Slipped slipped.mp3                               |
| Small cough.mp3                           | What for me knocking at your door.mp3             |
| Square tone.mp3                           | What she doing.mp3                                |
| Squeaky door.mp3                          | What they are easy to get into.mp3                |

|  |                             |
|--|-----------------------------|
| STE-000.wav                              | What is the time megan.mp3? |
| STE-001.wav                              | White noise.mp3             |
| STE-002.wav                              | Why would I lie a.mp3?      |
| STE-003.wav                              | Why would I lie.mp3         |
| STE-004.wav                              | You no like that.mp3        |
| STE-005.wav                              |                             |
| Strings Eleanor rigby.mp3                |                             |
| Sure.mp3                                 |                             |
| The reason he would not come<br>down.mp3 |                             |
| Ticking.mp3                              |                             |
| Walk away from me.mp3                    |                             |
| Walking and beeping.mp3                  |                             |

## Illustrations

März, R. (2008) *The Murder of Crows* (Photograph) Available at:  
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