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# Echoes

Ecosystems through the prism of textiles, sounds and plants.

Kesselring Rythm (Rita)

MFA Studio Arts  
Fibres and Material Practices  
Concordia University

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*Holding Space* (2024)

# Acknowledgments

As an uninvited Guest, I acknowledge that the institution that I am benefiting from is located on the unceded territory of Tiohtià:ke where the Kanien'kehá:ka Nation, the People of the Flint are the custodian of the lands, waters and skies. I acknowledge that I am building my home, studio and living on the ancestral territories of the Abenaki, on the unceded lands of the Waban-Aki confederacy. I also want to recognize the territories, Nations and Peoples that I have overlooked as a result of my own error or historic and political erasure.

I am thankful to the original Peoples of these lands, the plants, the animals, the earth, the waters and the skies and I commit to respect and acknowledge all the living beings, the ecosystems and interrelations that define these territories. In gratitude and respect to my Hosts as well as my teacher Hannah Claus, I am educating myself about my responsibilities as an uninvited Guest and commit to learn the local protocols on whose Territories I am circulating on and where we gather today. I will do my best to pass on these generously shared teachings to my children and family. As an artist, mother and Guest, I will only collect and harvest what I need from the waters, the lands and the skies and will not claim this territory as my property in respect to the original Peoples and ecosystems of these lands.

I commit to take responsibility by acknowledging the wounds caused in the past and present, I will deepen my understanding of Indigenous histories, cultures, and spiritualities. I engage to become a better listener, an ally to Indigenous Peoples in supporting movements towards Indigenous sovereignty and self-determination.

# MANY THANKS

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*Gallery view (2024)*

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# INTRODUCTION

Echo: the reverberation of frequencies with a delay long enough to hear the emitted sonic source repeating itself. This repetition occurring through the reflection of the sound wave will eventually fade out, leaving space for new tones to be looped. Expanding the concept of echoes across materials and sites, the repeating patterns of modern times show a persistent loop. What if a single source shouts loud enough to flatten the subtle divergent voices that compose an ecosystem?

The curious play of natural feedback loops drives my investigation into the repeating patterns and destructive recurrences of Western countries throughout history. The invasive loop that aims to regulate and encourage restraint seeing and listening, resembles a rhythm of utopian perceptions that flatten diversity to achieve a one-sided uniformity. But isn't it in the multiple, the diverse and the complex interrelationships that the fascination emerges? Complex ecosystems of thinking, being and imagining are fuelled with freedom and fulfillment of creative power.

The following pages will address my research creation project *Echoes* which is examining the interconnections between textiles, sounds, natural and digital ecosystems. The political underpinnings of my investigation frames the reverberation of colonizing patterns and of the capitalistic urge to control and optimize the land and its living beings. The way in which these altered systems are satisfying only their own behavioural advantages, resonates through many aspects of modern civilization with monotonous patterns.

As an artist, mother and student, I am deeply engaged with material ecologies and my work prioritizes sustainable approaches that examine the environmental, historical and political backgrounds of matter and site. My artistic work is addressing contemporary environmental struggles with a particular attention on the ecological urgency of natural and digital ecosystems. Looking at textiles and soundscapes as interfaces which evoke repeating patterns throughout history, my installation work aims to echo distortions of the relationship between contemporary economic and planetary systems.

My artistic work is rooted in scientific research, which I extend to interdisciplinary interactive installations. Using ancestral textile techniques, sonic elements and electronics, the works created for this exhibition take form as distorted ecosystems questioning colonial behaviours in the age of excessive data gathering. In relationships with the environment, textiles and sound create a transition between ancient techniques and new technical innovations. My works are reflecting on matter and site through repetitive textile patterns, simplified soundscapes and inefficient electronic systems.



# PATTERNS

Textiles, soundscapes and ecosystems

The patterns that inform textile practices, soundscapes and natural or digital ecosystems are a testimony to the passage of time. The fabric formed by the interweaving of a site, its soundscape and material composition oscillates according to the specific rhythms of an era, manifesting the subtle voices of a place as well as the motifs of a given culture.

## TEXTILES: ARCHIVAL INTERFACES

Textiles are cultural markers translating ancient knowledge into contemporary cultural heritage. Building bridges between generations, hand woven textiles carry the patterns and techniques of communities, which embody stories of peoples and their relationship to the landscape. Weaving as a medium, reflects on our intimate relationship to our historic and cultural heritages. Textiles can be read as contemporary codes, translating parts of traditions and culture as in this case reflecting on the impacts of modern societies on the environment. Textiles and more precisely weavings, are archives capturing a part of the era they were made in, mirroring aspects of sociological history. Considering this affirmation, I wonder what form the cloth of my context materializes, living in times marked by complex transformations, disturbed ecosystems and the emergence of digital abstractions.

Weave structures and patterns echo different forms of methodologies and ideologies through history. In the exhibition, digitally translated images have been woven into cloth

by the use of a Jacquard loom<sup>1</sup>. This specific loom was central in the European industrial revolution and through the use of punch cards, it is known as the ancestor of the binary code and to some extent of the modern computer. The Jacquard loom transforms images into cloth by computation by having an extended control over the warp threads. This specific weaving technique, turned textile patterning into an economic asset. «(The) Jacquard machine [...] made it possible for complex and detailed patterns to be manufactured by unskilled workers in a fraction of the time it took master weaver and his assistant working manually » <sup>2</sup>

The presented Jacquard weavings are an attempt to illustrate excerpts of places and sounds waves recorded in natural ecosystems<sup>3</sup>. These works aim to unfold the conversation from weave structures to our complex interrelationship with the surrounding ecosystems. The attempt to illustrate the living by a fixed image<sup>4</sup> creates an opposition to natural rhythms that are in constant transformation. Furthermore, all the woven works in this exhibition have parts of controlled structures showing defined patterns but also unwoven sections. The unraveling edges of the cloths refer to the uncontrollable freedom of things. Being in times of drastic changes, the loose threads are pointing to the beauty and the fragility of the unknown.

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<sup>1</sup> « Jacquard loom, in weaving, device incorporated in special looms to control individual warp yarns. It enabled looms to produce fabrics having intricate woven patterns such as tapestry, brocade, and damask, and it has also been adapted to the production of patterned knitted fabrics.

The Jacquard system was developed in 1804–05 by Joseph-Marie Jacquard of France, and it soon spread elsewhere. His system improved on the punched-card technology of Jacques de Vaucanson's loom (1745). Jacquard's loom used interchangeable punch cards that controlled the weaving of the cloth so that any desired pattern could be obtained automatically. These punched cards were adopted by the English inventor Charles Babbage as an input-output medium for his proposed Analytical Engine (which would have been the first digital computer) and were used by the American statistician Herman Hollerith to feed data to his census machine. They were also used as a means of inputting data into digital computers into the mid-20th century but were eventually replaced by electronic devices . »

Encyclopedia Britannica: <https://www.britannica.com/technology/Jacquard-loom>

<sup>2</sup> The Science and Industry Museum in Manchester, <https://www.scienceandindustrymuseum.org.uk/objects-and-stories/jacquard-loom>

<sup>3</sup> *Can you hear the ground shout?* (2023-24), *Staging a forest to grow in* (2023-24), Appendix p.31-32 & p.39-40

<sup>4</sup> *Staging a forest to grow in* (2023-24) Appendix, p.39-40

## SOUNDSCAPES: WITNESSES OF TIME

The changing sonosphere of our world is an important witness of time and reflects specific socio-political narratives of a culture in a defined place. The contemporary soundscape exposes the drastic changes of the past centuries especially when looking at the economic development. The changing sound sphere of a place is a key element to read the human impact on the environment and its reverberations to future generations.<sup>5</sup> The industrialization that frames our contemporary societies bears witness to this. Murray Schafer explains that the rapidly changing soundscape of the past centuries suppresses the richness of our aural experiences and that “*the noise of the machines became ‘a narcotic to the brain,’ and listlessness increased in modern life.*”<sup>6</sup> The patterns of our soundscapes are marked by distortions of natural sounds thanks to the transformation of the land and the amplification of continuous drone sounds of machines created by the capitalist system. Murray Schafer explains: “[...] In all earlier societies the majority of sounds were discrete and interrupted, while today a large portion - perhaps the majority - are continuous. The flat line in sound emerges as a result of an increasing desire for speed.”<sup>7</sup> The addition of sounds emitted by contemporary devices and industrial systems (more broadly the Anthropocene) to our ecosystems frequently overrides the original voices and disrupts sonic qualities of a place. The socio-political changes take place over time, and the sounds that echo them resonate throughout history.

The resonant noises of modern times are the sonic testimony of economical growth and surely are a relevant part of the perception of our environmental realities. Based on fundamental questions about the behaviour of sound and frequencies, and their relationship with contemporary environmental changes, my research investigates the sounds as material. To what extent are changing sonic environments modulating natural

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<sup>5</sup> Swiss research Marcus Maeder (ETH Zürich) leads an ecoacoustic research project called « sounding soils ». By the use of a high-tech microphone the soundings of the underground are catalogued for scientific research, confirming the link between the health of agricultural land and its sonic diversity.

<sup>6</sup> Murray Schafer, *The soundscape*, p. 79

<sup>7</sup> Murray Schafer, *The soundscape*, p. 78

rhythms? What is the material heritage of the changed soundscape led by the industrial and digital area? How is matter influenced by fluctuating oscillations or abruptly changing sounds? What if the drastic changing frequencies in our surroundings change our behaviour or health?

I use different techniques to listen and record the environment such as electromyography, geo-phones, hydrophones and experimental contact-microphones to listen under the ground. Using these devices, I am able to capture sounds we otherwise are not able to perceive. The collected sonic data becomes the source material to create musical textures, weave patterns, drawings and more. I create non-linear sound collages as compositions by blending the rhythms of weaving with the sounds of nature or intertwining the frequencies emitted by plants to the humming of a spinning wheel. These audible traces of textile traditions do resonate, like feedback loops through history leave traces of the cultural heritage of textile craftsmanship within the soundscapes, creating fictional sonic realities for my growing plants in the gallery. Research has shown that specific frequencies are influencing the growth and health of the young sprouts.<sup>8</sup> In the sculpture with living plants<sup>9</sup>, I'm restraining the soundscape to a minimum. Using frequencies as a source material to examine how the sonic cadence of the planetary echoes contemporary struggles concerning environmental changes.

## ECOSYSTEMS: PATTERNS OF INTERRELATIONS

As described in the Merriam-Webster dictionary, an ecosystem is « the complex of a community or organisms and its environment functioning as an ecological unit » or «something (such as network of businesses) considered to resemble an ecological ecosystem especially because of its complex interdependent parts»<sup>10</sup>. The interwoven fabric of a site can be considered as a complex composition that oscillates according to

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<sup>8</sup> Kim, & all (2017). *Sound Waves Increases the Ascorbic Acid Content of Alfalfa Sprouts by Affecting the Expression of Ascorbic Acid Biosynthesis-Related Genes*

<sup>9</sup> *Roots, rocks, rhythms* (2024) and *Staged forest to grow in* (2023-24), Appendix p.37-40

<sup>10</sup> Merriam-Webster dictionary, online, January 2024 <https://www.merriam-webster.com/dictionary/ecosystem>

specific rhythms that materializes its pace. Looking at the contemporary modulation of land to suit economic growth, the transformation of the environment - its soundings and material compositions - echoes patterns of the very fabric of capitalistic societies. Just as fractals are repeating a pattern to an infinitum, the excessive land management for economic purposes reverberates in its soundscape, material composition and so on. The impact of environmental changes through excessive land exploitation are resulting in major loss in the audible and material diversity in forests, waterways, meadows and soils. This includes the transformed ecosystems of fibrous materials; the industrialization of textiles over the past centuries turned the cultural diversity of patterns and materials into trends. The flattening of the cultural heritage of textile craftsmanship is turned into a merchandise to be capitalized on in a global system.

Nourished by the writings of Robin Wall Kimmerer, Donna Haraway and Peter Wohlleben, my work with plants is inspired by understanding the vegetal as sentient being and the land as home. Composed of many complex and fragile communication networks, the symbiosis of a place resonates with all beings who inhabit it. Furthermore, my research is expanded to scientific evidence of the influence of specific frequencies - sounds and others - on vegetal growth and health.<sup>11</sup> Through scientific research, the work moves from philosophical concepts to Cartesian models leaving space of interpretation and fictions. In the exhibition a small butternut tree<sup>12</sup> grows in a fictional ecosystem. It is surrounded by two large jacquard woven images of monoculture forests and a simplified soundscape. A strange synthetic landscape with altered sounds aims to recreate an ecosystem for the tree to grow in while adapting to its new realities. The soundscape is irregularly modulated in response to the changing factors of the immediate environment. Sensors are measuring ambient light, humidity and temperature and will change the simplified repetitive patterns of sound.

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<sup>11</sup> Singh P, & all (2019). *Impact of different musical notes and vibrations on plant development*.

<sup>12</sup> *Juglans cinerea* (butter nut) is an endangered species growing in Canada. The nuts are comestible and the husks can be transformed into a beautiful dark brown ink or used to dye textiles or stain wood. Ontario Government: <https://www.ontario.ca/page/butternut-species-risk>

# DISTORTIONS

## Data and digital ecosystems

Blurred by the capitalist vision and its eagerness to be in control, our new digital world interacts with and impacts the rhythms of natural ecosystems. Contemporary trends towards utopian distortions are amplified by the altered realities of cyberspace, and reflect the disturbed patterns of our economic systems.

## DIGITAL ILLUSIONS

Thinking of the “new immaterial land” unfolding within the technological revolution is as exciting as scary when considering its infinite nature. The new monitored world is built on countless amounts of information, constantly growing by the harvest of data among nature, humans, and the self-created feedback loops. The super scale of this pool of information helps humankind to accomplish unexpected, amazing things that could hardly be imagined a century ago. On the other hand, when looking at the ethics of the harvested raw material (the data) and the dangerous trivialization of collecting information without consent raises many unaddressed questions. The abstraction of ubiquitous gathering of data dangerously echoes colonial attitudes. Economic and political entities took over the digital lands and are taking for granted the “free” resources without consent nor consideration<sup>13</sup>. Digital cultures and ecosystems are mirroring disturbing patterns of the physical world in cyberspace and vice versa. Looking at the capitalistic path since the industrial era shows that these behaviours are pushing humankind away from its natural environment and similar patterns seem to be amplified in the borderless digital country.

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<sup>13</sup> Cloudry N. and Mejias U. A. (2019) *The cost of connection*

The digital development that is omnipresent in our lives, raises many questions. What are the fundamental values of the *immaterial land* presumed to be secure, ideologically fair and equal for all its citizens<sup>14</sup>? How much is left over from the frontier-less freedom of the revolutionary technocratic tool that nowadays shrinks down friendship and identity to data and capital<sup>15</sup>? When thinking about the very material reality of the *Cloud*, how far have we gone from the once promised greener and smarter future through global digital connection<sup>16</sup>? The digital world and its disproportionate size resonate with the rhythms of economic systems, pushing back the creative tool it once was intended to be.

Cloudy and Mejias explain that “For the unwelcome truth is that, just as in Marx’s eyes capitalism had disturbed human beings’ relations with physical nature, in the era of data colonialism, capitalism risks disturbing humanity’s relations to its nature [...] Data colonialism goes beyond neoliberalism by literally annexing human life directly to the economy and reorganizing it fundamentally in the process.”<sup>17</sup>

The works presented in the exhibition take a rather cynical and unproductive approach to digital media and data collecting. Inspired by contemporary scientific research, the curious ecosystem created in *Roots, rocks, rhythms*<sup>18</sup> is boiling down the digital into simple data loops. Showing closely monitored flax seedlings growing in a strange environment surveilled by electronic devices. The electronic components are laid on the floor, showing vulnerable systems that can be easily disturbed. The fragility of this system makes it unreliable for scientific research but it still function as an interactive ecosystem measuring the changes of the environment through the embedded sensors.

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<sup>14</sup> O’Neil, C. (2016) *Weapons of Math destruction*

<sup>15</sup> Zuboff, S. (2020) *Surveillance Capitalism*

<sup>16</sup> Pitron, G. (2021) *L’enfer numérique, le voyage au bout d’un like*

<sup>17</sup> Cloudry & Mejias, (2021) p. 33

<sup>18</sup> *Roots, rocks, rhythms* (2024), Appendix p.37-38

In the hand woven *Echoes* piece<sup>19</sup>, non-insulated conductive silver threads are laid freely on the floor, and by moving these, the electrical circuit could instantly short-circuit. By infiltrating electronics into the woven cloths, the textile's behaviours are transformed, turning it into a digital interface, data collector and sound emitter. The shadow weave structure, consists of alternating pale and dark threads in the warp and weft, and refers to digital media and codes. The weaving itself includes glitches in the traditional weave pattern which can be seen as a glitching contemporary screen. The woven patterns are echoing the repetition and are translating the data using binary codes. The cloth moves through the emerging sound waves which turns the focus on sound as a material and its vibrations influencing the natural rhythms of our surroundings.

In *Can you hear the ground shout?*<sup>20</sup> isolated sounds recorded in the ground are amplified to be heard. These recordings can only be perceived through digital recordings using high-tech microphones. In the final pieces, the recordings are emerging through textile speakers which are inefficient. The textile loudspeakers were made using embroidery to couch conductive silver thread onto the woven cloth in a spiral shape. These experimental emitters are distorting the sounds making them easily over-heard once again. These works are creating failing cycles where high-tech tools and research turn into speculative inventions. Through their failing systems, the works aim to question and shake our faith in computational systems.

## ALGORITHMS AND NATURAL RHYTHMS

The economic systems of the "Global North" alienate humans from their surrounding ecosystems, turning societies into strangers on their own planet. If we consider cyberspace as an immaterial ecosystem, we can see patterns inspired by capitalist thinking repeating themselves, disregarding the link between human beings and their environment. To what extent are digital algorithms influencing our lives? The

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<sup>19</sup> *Echoes* (2024), Appendix p.33-34

<sup>20</sup> *Can you hear the ground shout?* (2024), Appendix p.31-32



disconnection created by excessive data mining and the blind trust in mathematical systems is reverberating in the physical and digital worlds<sup>21</sup>. The way the capitalistic enterprise deliberately excludes natural resources in the economic budgets seems to be replicated in the immaterial lands. Algorithms are flattening diversity, blocking out divergence and framing a standard sociological way of functioning. Looking at the woven patterns of these new ecosystems, one could easily think that monoculture is part of the philosophical statement of contemporary civilizations.

Potawatomi botanist and author Robin Wall Kimmerer wrote: *“In the settler mind, land was property, real estate, capital, or natural resources. But to our people, it was everything: identity, the connection to our ancestors, the home of our nonhuman kind folk, our pharmacy, our library, the source of all that sustained. Our land was where our responsibility to the world was enacted, sacred ground. It belonged to itself; a gift, not a commodity, so it could never be bought or sold.”*<sup>22</sup>

In my work, the repetitive, restrained sound selection gives an obvious feel of altered environment. In the exhibition, sound is used as material to create echoes, looping patterns, and monotonous rhythms. For instance, in the series of sculptures that recall a strange laboratory monitoring the growth of linen seedlings<sup>23</sup>, the sounds are introduced by surface transducers which make the frequencies resonate through the surface of the object, in this case the sculpture themselves. The sounds are vibrating through the soil to the plants like impulses of a site echoing the ecological changes and the reduction of sonic diversity of largely exploited and managed lands. The sculptures are speculative experiments where the physicality of sound interacts with its surrounding.

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<sup>21</sup> O’Neil, C. (2016) *Weapons of Math destruction*

<sup>22</sup> - Kimmerer, (2013). *Braiding Seetgrass* p. 17

<sup>23</sup> *Roots, rocks, rhythms* (2024), Appendix p.37-38

The digital is also present in the textiles woven with the Jacquard loom<sup>24</sup>. In this case the computer system act as translators of a digital imagery and the software processes the image into a weave structures to be woven into tangible objects. Both the Jacquard weavings and the hand woven piece<sup>25</sup> have been made by altering black and natural linen threads making links between the binary and nature. Black is the most environment impacting colour in the dyeing process contrasted with undyed natural linen. The presented installation works are creating abstracted realities that oscillate between science and fiction intertwining the natural and digital and unravelling alternated realms: or fictive ecosystems with content lacking. Implemented by woven monocultures and repetitive soundscapes the works create an alternative reality for plants to grow in.

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<sup>24</sup> *Can you hear the ground shout?* (2023-24), *Staging a forest to grow in* (2023-24), Appendix p.31-32 & p.39-40

<sup>25</sup> *Echoes* (2024), Appendix p.33-34

# RESONANCE

## Interrelations and time

Weavings and soundscapes are archiving the echoes of our times. As mediums, textiles and frequencies embody parts of our era marked by complex transformations and abstractions.

## CONTEMPORARY ECOSYSTEMS

Over the past century, natural rhythms have been tremendously distorted and are still mutating in the natural and digital ecosystems and leading to abrupt changes in our societies. Modern large-scale monocultures as in organized forestry or in industrial fibre production - linen, cotton, bamboo - have altered landscapes and homes. In the era of globalization, textiles as cultural markers have become less specific to place. Industrial development has globalized the textile trade, creating monotonous patterns that echo, in different ways, the narrowing of modern cultural heritage to economic advantage. Looking at natural ecosystems, modern civilizations took away the “unwanted cultures” to organise the land in specific ways without considering the complexity of the original state. The reduction of the floras biodiversity automatically changed the abundance of fauna and suppressed their voices.<sup>26</sup> Many sounds disappeared from those sanitized landscapes and the compositions suddenly mutated: monotone drones of motors appeared where only a few years ago the natural ecosystem had never heard any of those. The impact of these colonizing trade cultures reduces diversity and changes a site not only physically but also sonically and culturally.

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<sup>26</sup> In the *Acts of Listening Lab* (2021), Sophie Chao points out that in palm tree plantations and their endless rows of identical trees, they not only reduce the terrestrial biodiversity but ultimately changed the sonic environment.

With a particularly hectic pace, the sonic mutations have transformed the acoustic ecologies of places. In his writings on sonic colonisation and its effects on contemporary sonospheres, Jaques Attali brings us back to the role of the sonic phenomena – music for instance - to situate society in time and place; *“Music, the organization of noise, is one such form. It reflects the manufacture of society; it constitutes the audible waveband of the vibrations and signs that make up society. An instrument of understanding, it prompts us to decipher a sound form of knowledge.”*<sup>27</sup> If listening helps us in our spatial orientation or framing historical periods, how are the displaced soundings acting within these changed flattened habitats? What about the non-human?

In the gallery small monocultures of flax sprouts are growing in experimental sound boxes. Questioning the effect of reduced frequencies on the plants’ growth, sounds resonate through the sculptures implementing a curious scientific research laboratory. Scientific research has shown that specific frequencies do impact on the growth and health of plants.<sup>28</sup> I am, wondering how much does the reduced soundscape affect the fibres of the plants, the structuring material that is building the woven cloths?

Flax, once matured, can be transformed into linen thread which I deliberately chose as material because of its sustainability and potential to be grown and processed where I live. Flax qualifies as a sustainable textile fibre because it needs much less water than cotton to grow and it can easily be grown organically.<sup>29</sup> In the settler histories of Québec, the fibre production included linen as a major crop in our northern climates.<sup>30</sup> Nowadays the culture of Flax is mainly held in Europe – particularly in France and Belgium – from where I source my threads used for the weavings in this exhibition. On aesthetic grounds its shine, crisp firmness and ability to hold its own structure are qualities that give body to my weavings and installations. Notably the thread installation would not

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<sup>27</sup> Attali, J. (2009). *Noise the Political Economy of Music*, p.

<sup>28</sup> Singh P, Srivastava N, Joshi N, Shastri I. *Impact of different musical notes and vibrations on plant development*.

<sup>29</sup> Unfortunately, the contemporary large-scale production of Flax does use some chemicals in the production process. <https://www.terresinovia.fr/-/strategies-herbicides-sur-lin-oleagineux->

<sup>30</sup> Lamontagne S-L., Harvey F. (1997). p. 36

hold its structure the way it does using a different fibre. The linen thread installation *Holding Space*<sup>31</sup> is drawing a three dimensional shape holding in place on one side with short easy to pull off carpet nails and on the other side by a movable wooden block forming a fragile ecosystem of threads that could be easily disrupted. When looking at the sculpture on a specific point of view, the shape creates the illusion of a circle that overlaps the corner where it is installed. The collapsing shape is in constant transformation when moving around it. Building in space, the vulnerable structure is reacting to the subtle air movements when getting closer, as if it was shimmering. Showing a vulnerability it echoes fragile elements in nature, changing equilibrium.

## SHIMMERING CONNECTIONS

Using research as a creative practice, I accentuate the tension between traditional methods and new technologies through textiles, electronics and sonorous elements. The audible traces of textile traditions resonate, like feedback loops through history, the rhythms of a community. My work draws parallels between the archival potential of textile objects and the memories emerging from sonic elements. Relating the remembrances to ecological rhythms aims to interlace different communication systems, memories and overarching patterns of politics, ecology and cultural heritage.

Creating simplifying ecosystems that are echoing repetitive patterns of the natural and digital lands, my work pays a particular attention to the transformative qualities of nature. I question the systemic rejection by modern economic systems to include the costs of environmental issues while pursuing their eternal growth policies. The very physical ecological footprint of the *Cloud Empire* and its data centres doesn't seem to be relevant in political statements about our *greener* futures.<sup>32</sup> The costs of this abstract ideologies

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<sup>31</sup> *Holding Space* (2024), Appendix p.35-36

<sup>32</sup> *L'enfer numérique* Pitron, G. (2021) *L'enfer numérique, le voyage au bout d'un like*

Pitron is pointing to the alarming fact that probably by 2025, 20% of our global electrical energy will be used for maintaining the digital world. p.45

are echoing repetitive patterns and are colonizing land, nature and bodies. The impact of the capitalistic culture reverberates in the physical and immaterial world with a frightening noisy loudness.

The influence of specific frequencies on matter and living organisms leads to many questions; What is the sound (or frequency) of the digital age and how can it oscillate in its own distorted universe? What does listening in times of the Anthropocene actually mean? What are the specific soundings of our new geological era? What stories are those phonic changes telling or suppressing? Mentioning the impacts of Westernized assumptions, AM Kanngieser said; *“The biggest thing to undo is; always needing to know. We need to think how knowledge is tied to a colonizing disposition. [...] Colonization is about taking things.”* Further in that conversation Kanngieser is pointing to another important fact about changing the sounds of a place: *“There is no way to be in a good relation to place if the soundings to those places are stolen.”*<sup>33</sup>

Textiles as cultural markers and interfaces create bridges between site and time. In my woven works parts of the warp threads draping, these unwoven sections leave space for the unexpected and then return into mathematical structures to form a woven cloth. The woven codes or archives reflect in a tangible way ecological challenges and echo repetitive patterns of economic systems. Furthermore, the acoustic interpretations of textile work is underlining the performative aspect of textile crafts, creating a choreography between the textile object, its sonic memories and the body movements of the maker. The dialogue between the maker and the textile object itself inhabits a sonic and material connection that is linked to ancient textile knowledge and technologies. The rhythmic sounds of needlework influence our understanding of textiles and add to the contemporary discussions around textile labour and materiality. By repeating the same actions over and over again the weaver is creating a new choreography that resonates different work-rhythms throughout history.

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<sup>33</sup> Kanngieser, A. (2021) at CTM Festival Discourse Series, *Critical Modes of Listening*, 1:18:10

Questioning the encapsulated reverberation of a monotone sound, globalized textile patterns as trends and the repetitive codes how tend to transform natural and digital ecosystems, my research creation project expands the loops through repetition. Oscillating between beliefs and capital, the poetic structure of nature retains the woven threads of a society's cultural and economic frameworks. New ways of living will constantly emerge, even through imposed monocultures. Living things redefine themselves and diversify over time, which is the natural symbiosis of things. Nothing functions in a self-contained loop, the interactions between matter, sound and the living are the groundings of an ecosystem.



*Can you hear the ground shout? (2023-24)*



# BIBLIOGRAPHY

*Acts of Listening Lab* (2021) *Listening to the the Anthropocene* part 1, Panel with Sophie Chao, Serena Stein and Gregg Hetherington Online link:

Adeney Tomas, A., Williams, M., Zalasiewicz, J. (2020). *The Antopocene, A multidisciplinary approach*. Polity press

Attali, J. (2009). *Noise The Political Economy of Music* (Theory and). Chapter 1, *Listening* Minneapolis / London: University of Minnesota Press.

Berzowska, J. (2015) *Electronic Textiles: Wearable Computers, Reactive Fashion, and Soft Computation*, TEXTILE, Colth and Culture, Volume 3, Pg. 58-75

Candeias M. (2021). *In Defense of Plants, An Exploration into the Wonder of Plants*, Mango Publishing group, Coral Gables US

Cho, H. H. (2007) *Machine Dreams*. In *The Object of Labor: Art, Cloth and Cultural Production*, edited by Joan Livingstone and John Ploof, 67-79. Chicago: School of the Art Institute of Chicago Press and Cambridge Mass and London: the MIT Press

Cloudry N. and Mejias U. A. (2019). *The Costs of Connection, How Data Is Colonizing Human Life and Appropriating It for Capitalism* (pp. 3-35). Stanford University Press

Crawford, K. (2021). *The Atlas of AI*, Yale University press, New Haven, USA

Cox, C., & Warner, D. (2017). *Audio Culture: readings in modern music* (Revised). Part 1: *Music and Its Others: Noise, Sound, Silence*, Attali, J. *Noise and Politics*, Cage J. *The future of Music: Credo*, Murray Schafer, R. *The music of the environment*, Bloomsbury Academic, p. 7-10, p. 27-30 & p. 31-42

Fremaux, A. (2019). *The return of nature in the Capitalocene: a critique of the ecomodernist version of the 'good Anthropocene'*. In *Rethinking the environment for the Anthropocene, Political theory and socionatural relations in the new geological epoch*, edited by Arias-Maldonado, M. and Trachtenberg, Z., Published by Routledge, New York p. 19-36

Gorz, A. (2021). *Leur Écologie et la Nôtre*, Seuil Édition, Paris, Fr

Haraway D.J. (2016). *Saying with the Trouble*, Duke University Press, Durham & London

Kanngieser, A. (2021) at CTM Festival Discourse Series, *Critical Modes of Listening*, Presentations by Carla J. Maier, mêle yamomo, and AM Kanngieser & Zoe Todd

<https://www.youtube.com/watch?v=kGe0DYMroEg&t=4140s>

Kanngieser, A. (2020), *Ecofascism and Nature is Healing*, presented by Heart of Glass, With For About 2020 - Episode 2  
<https://www.youtube.com/watch?v=oSxLEHBZ0Lk&t=2737s>

Kanngieser, A. (2015), *Listening To The Anthropocene : Sound And Ecological Crisis*, Liquid Architecture, Talk at the Gertrude Street Gallery, Melbourne  
<https://podcasts.apple.com/us/podcast/liquidarchitecture/id1501072515?i=1000473814589>

Kimmerer, R.W. (2013). *Braiding Sweetgrass, Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Milkweed editions

Kim, Joo Yeol, Soo In Lee, Jin A Kim, Soo-Chul Park, and Mi-Jeong Jeong. (2017). *Sound Waves Increases the Ascorbic Acid Content of Alfalfa Sprouts by Affecting the Expression of Ascorbic Acid Biosynthesis-Related Genes*. Plant Biotechnology Reports 11 (5): 355–64. <https://doi.org/10.1007/s11816-017-0456-5>.

Lamontagne S-L., Harvey F. (1997). *La production du lin domestique au Québec, 1827-1941*, Musée national des sciences et de la technologie, Ottawa, Canada  
[https://publications.gc.ca/collections/collection\\_2018/mstc-cstm/NM97-2-7-fra.pdf](https://publications.gc.ca/collections/collection_2018/mstc-cstm/NM97-2-7-fra.pdf)

Maeder, M. (2017) *Sounding soils*, ETH Zürich, Switzerland  
<https://www.soundingsoil.ch/en/>

Maeder M, Gossner MM, Keller A, Neukom M (2019) *Sounding soil: an acoustic, ecological artistic investigation of soil life*. Soundscape Journal

McLerran, J. (2006). *Textiles as Cultural Text :Contemporary Navajo Weaving as Autoethnographic Practice*. In *Weaving is Life : Navajo Weavings* from Edwin L. & Ruth E. Kennedy Southwest Native American Collection. Kennedy Museum of Art, Ohio University, Pg 8-33

Murray Schafer, R. (1977, 1994). *The soundscape, Our Sonic Environment and the Turning of the World*, Published by Rochester, Destiny Books Distributed to the Book trade in the United States by American International Distribution Corp.

O'Neil, C. (2016). *Weapons of Math Destruction, How Big Data increases inequality and threatens Democracy*. Broadway Books. New York

Robertson, L. (2017). *Sonic textiles for health and wellbeing*. *Design Journal*, 20(5), 683–692. <https://doi.org/10.1080/14606925.2017.1349984>

Rowland, J. (2013). *Flexible Audio Speakers for Composition and Art Practice*. *Music Journal* (Vol. 23). The MIT Press, Pg. 33-36

Peterson, M. (2016) *Emergent Sound: Labor, Materiality, and Nonrepresentational Music*, Popular Music and society, Routledge, Taylor & Francis group, UK, Vol. 39 No. 3, pp. 317- 331

Pitron, G. (2021). *L'enfer numérique, le voyage au bout d'un like*, Les Liens qui Libèrent, France

Pollan M. (2001). *The Botany of Desire*, Random House Trade Paperback Edition, New York US and Toronto CA

Puig de la Bellacasa, M. (2017). *Matters of Care: Speculative Ethics in More than Human Worlds*. University of Minnesota Press

Robinson, J. M. Breed, M. F., Abrahams, C. (2023). *The sound of restored soil: using ecoacoustics to measure soil biodiversity in a temperate forest restoration context*. Restoration Ecology, the journal of the society for Ecological Restoration

Russolo, L. (1913). *The Art of Noise (Futuristic manifesto, 1913)*, translated by Robert Filliou (1967), Something Else Press, Series: A Great Bear Pamphlet, New York

Singh P, Srivastava N, Joshi N, Shastri I. (2019). *Impact of different musical nodes and vibrations on plant development*. Plant Sci. Today Available from: <https://horizonepublishing.com/journals/index.php/PST/article/view/677>

Simard, S. (2021). *Finding the Mother Tree: Discovering the Wisdom of the Forest*, Allan Lane, Penguin Random House, Canada

Sheldrake M. (2020). *Entangled Life, How Fungi make our Worlds, change our Minds and shape the Futures*, Published by Random House, New York

Wohllenben, P. (2015). *The Hidden Life of Trees*, Greystone books, David Suzuki Institute, Ludvig Verlag, München

Zuboff, S. (2015). *Big other: surveillance capitalism and the prospects of an information civilization* Journal of Information Technology 30, 75-89

Zuboff, S. (2019). *Surveillance Capitalism and the Challenge of Collective Action Life and Appropriating It for Capitalism*. New Labor forum Vol. 28 (1), p. 10-29

Voegelin, S. (2010) *Listening to Noise and Silence, Towards a Philosophy of Sound Art*, The Continuum Publishing Group Ltd, New York

# APPENDIX

Images of the exhibition presented at the MFA Gallery  
Concordia University, February 2024

Photo credits: Eric Tschaeppler



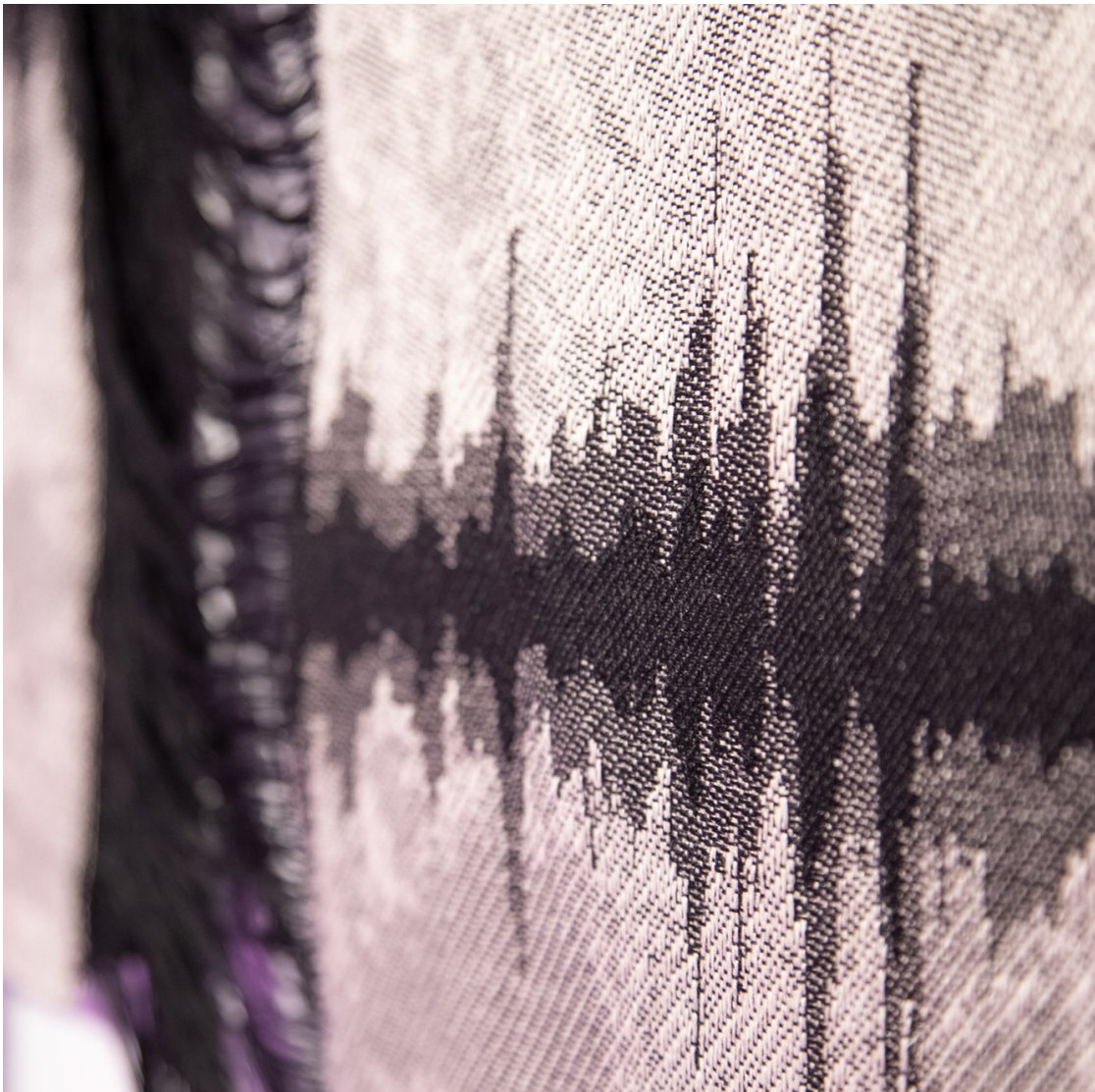




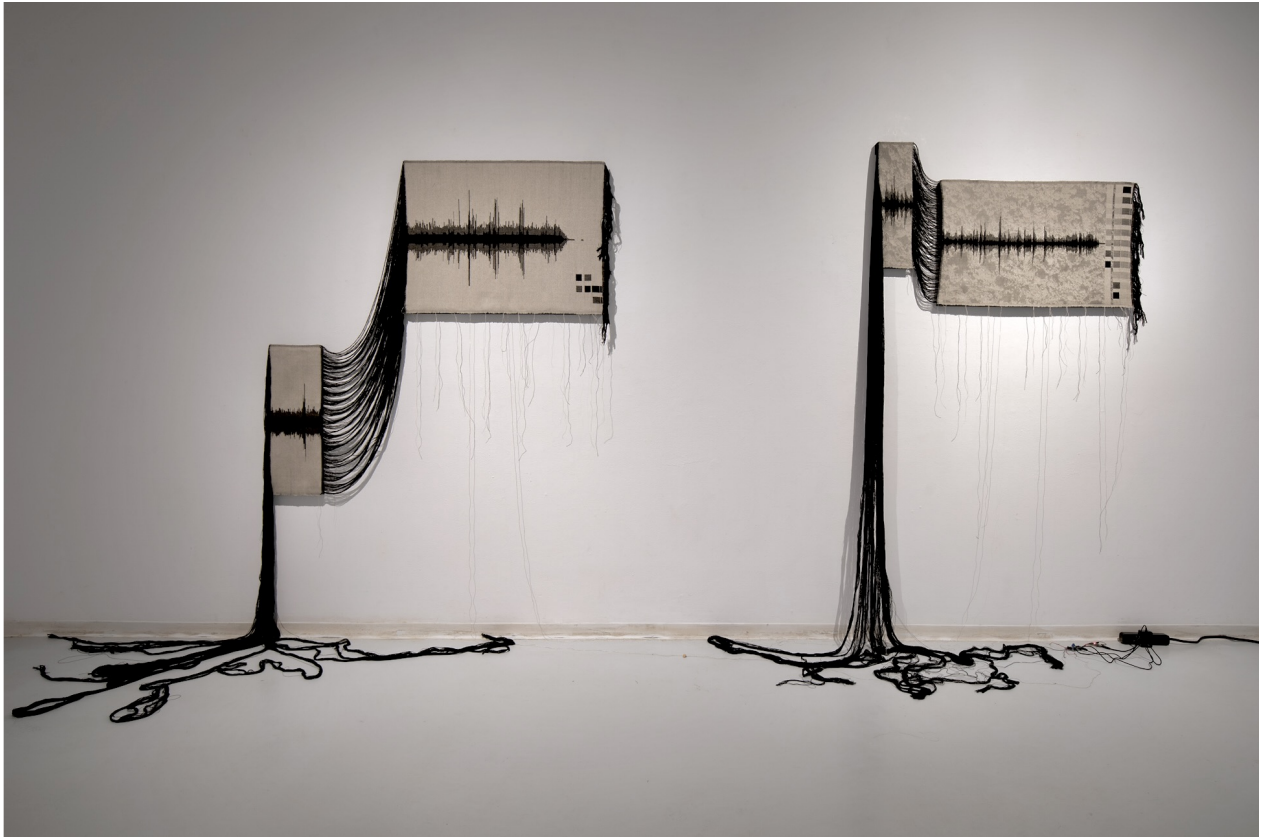
## CAN YOU HEAR THE GROUND SHOUT?

The installations showcases four Jacquard weavings illustrating the sound waves of recordings made with High-tech microphones of the underground. The weavings show unravelling edges reaching to the ground. The isolated sounds were amplified to be heard but, in the work they are played back through experimental textile speakers making them hard to hear again. This work questions the hyper-technology and cutting-edge scientific resources to watch our environment crumble without taking action.

Linen and cotton threads, conductive silver thread, industrial felt, electronic components, wood and magnet





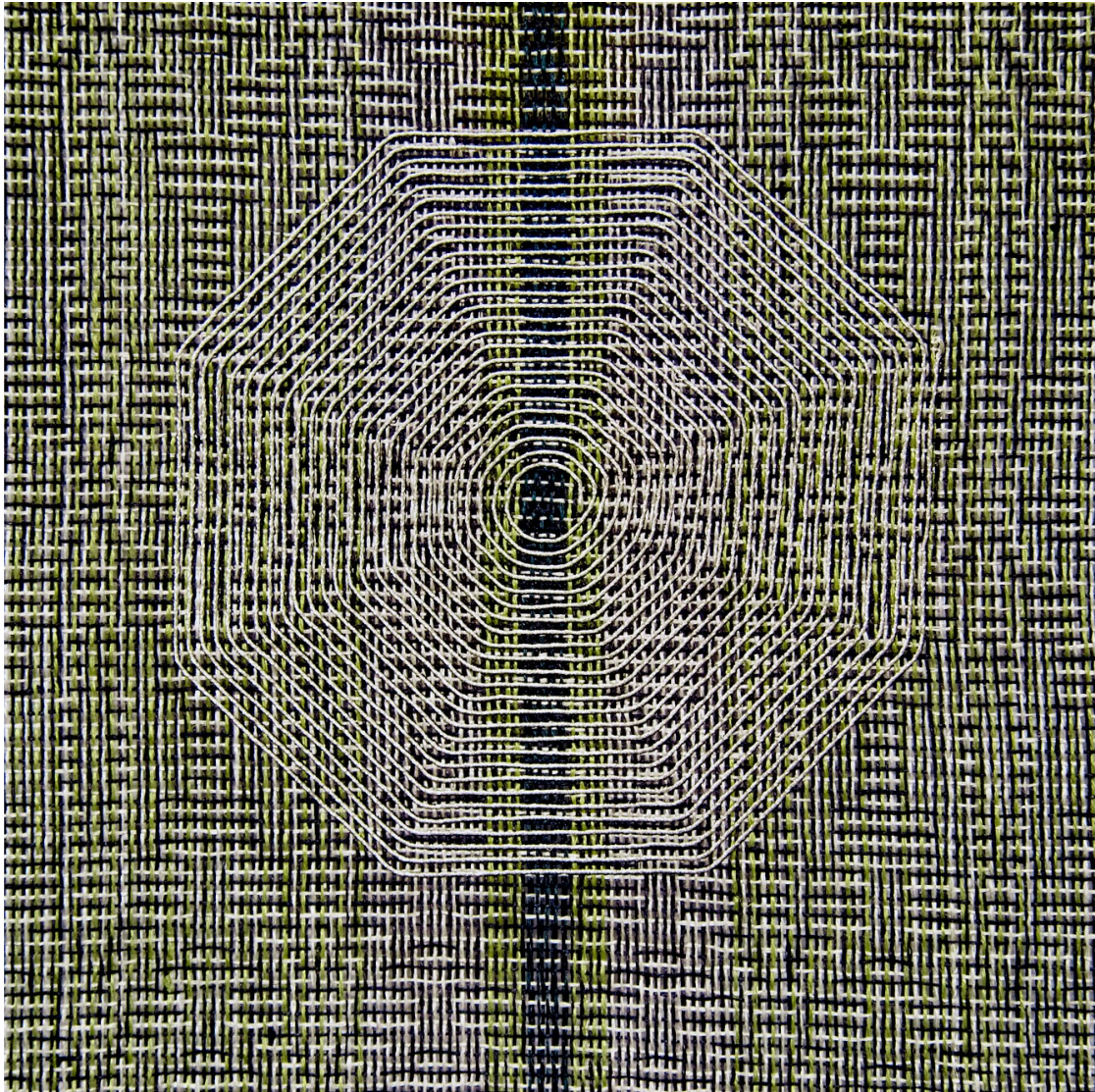




## ECHOES

The installation is composed of a single eleven meter continuous piece. Each end of the work has been woven with a shadow weave pattern. The middle part features loose warp threads unraveling on the ground. On the woven ends, experimental textile speakers have been embroidered. These sound emitters are looping sounds that seem to echo each other but the rhythms of the repeats changes into something else. The delicate hand-woven cloth is set in motion by the emitted sound waves creating a visual resonance with the soundscape.

Linen threads, conductive silver thread, electronic components, wood and magnet







## HOLDING SPACE

This three-dimensional installation links small carpet nails installed in a circular pattern on the wall to a single carpenter's nail on a block of wood placed in the space using linen thread. From a specific point of view, the shape creates the illusion of a circle that overlaps the corner. The collapsing form seems to change as you move around it, and the subtle movements of the air formed by visitors' movements make the soft sculpture shimmer. This work highlights the fragility of an ecosystem through its delicate multi-dimensional organization.

Linen threads, nails, wood







## ROOTS, ROCKS, RHYTHMS

Four plexiglas sculptures containing Flax seedlings. The plants are monitored with electronic sensors. Using surface transducers a repetitive soundscape emerges through the pots the sprouts are growing in.

Electronic components, plexiglas, soil, light

In collaboration with *Linum usitatissimum*/ Flax







## STAGING A FOREST TO GROW IN

The work is composed of two large Jacquard woven images of monoculture pine forests (*Pinus Strobus* & *Pinus Resinosa*) and a simplified forest soundscape. The installation is staging a fictional ecosystem for a small butternut tree to grow in. Using surface transducers, the soundscape emerges through the pot in which the Jung tree grows.

Linen and cotton threads, electronic components, plexiglas, soil, rocks

In collaboration with *Jugulars Cinerea* / Butternut tree





