

Being at; risk and resistance

Sonic mediations



X UNIARTS HELSINKI

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Being at; Sonic mediations

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Summary

Sonic mediations (2024) is the artistic component that was presented as part of the Kuvan Kevät 2024 - exhibition at the University of the Arts Helsinki. It is an interactive sound installation and performance that places emphasis on the interdependent relationship between human identities and the technological systems. Within this framework, the constraints imposed by these systems meet the body's unpredictable, indeterminate sonic presence. The result is a tension measured and interpreted by apparatuses that carry their own agencies and affordances.

Being at; Sonic mediations is a written component that supports *Sonic mediations* as a narrative documentation. It involves theoretical inquiry and material experimentation to reconfigure the relationship between sound, body, and space. Rather than providing a conclusive interpretation, the document traces the project's conceptual evolution with theory, practice, and embodied experimentation.

The initial segment, *Starting points*, synthesizes a wide range of conceptual resources, including phenomenological perspectives on embodiment, critical feminist interventions into craft and tactile knowledge, and experimental approaches to sonic materiality. These theoretical frameworks provide a foundation for approaching acoustics by challenging conventional modes of sensory prioritization and representation. The subsequent section, *Unfolding*, outlines the processes by which these conceptual models were translated into a site-specific installation and performance context. This phase details the construction of the wearable e-textile apparatus, embroidered speaker systems, interactive installation and the performance.

Sonic mediations positions sound not as a neutral transmitter but as an active participant shaping relationships, thereby foregrounding the critical potential of instability, risks and vulnerabilities. By embracing diffractive patterns of interference and fragmentation the project destabilises static assumptions regarding both technological and sonic forms. This written component documents an ongoing research on how sound and technology mediate spatial perception, orientation, and interaction.

Fact Sheet

Artistic component:

Sonic mediations (installation)

2024

consist of:

Untitled apparatus I

Hand weaving, crochet, embroidery and electronics

Silk, cotton, linen and steel fiber

2024

Untitled apparatus II - IX

Embroidery

Beeswax, brass, cotton, magnet, beechwood

2024

Untitled apparatus X

Brass

2024

Sonic mediations (performance),

length approx. 10 - 15 minutes

2024

performed

at the opening: Friday 3 May at 5 pm

& Saturday 18 May at 3 pm

Date of the exhibition:

4.05.2024 to 2.06.2024

Supervisors:

Jan Schacher and Sanna Lehtinen

Examiners:

Koray Tahiroğlu and Dominik Schlienger

Introduction

For Pekka

To begin, this written component traces the **starting points** and the **unfolding** of *Sonic mediations*, a project that has become central to my artistic practice. Rather than serving as a traditional analysis, this text documents the interplay between theoretical inquiry and creative exploration, each guiding the other in an ongoing process.

It is essential to highlight the foundational aspects that existed prior to this project and how they have been transformed and integrated through the making of *Sonic mediations*. Organising my thoughts into words—a task that paradoxically runs counter to the project’s inherent fluidity—I recognise that this process may inadvertently constrain the work’s potentiality and uncertainty. Nonetheless, this condensed document aims to illustrate how thinking translates into practice and how, through making, thinking itself evolves. Despite its contextualisation, this documentation captures a process that continues to unfold.

This document is structured so that the first half, *Starting points*, gathers the themes and theories that have played an important role in the realisation of *Sonic mediations*. However, I must note that this part is condensed and edited, as the research conducted spans many fields and theories not necessarily directly connected to each other. My research style is fragmented and transdisciplinary, and writing without a specific research question inevitably results in a scattered quality. This part is followed by *Unfolding*, which specifically opens up parts of the process of building the apparatuses and realising the installation and performance presented at Kuvan Kevät 2024.

The original idea for this written component was to present a non-linear fragmented collection of concepts that are interconnected with each other therefore introducing the document as a “kudelma” in Finnish translated in English loosely as a type of a fabric or an entanglement. It is important to note that throughout the core text, I have included notes written during the process.

They encompass thoughts documented during courses on *Real-Time Gestural Interaction*¹ and *Exploratorium on Sonic and Corporal Gestural*², as well as notes transcribed during the making of *Sonic mediations*.

Two concepts introduced by Dragan Espenschied—*narrative documentation* and *blurry objects*—are particularly relevant to this written component.³In the context of my work, narrative documentation captures the transformation from a static artefact to a dynamic performance, revealing elements that transcend mere physical form. By focusing on a singular occurrence—the piece transitioning from its “switched-off” state to its “switched-on” state—we explore the moment it becomes more than an object; it becomes an experience. This shift brings forth ephemeral and intangible aspects that can’t be fully captured by the object alone, highlighting the complexity of its interaction with surroundings and participants. Thus, this document functions as narrative documentation of the process leading to the exhibit, viewed from the artist’s perspective.

Regarding blurry objects, I aim to emphasise that certain parts of my artistic work possess a blurriness. Espenschied points out that this blurriness arises from the use of distant resources which, because of their structure, purpose, variability, and scale, cannot be fully accessed, preserved, or owned. In this sense, many processes in the artwork can only be perceived in performance rather than through documentation as a standard object.

Starting points

¹ The course was thought by my supervisor Jan Schacher . Real-time gestural interaction was a course organised for four months, though once in a month and involved time for independent work and exploration.

² The Exploratorium organised by Marianne Decoster-Taivalkoski and Jan Schacher became an important part of my process in the 2024 spring term. During the meetings many of my observations related to movement, object-subject relationships and how sounds were formed.

³ **Dragan Espenschied** *In between performance and documentation in Documentation as Art* ed. Annet Dekker and Gabriella Giannachi (Routledge, 2022)



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04:49 / 09:36



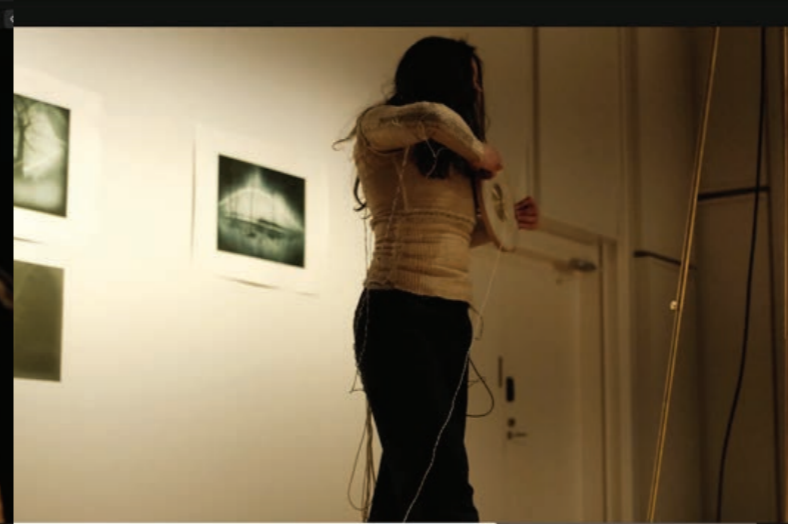
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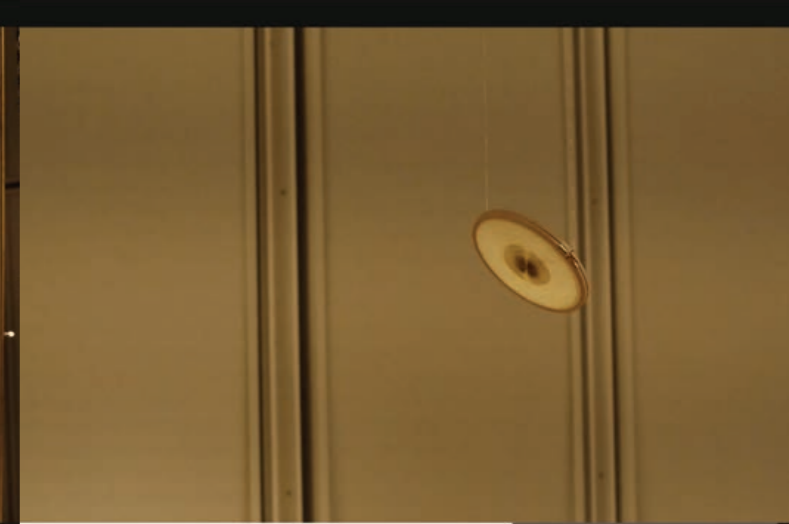
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Foundations and Transitions

Sonic mediations began out of curiosity and a deliberate willingness to embrace uncertainty in the process. I allowed myself the freedom to move fluidly between disciplines, using my previous practices not as rigid frameworks but as dynamic tools to engage with new modes of working and thinking. This approach was driven by an orientation towards understanding gestures as they are transmitted through materialities—a theme that had long fascinated me, particularly in relation to craftsmanship and textile practices.

Textile art, deeply connected to the human body and rich in history as both a functional craft and an expressive art form, has been a major focus of my work. With a background as a fashion designer specialising in knitwear, my interests had grown deep in researching structures and contemporary craftsmanship. The tactile, labor-intensive nature of textile practices—manual work with material, repetition, and the resulting dexterity—has intrigued me. These manual practices are not solely about producing objects but can be deeply rooted in the body, the flesh, and its memory, forming knowledge around the material through these moments of collaboration. This embodied knowledge passes down through generations, transmitted orally and through practice, akin to a living history rich with cultural and personal significance.

In 2021, I earned my Master's degree in Fashion from the Royal Academy of Fine Arts Antwerp, where my thesis explored phenomenology and embodiment, focusing on Maurice Merleau-Ponty's philosophy, in relation to craftsmanship. In my research, I conceptualised a companionship between the maker and the material, highlighting how these interactions shape the creative process. However, traditional phenomenology often overlooks the diversity of embodied experiences. It dismisses the fact that bodies and their being is different depending on gender, class, race etc. As a result, I began engaging with feminist critiques, which enabled me approach phenomenology from a more critical perspective. This shift allowed me to incorporate theories that acknowledge differences in experience, particularly in relation to touch, skin, and the contours of bodies and objects, recognizing that space is not merely external, but something that is felt and embedded in

the body itself.

As I transitioned towards my artistic component, I sought to expand my thinking not solely through the theory but by integrating new forms of practice. A significant shift occurred when I intuitively enrolled in a course on Real-Time Gestural Interaction (RTGI) at the Music Technology Department of the Sibelius Academy. This spontaneous decision marked a turning point, allowing me to approach my work from a different perspective while finding conceptual similarities adapted to a different medium. Despite having no in-depth experience in coding, building electronics, or working with sensor technologies, I found myself in a position of exciting vulnerability—where the challenge of learning new skills paralleled the reflective process of integrating these skills with the craft-based knowledge I had obtained.



Textile study from 'things in between' group exhibition at Vapaan Taiteen Tila, September 2023, Helsinki, Finland.



Embroidering a coil for Untitled apparatus II.

Sound

My interest in sound, which would become central to *Sonic Mediations*, has roots that extend back to my early childhood experiences with play and classical music education. My first attempts at making music involved drumming, singing, and recording. I played with two handheld drums—a tbilat, a pottery drum with stretched skin—and my father’s old Yamaha DD-6, which had a library of digital percussion sounds. I recorded songs on my mother’s portable tape recorder, inadvertently overwriting parts of her archive and fragmenting her interviews.

As I moved into formal education, I encountered a strict adherence to the rules and structures of classical training. I felt increasingly constrained by these limitations, particularly the lack of interpretation and improvisation. This tension reached a breaking point, leading me to rebel against the rigid structures and ultimately abandon my formal education in classical guitar. I sought instead more liberated forms of expression.

This rebellion did not mark the end of my relationship with sound but rather a transformation. In early adolescence, I began to explore sound as texture, experimenting with recording, modifying, and transforming them through digital processes. Influenced by my growing interest in avant-garde music and the materiality of sound, I began to perceive composing not just as music but as atmospheres—auditory environments that could evoke soundscapes and narratives without the need for conventional communication or musical structure.

Despite these engagements, sound remained a somewhat separate practice from my visual and material-based work—until 2021, when I visited Shilpa Gupta’s exhibition at MhKA Antwerpen.⁴ It was here, particularly in her work “Singing Cloud” (2008), that I encountered a well-executed integration of sound and sculptural form. Gupta’s piece—a large, cloud-like structure composed of thousands of microphones with a 48-channel audio installation—created a visceral experience of sound that was both immersive and disorienting.⁵

4 **Retrospective of Gupta’s work** 21 May 2021 - 12 September 2021 in Antwerp, Belgium.

5 **Shilpa Gupta, *Singing Cloud*** accessed September 10, 2024, <https://shilpagupta.com/singing-cloud/>

The way this sculptural object interacted with space and the bodies within it—projecting sound spatially while also physically occupying space—left a lasting impression on me. It demonstrated how sound could be used not just as an auditory experience but as a sculptural element carrying a political message. The piece conveyed a layered narrative, that studies fragmentation of human perception.⁶ By its presence, the story told through multiple layers of echoes altered and resonated within the environment it inhabited.

From Gupta’s installation, I contemplated how sound relates to the visual. Being invisible, sound doesn’t have a perceivable form but is visible through its effects⁷—what it touches or what is being touched. In Gupta’s installation, the effect wasn’t visually perceivable but sensed through hearing and the locality of the sound rippling over and around the cloud. It created a spatial observation of something or someone moving in space yet not being seen, indicating listening as a mode of observation and navigation.

This encounter catalysed a shift in my thinking as I began to speculate on how sculptural practices could be reimaged through non-traditional materialities like sound. This led to an inquiry into the relationship between objects and the spaces they inhabit. From the beginning of my MFA studies, it was clear that I wanted to explore ideas around sculpting not just with physical materials but with space itself—considering how objects, things, and actors interact with their surroundings, how they are perceived and experienced, and how they can create dialogues within.

Notes for the RTGI class:

25th of September

...I would like to find a way to combine sound to space or physical things. Maybe in that way create some instruments or have a space as an instrument? maybe having as an output some surface transducers.

I expect this course to spark some new paths, maybe give some answers or directions to find ways to connect sound with the physical in an interactive way. Also

6 **Shilpa Gupta – *Singing Cloud*, 2008 - 2009, MhKA Ensembles** accessed September 10, 2024, <https://ensembles.org/items/9759>

7 **Don Ihde, *Listening and voice* (SUNY Press, 2012), 54.**

maybe to understand how to use the collected data in different artistic purposes and I would like to approach it as a tool rather than fetishising the technology as an aesthetic...

Listening

Every sound we make is a bit of autobiography. It has a totally private interior yet its trajectory is public. A piece of inside projected to the outside. The censorship of such projections is a task of patriarchal culture that divides humanity into two species: those who can censor themselves and those who cannot.

Anne Carson, *Glass, Irony & God*, (New Direction, 1995), 130.

Sounds are meant to be heard, and to be heard is inherently to become noticed. It is the act of projecting something internal into the external world, turning the invisible into something visible. The difference between being seen and being heard lies in the nature of these perceptions: visibility often leads to objectification, while sound invites subjectivity. Jonathan Sterne highlights this distinction by noting that sounds come to us, while vision actively reaches out to its object.⁸ Thus, hearing is not a violent act of objectification but a passive form of reception. Listening, in contrast, is an active, intentional process that seeks for active and reflective reception.

Sounds arise from impulses, events, and interactions between materials in constant flux. Even when we are still, the soundscape remains in motion. We often focus our attention on carefully composed and structured sounds, missing those that fall outside these constructed sonic frameworks. In the context listening it is not about extracting or constructing soundscapes, but about encountering sound through the unfolding of events and interactions—whether human or non-human.

Listening, like vision, makes the invisible present, yet it is a conscious, intentional act. Pauline

⁸ Jonathan Sterne, *Audible past* (Duke University Press Books, 2003.), 15.

Oliveros, in her *Quantum Listening* manifesto, distinguishes hearing from deep listening, the latter being a radically transformative form of activism. She posits that how we listen shapes our consciousness and argues that listening connects us to the world in an interdependent way.⁹ Therefore it could be approached not only as a mode of hearing but as a receptive state that is active in all senses. It is a mode of sensitivity.

...I simply put a microphone in my window and recorded the sound environment until the tape ran off the reel. When I replayed the tape, I realized that although I had been listening carefully while I recorded, I had not heard all the sounds that were on the tape. I discovered for the first time how selectively I listened, and that the microphone discriminated much differently than I did. From that moment, I determined that I must expand my awareness of the entire sound field.

Pauline Oliveros, *Software for People: Collected Writings 1963–80*, (Smith Publication, 1984), 182.

.Listening becomes crucial in sculpting space, helping us identify points where sounds naturally unfold. As we navigate through space, we don't only rely on vision but actively listen to the environment around us. Our orientation therefore navigation in space relies heavily on the acoustic feedback. This idea aligns with Sara Ahmed's concept of orientation, her writings speaks directly to my practice and is reflected in the conceptual framework of Sonic mediations throughout this written component. I will expand on her concept more and through out this paper. The ways how we hear and how we listen depends on our orientation to things, as Ahmed puts it, on *how orientations shape how matter 'matters'* to us.¹⁰

Sound, by its nature, is fluid, interacting with us without permanence or stability. It is transient yet material, moving through space and touching our bodies as it passes. Listening is a bodily experience—sound exists momentarily but leaves an impact, formed by the movement and occur-

⁹ Pauline Oliveros, *Quantum Listening* (Silver Press, 2024) 31.

¹⁰ Sara Ahmed, *Orientalism Matter*, in *New Materialisms* ed. Diana Coole and Samantha Frost (Duke University Press Books, 2010), 234.

rences around us. We experience space through sound, and listening is a form of engagement, not just perception. It draws us toward something, not through observation alone, but by responding to the sound when it speaks.

Contingency in Sound

The wind is seen in its effects; its visible being is what it has done passing by.
Don Ihde, *Listening and Voice* (SUNY Press, 2012), 51.

When we say we can hear the wind, we perceive it passing through the trees, touching their leaves, brushing against buildings, circulating in the streets, and flowing through rain drains. It is the sound of wind sweeping over the surfaces of these materials. Like the wind, sound as a phenomenon is both transient and dynamic. Unlike the stability of physical objects, sound is characterised by its constant movement and impermanence. It manifests through vibrations that interact with bodies and spaces, making its presence felt momentarily before dissipating.

Transitory in nature, sound contrasts with the material stability associated with objects, yet it possesses a materiality that can be sensed. Sound touches and reverberates off surfaces, bodies, skins, and spaces, creating a tactile event tied to the body's orientation and engagement with the surrounding environment. Experiencing sound is intimately related to the body—how it situates and orients itself, and how it hears or listens. The body breathes and transforms breath into sound, acts, and causes interactions. Sound has a materiality born from action, from events. These events—these effects¹¹—are observed and navigated through bodies and things in space.

Contemplating how to connect sound with objects and spaces, I began to speculate on the qualities of sound as contingent matter and conversely as an object.. Sound, by its nature, is uncertain and unpredictable, yet it holds immense potential. It is a porous phenomenon existing in a state of possibility—emerging, evolving, and decaying, often without being fully perceived. As contingent, it aligns with the idea of sound being in relation to objects, where sound is an effect of

11 Sterne, *Audible past*, 65.

one object in friction with another.

When considering sound from the perspective of a hyperobject¹²—a term coined by Timothy Morton to describe entities massively distributed in time and space relative to humans—sound can be seen as something always in motion, in a state of becoming, never fully graspable in its entirety. As a hyperobject, sound is a phenomenon that exceeds the human scale of perception, stretched in time and incomprehensible in its totality.

I began thinking about recording as a way to grasp this phenomenon. Since sound is not contained but bound to its source, it becomes an object only when separated from its semantic meaning; it becomes a sound object when it no longer functions merely as a medium.¹³ Cutting the sound from its source through technological means involves recognizing sounds as situations of hearing and capturing. Thus, sounds become objects when we define them—when we record them, detaching and slicing them from the hyperobject state to classify them.

The idea of sound as an object becomes even more apparent in digital audio processes. In digital media, sound is captured, manipulated, and reproduced as discrete objects—bound to timescales examined through human perception.¹⁴ These sound objects, detached from their original contexts, take on new meanings and functions, becoming artifacts that can be analyzed, classified, and recontextualized. This transformation shifts sound from being a fleeting, contingent phenomenon to a more stable, yet still dynamic, object. Stretching sound and its timeframe through digital means enables it to become abstracted from its source, with fragmentations in timescales that go beyond human experience.

To further explore the relationship between objects, their use, and our perception of them, I turn to Sara Ahmed's interpretation of Heidegger's concept of the hammer.¹⁵

Ahmed explains that objects often act beyond our intentions; they possess their own modes of being. Heidegger distinguishes between using an object and consciously perceiving it. Using the hammer as an example, he notes that when we are actively employing it, the hammer is “ready-

12 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (University of Minnesota Press, 2013), 70.

13 From a journal entry of March 1948. Pierre Schaeffer, *A la recherche d'une musique concrète* cited by Brian Kane in *Sound Unseen: Acousmatic Sound in Theory and Practice* (Oxford University Press, 2014), 16 - 17.

14 Curtis Roads, *Microsound* (MIT Press, 2001), 4-5.

15 Sara Ahmed, *Queer Phenomenology*, (Duke University Press Books, 2006), 47.

to-hand.” It is immediately accessible because it enables us to accomplish specific tasks, and this accessibility is tied to its usefulness.¹⁶ This state is significant in understanding the essence of the hammer. Engaging with an object as a tool involves a particular way of perceiving, different from simply observing it without considering its function.

When the hammer ceases to function properly—when it breaks or fails—it becomes “*present-to-hand*.” We begin to perceive it differently, not just as a tool but as an object that no longer serves its intended purpose. This disruption prompts us to see the object in a new light, as something that does not facilitate our goals.¹⁷

I include this analysis because Ahmed’s examination of Heidegger’s hammer is compelling in the context of sound objects and the idea of objects in use. An object, by its embedded use—as Heidegger describes as “*ready-to-handness*”—serves our conventional expectations. A sound object is ready to convey something we already anticipate. However, when we shift to the idea of “*present-to-handness*”—when the use and function are not definitive—the object presents itself as a possibility, as something unknown.¹⁸ It is disrupted in its qualities but unfolds an unstable mode of engagement, becoming a learning curve for discovering the unknown. Graham Harman, in his object-oriented ontology, suggests that objects possess depths not exhausted by their relations or uses.¹⁹ This implies that objects hold realities that remain inaccessible, which art can explore and hint at but never fully reveal.

Notes from Exploratorium:

Objects—their shapes, forms, and materialities—have embedded patterns for expression. Some have direct limitations; for example, a drumstick—with its tip and body—guides you toward a drumming action. However, material irregularities applied to its body add another layer of guidance through surface disturbances, enabling imagination of other engagement possibilities. In this case, liberating the drumstick from its drumming role gives it the potential to become a bow, for example.

16 Ahmed, 47.

17 Ahmed, 48.

18 Ahmed, 48-49.

19 Graham Harman, *Art and Objects (Polity, 2019)*, 25 - 27.

How you hold the object affects the relationship and the sounds that emerge. Your orientation toward the object, and how you interact with other objects, creates new structures and patterns to explore—always dependent on and affected by your location in space. Thinking of these objects, bodies, and things as setting parameters where elements meet and may sound together. The relationships change and are never fully repeated—evolving with each encounter.

Ultimately, experiencing or generating sound as a contingent phenomenon or as a stable object is a complex interplay of all the sensible things and matter present and beyond. Objects present themselves with affordances, but it’s about perspective—the ways we listen to them—the means of reception. Even when listening to a specific sound object, it’s never heard in isolation; it collides and blends with others. Experiencing sound isn’t just about hearing; it’s about deliberately perceiving things as they are, not necessarily seeking to define but listening as it comes.

This led me to think about listening, particularly in relation to space and embodiment, as I sought to understand how we interact with and interpret objects and spaces in all modalities. I began to conceive of sound as a medium of relationships—something that mediates between things and connects them, linking and calling different points in space together. The negotiation of space through subjects listening and responding, and how the response as action circulates in space, touches others, bounces off, and returns.

Tinkering as Methodology

Prior to *Sonic Mediations*, I had been engaged in researching archives, particularly digital archives, and the philosophical questions surrounding them. The technological mediation we live with in our cultures enables us to reflect on the affordances of recording and reproduction, as in

building the archive. In the technical aims, things and information tend to disappear, and therefore the reproduction is never the lived experience.²⁰ Similarly, the history an archive presents is just a faint picture of the event, filled with blind spots due to the curatorial power of archiving. Archives add up to comprehensive scheme of knowledge as relying on evidence, taxonomy and certainty. As a patriarchal systems, they aim for informing a body that understand itself as individuated, rational, knowable and not the feminine, referenced as something savage, leaky, uncontrollable bodies of things that has to be tamed as Salome Voegelin puts it.²¹ Archives, however, even as violent systems are fractured and fragmented, and yet they can be recontextualised.²² The digital has increased these qualities. A living archive comes across to me as possible contemporary conditioning of archiving.

My interest in archives was sparked by analyzing Jacques Derrida's "Archive Fever," which led me to the concept of the living archive. Derrida discusses the politics and power dynamics inherent in the creation and curation of archives—what is preserved, what is erased, and the violence that occurs in these decisions.²³ His concept of archival violence, accustomed through the act of erasure by the power dynamics of knowledge and construction of the common; the we and the laws determined by the archive.²⁴

To dismantle an archive is to tinker with its structures—to cut it into pieces despite its history and reconfigure the pieces into a new form. Finding new meanings from the living archive led me to the concept of tinkering, which I began to implement as a methodology in my practice. Tinkering, in this context, is not merely about fixing something that is broken but is a form of creative experimentation that challenges established norms and structures of making. It is a methodology that is unconstrained by the dichotomies of right and wrong, of success and failure, allowing for a speculative and exploratory approach.

As I engaged in this process, I began to see the marks I left—whether on materials, in space, or in the form of sound—as documents of a trajectory. These marks are not just physical traces

20 **Walter Benjamin, *The Work of Art in the Age of Mechanical* (Penguin Books, 2008), 10-12.**

21 **Salomé Voegelin, *Uncurating Sound* (Bloomsbury Academic, 2023), 73.**

22 **Annet Dekker, *Lost and Living* (in) *Archives, Collectively Shaping New Memories* (Valiz, 2017), 12.**

23 **Jacques Derrida, *Archive Fever: A Freudian Impression* (The University of Chicago Press, 1996), 4-7.**

24 **Derrida, 41.**

but represent the ideas and insights gained through the process. They are subject to interpretation and can be understood differently depending on the context and perspective of the observer. This fluidity in the interpretation of marks mirrors the dynamism of knowledge and understanding—how what we perceive as truth can shift over time, influenced by our context and the knowledge systems surrounding us.

Tinkering²⁵ as a methodology is not just about making and creating but also about redefining and reinterpreting the invisible and visible. It is a process of questioning and experimentation, where the making becomes a way of navigating the unknown, of finding one's own path through the mass of knowledge and information. I spent significant time during the project learning and gaining knowledge through this kind of experimentation with fields like electronics, coding, computer interaction, and data processing. This learning process was itself a form of tinkering—a way of engaging with new tools and technologies, not as a means to an end but as a way of exploring possibilities.

Living

Returning to the living and the everyday in the historical context of art, it's particularly interesting to examine the late 1960s to 1970s artistic activities, where we see the emergence of the everyday in arts within the Western canonical framework. During the formation of my initial concepts for *Sonic mediations*, I looked art-historically at the emergence of the everyday in artistic practices, focusing on movements like Fluxus and Arte Povera. These movements were actively bringing the ideas of living, life, and performativity into artistic practice in the post-war landscape.

Within Arte Povera, Marisa Merz occupied a unique position. Though the only female member in a predominantly male movement, she consciously positioned herself on the margins, carving out

25 I came to tinkering from **Claude Levi-Strauses** theory on *bricolage* (and the bricoleur). However I find Levi-Strauses theory problematic for overemphasizing structure and posing binary divisions (like savage/civilized), not taking account cultural appropriation and not undestaning that cultures and societies could be fluid. Therefore I prefer to conceptualise tinkering outside the anthropological framework.

a distinct path.²⁶ What set her work apart was the way it fully intertwined with her everyday life. Her art didn't exist for galleries or studios—it spread throughout her home, becoming her home, as exemplified by her work “Untitled” (the “Living Sculpture”) taking over the family kitchen.²⁷ Merz chose to stay at home to raise her daughter, and this domestic focus profoundly influenced her artistic practice.²⁸

Her art was not only personal but it was highly processual. Rather than focusing on her work coming to an end a static post she was constantly transforming reprocessing, her art as about living. In that way her approach to processuality was in connection with the temporality of existence, the autobiographical dimension and the actual measures of the body writes Lara Conte.²⁹ Having a late start as an artist Merz is best known through the iconic work ‘Living sculpture’, an organic form made from aluminium slabs, was an unexpected and unconventional artwork at the time, deeply tied to its environment and reflecting the lived experience around it. This work, like much of Merz’s practice, embodied her idea of art as a process rather than a finished product. She never dated her works and often revisited and reworked them, allowing for transformation and permutation. In this way, Living sculpture resisted being static; it was reimagined with each installation, giving it a performative, dynamic quality. The laborious process behind her art was central to her work, with the presence of her body and her relationship to the materials subtly embedded in the final pieces.³⁰ While not explicitly performative in a traditional sense, her art carried the essence of performance, with the private, repetitive gestures of creation made visible through her works. In this way, her works come together as a landscape of the self³¹—an intimate, person-

26 **Silvia Bottinelli** *‘I do think this idea of self-representation or the idea of self-marginalisation is one that comes with a critique of context. What could have been the place of women in the Italian context of 1960s, if not one that was marginal? And so maybe being at the margins allows for some sort of autonomy and that’s the space that she (Marisa Merz) chooses to inhabit because it’s a place where she can actually find a degree of independence.’* in a panel discussion of **The Production of the Self: Conversations about Marisa Merz** series moderated by **Amanda Sroka** and **Lara Demori** September 16, 2020, by **Philadelphia Museum of Art**, YouTube, **20:51**, <https://youtu.be/aNd0PGWOIFE?si=AFrRM6LAjCfR6JR>

27 **Lara Conte**, **Marisa Merz: Sculptural and Film Experiments in the Kitchen, 1967-1978** moderated by **Amanda Sroka**, September 16, 2020, by **Philadelphia Museum of Art**, YouTube, **39:19**, <https://youtu.be/ghH4JK0CpXg?si=wiJPV0bW6E1qzkOn>

28 **Conte**, **29:34**

29 **Conte**, **Now We Have Seen: Women and Art in 1970s Italy** (SilvanaEditoriale, 2024), **81**.

30 **Conte**, **Now We Have Seen: Women and Art in 1970s Italy**, **79**.

31 citation of **Germano Celant** presented in **Luigia Lonardelli**, **Marisa Merz as Anti-Penelope** moderated by **Amanda Sroka**, September 30, 2020, by **Philadelphia Museum of Art**, YouTube, **25:03**, <https://youtu.be/blalYJsymj0?si=89-ONvpoON5eWhHi>

al scattering.

Her approach influenced my reflections on the significance of materials and what they can communicate through their context and transformation. It was typical to Merz to bring industrial materials like aluminium, copper and wax to the domestic space, as she was working in home.³² Merz once stated that her piece “Untitled” serves as an index of the time she spent caring for her daughter, Beatrice. I resonated with this idea of transferring time, documenting life in the material structures of an artwork.³³

Mediation

Mediation is an act or process of mediating. According to Merriam-Webster’s three definitions, it is: I. an intervention between conflicting parties to promote reconciliation, settlement, or compromise; II. indirect conveyance or communication through an intermediary; III. transmission by an intermediate mechanism or agency.³⁴ I like to think about mediation as an interactive process—not solely as a process of transmission but also as a process of reception, of negotiations.

The contemporary condition of bodies and technologies has led me to explore the field of post-phenomenology, particularly in the context of technologies as the primary form of experiencing the world. As a critique of traditional phenomenology, post-phenomenology highlights technological mediation in the formation of human-world relationships. Don Ihde argues that understanding technology as an active mediator has important implications for how we think about the use of new technologies, particularly in the context of forming identities and orientations, but also in contemplating creative freedom in practices.³⁵ It raises questions about the ethical implications of technology, particularly in relation to issues like surveillance, data collection, and the commod-

32 **Silvia Bottinelli** and **Sharon Hecker**, **Lead and aluminum in Marisa Merz’s Art. Layers of meaning** moderated by **Amanda Sroka** and **Lara Demori**, October 14, 2020, by **Philadelphia Museum of Art**, YouTube, **10:38**, <https://youtu.be/tr7nbkFLgcE?si=8qepXPc56kcJVULO>

33 **Teresa Kittler** **“Marisa Merz: Actions, Interactions, and Performative Sculpture”** moderated by **Amanda Sroka** and **Lara Demori**, September 23, 2020, by **Philadelphia Museum of Art**, YouTube, **19:39**, <https://youtu.be/CpuyUuAYN8c?si=DXMFyWIEWM711jzL>

34 **“Mediation”**, **Merriam - Webster**, <https://www.merriam-webster.com/dictionary/mediation> accessed 8th of September 2024

35 **Don Ihde** and **Robert Rosenberger**, **The Critical Ihde**, (SUNY Press, 2023), **122**.

ification of life. These concerns are central to contemporary debates about the role of technology in society, and they will also become deeply relevant to my work as I explore how technologies relate to the body. Understanding that technology is not a neutral tool but is constructed and embedded with morals, we see that as one lives through technological mediation, one communicates with and understands the world through these embedded patterns.

In her presentation at The Rhythmic Music Conservatory in Copenhagen, Denmark, Salomé Voegelin discusses “*patterns of expression*,” a concept presented by Aníbal Quijano in his essay “Coloniality and Modernity/Rationality.” Quijano describes patterns that produce knowledge and meaning and that not only facilitate the cultural production of the dominators or colonizers but also serve as efficient means of social and cultural control.³⁶ Voegelin connects this pattern-making to patterns of expression that affect how one curates work and how the curation of work creates possibilities of knowledge-making, display, and habits in reading knowledge. She highlights the importance of being aware of these patterns and breaking these patterns of oppression. These patterns are never neutral. Similarly contributing to this discourse and returning to post-phenomenology, Peter-Paul Verbeek introduces the concept of moral technologies as objects and tools that shape our behaviour and beliefs through their design, how they take shape, and how they pattern our behaviour.³⁷

Another writer I will discuss more about later in relation to orientations, Sara Ahmed, has interesting insights into technological mediation from the perspective of orientations and apparatuses in the context of a writer’s practice.³⁸ In her essay, Ahmed analyses how we orient ourselves in space and toward objects, how the objects and spaces shape us, and how they start to “matter” to us. Objects—their materiality—shape both our bodies and identities, physically and conceptually. The design of spaces and objects, and for whom they are designed and by whom, affects the likelihood of orientation and attraction within them.³⁹

Ahmed argues that if matter is affected by orientations—by the ways in which bodies are

36 Salomé Voegelin, *Sonic Possible and Impossible Bodies: uncurating knowledge*, Keynote lecture during the conference **WHAT SOUNDS DO: New Directions in an Anthropology of Sound**, September 13, 2022, by Rhythmic Music Conservatory, 40:38, <https://youtu.be/5aBAetOiyVM?si=3Ps1EAtxQ48c3ITG>

37 Peter-Paul Verbeek, *Moralizing Technology*, (University of Chicago Press, 2011), 139-140.

38 Sara Ahmed, *Orientations Matter*, 250 - 251.

39 Ahmed, 235.

directed toward things—then to sustain certain orientations, such as her own orientation to write, certain objects must be available to practice it. Therefore, what she does, being oriented to writing, affects the way the world shapes around her.⁴⁰ According to Ahmed, being oriented in a certain way enables certain things to become more significant and to become objects to her. Similarly, she connects this idea to spaces, suggesting that certain bodies can find “their place” in some spaces and not in others.⁴¹ I will expand more on orientations in space later, but in relation to mediation, I am interested in how these patterns that guide our orientations affect what bodies will do. And what the body is doing will affect how the body takes shape.

In the case of a writer’s labor, the writer’s tool has shaped the body, but also the writer’s inclination—the drive—is forming their intentions toward the pen. The impressions on the body carve out a deeper inclination toward the labor of writing. The memory in the flesh, through repetition, embeds the action and the desire of writing into the writer’s body. This technological tool has, in ways, become part of the body that has slowly started to form itself around the device.

Thinking about a tool, instrument, or apparatus as an intermediary that mediates communication through a gesture or action enables us to consider human-world relationships through the lens of negotiations. For example, producing a sound involves mediation between an intention and a gesture, mediated through a tool in relation to a surface—such as the body of a musical instrument—to transform it into a sonic response. In this context, I find it relevant to discuss the concept of action-sound coupling, introduced by Alexander Refsum Jensenius, which I became interested in while attending Real-time Gestural Interaction (RTGI) course.

In the context of acoustic instruments, Jensenius conceptualises an action-sound coupling, which typically consists of a vibrating body of an instrument and tools for playing; these various objects facilitate the transmission of gestures into sound.⁴² Jensenius highlights how this interaction affects the gesture itself—observing how the sound is produced shapes the action that creates it. These action-sound couplings influence not only how we play instruments but also how we experience sound. Even when listening to sound in a virtual space, we tend to imagine the vibra-

40 Ahmed, *Queer Phenomenology*, 56 - 57.

41 Ahmed, *Orientations Matter* 250.

42 Alexander Refsum Jensenius, *Sound Actions: Conceptualizing Musical Instruments*, 104-105.

tions of the body and the surrounding space, experiencing sound in a deeply embodied way.⁴³ He identifies three types of mental imagery involved in this cognitive process: the action image in relation to excitation, the object image in relation to resonance, and the environment image in relation to the reverberation of sound.⁴⁴ Among the mental images Jensenius proposes, the environment image is often neglected in discussions, despite its importance in understanding how sound reverberates in a space.

In my artistic component, I chose to focus on the environmental image as conceptualising the environment as an instrument.⁴⁵ I wanted to develop a system that bases itself on the acoustics of the space, subtly distorting and transforming reverberation. In this context, the body itself becomes an instrument, and the objects and processes in the space function as instruments through the actions they facilitate. This approach shaped the sound processes for my installation, where unintentional actions became part of the action-sound coupling. For the performance, I conceptualised measurement as the action, with the distances creating changes in the feedback.

To conclude I wish to bring an concrete example of mediation through sound. When seeing Chantal Akerman's film *Jeanne Dielman, 23 Quai du Commerce, 1080 Bruxelles* I realised the impact of mediating gesture through sound and action as a crucial part of communication. By reducing events and stretching time, Akerman allows the slightest changes in movement and sound to convey significant meaning of the internal world of the protagonist. The sound design allows shots to extend beyond narrative necessity, letting us hear amplified silence in a way that is singularly specific to the character of Jeanne Dielman. Subtle auditory cues like the creaking of floorboards, the noises of the elevator shaft, and muted footsteps appear naturalistic but are often tweaked to exaggerate their importance, anchoring our sustained attention to the visual but also using this attention as a way of storytelling of the isolated character's internal and non-visible world.⁴⁶

Several scenes in the film highlight this strategy. For instance, after making a fresh pot of coffee,

43 **Jesenius, 100.**

44 **Jesenius, 101.**

45 **Jesenius, 119.**

46 **Babette Mangolte, *The Loudness of the World: Listening to What is Out There: Sound Strategies in Akerman's fiction and Documentary Films*, *Senses of Cinema*, December, 2015 <https://www.sensesofcinema.com/2015/chantal-akerman/sound-strategies/>**

Jeanne sits still in the kitchen forgetting to drink the coffee. The kitchen is quiet until we faintly hear the sound of the counterweight of the old elevator, which doesn't stop at her floor—her solitude is made visible by this sound.⁴⁷ The oppressive heaviness of the silence underscores how bereft she is. Through the use of acousmatic sounds – sounds which are heard without seeing the source – this contradiction with the image reveals what we were not looking at, her inner state, highlighting her isolation.⁴⁸

Akerman conveys the change in Dielman's internal world through repetition of tasks like peeling potatoes and the slow preparations of food. Through subtle changes in motion and gesture, Dielman's attention is communicated through the repetitive actions. Therefore, due to the small differences, Akerman mediates a storytelling beyond the verbal, instead building on gestural and sonic cues. A silence that is full of noises makes us acutely aware of the ambient sounds she doesn't acknowledge.⁴⁹ Through this contrast, sound mediates between what is unseen and seen and therefore highlights the differences and chance in action.

Orientations and Acoustics

Orientations shape our fundamental experience of space, influencing how we move, perceive, and interact with our surroundings. Examining how orientations and acoustics intersect, we uncover ways in which sound can transform and diffract spaces, disrupt conventional orientations, and make the space more vulnerable.

In her text "Orientations Matter," Sara Ahmed contemplates how bodies are directed to objects and spaces and how these orientations shape our experiences and interactions. She suggests that spaces are organised around certain bodies, making some orientations more welcome while rendering others disoriented or out of place.⁵⁰ Ahmed argues that our orientations affect how we

47 **Mangolte, *The Loudness of the World***

48 **Sound Unseen: The Acousmatic Jeanne Dielman, *Filmscalpel*, accessed September 22, 2024 <https://www.filmscalpel.com/sound-unseen/>**

49 **Filmscalpel, *Sound Unseen***

50 **Sara Ahmed, *Orientations Matter*, 254.**

perceive objects and spaces, what comes to matter to us, creating a sense of directionality—certain paths are followed more easily because they have been threaded before, both individually and collectively.⁵¹

This concept can be extended to the realm of acoustics. Acoustic spaces are designed and experienced in ways that privilege particular sounds and modes of listening. Acoustics can reinforce or disrupt spatial orientations.⁵² For instance, architectural designs often incorporate acoustic elements that guide people through spaces.⁵³ By reorienting acoustics, we can challenge these normative experiences. Introducing unexpected sounds or manipulating acoustic properties can create reorientation, prompting individuals to reconsider their relationship to space.

“the work of architectural acoustics often sets out to refine or reform existing environments, focusing on noise, vibration, reverberation, and other auditory issues or disturbances. This is mostly developed through material interventions that set out to absorb or reflect particular frequencies or vibrations, thereby tuning an architecture or environment so as to better enhance the experience of particular sounds. “

Brandon LaBelle, *Acoustic Justice* (Bloomsbury Academic, 2020), 31.

Brandon LaBelle explores how sound functions as a dynamic force in shaping our experience of space through his concept of acoustic performativity. He suggests that acoustics is not merely a technical consideration but a performative and epistemological one—a way of knowing and engaging with the world.⁵⁴ LaBelle’s concept of acoustic performativity refers to how sound performs actions within spaces, influencing movements, interactions, and perceptions.

Integrating Ahmed’s and LaBelle’s theories allowed me to explore how sound can alter spaces by disrupting conventional orientation.⁵⁵ In *Sonic Mediations*, I intentionally reoriented acoustics to make spaces less directive and more open to individual interpretation. I persistently anted to avoid

51 **Ahmed, 252.**

52 **Brandon LaBelle, *Acoustic Justice*, 40.**

53 **LaBelle, 40.**

54 **LaBelle, 32.**

55 **LaBelle, 36.**

the idea of having a sweet-spot for listening. By introducing subtle, fragmented, and dissonant sounds of the space—reconfigured and coming from unexpected directions—I created dislocation in visitors’ usual navigation patterns. Without clear auditory cues aligning with visual pathways, individuals had to rely on other senses to move through the space, encouraging active exploration and heightened awareness of their orientation.

“ acoustics emerges as a political question—a politics around which the urgencies of hearing and being heard are played out “

Brandon LaBelle, *Acoustic Justice*, 32.

Measuring with Textiles

Textiles extend beyond mere soft surfaces; they are a way of structuring and engaging with matter. Engaging in manual textile processes becomes a means of experimenting and calculating for me. Textiles serve as tools for measuring space, objects, and time, functioning as a way of documenting information.

Experimenting with computational thinking in relation to textile practices has been a significant part of this research. In the making, I explored the field of e-textiles, creating conductive textiles integrated with electronic components to create interactive and wearable systems. I found that building textile electronics introduced touch as a part of interaction with these devices. The intersection of traditional craft techniques and technology allowed for new forms of expression and interaction, not relying on precision but embracing the irregularities in the textile patterns and work.

In her essay “The Future Looms: Weaving Women and Cybernetics,” Sadie Plant writes about the historical intersections between women and computing, focusing on Ada Lovelace, the first known woman to engage with early computing concepts.⁵⁶ Plant explores the symbolic and real connections between women and weaving, drawing parallels between weaving and computing.

56 **Sadie Plant, *The Future Looms: Weaving Women and Cybernetics*. *Body & Society*, Vol. 1(3-4), 45-64. (1995), <https://doi.org/10.1177/1357034X95001003003>**

The loom is presented as a predecessor to modern computing, symbolising the shift from manual to automated processes.⁵⁷

Through repetition, time, and calculation, women have been transferring their lives into fabrics of data for centuries. Textiles speak from the domestic realm, and the warps of a weaving loom structure the thought of a woman.⁵⁸ I want to highlight a contemporary work of art that reflects on Plant's notions and puts programming on textiles into practice. The work of Irene Posch and Ebru Kurbak, particularly their project "The Embroidered Computer," has been a significant influence on my project in terms of thinking about textiles through computation and craft.⁵⁹ Their work, which involves creating a functioning computer using embroidered gold threads and magnetic beads, illustrates how these dominant technological tools can be imagined aesthetically differently—as soft and pliable. This project, staged on a couture embroidery table, reimagines what a computer can be and what textiles can do, demonstrating how traditional textile techniques can be used to create forms of technology and be active.

The encoded knowledge, idea of intelligent textiles, continually draws me back to them as a medium. The methodologies of textile craftsmanship play a crucial role in our conceptualisation of binary divisions, computing, and coding. The relevance of manual labor in today's context lies in the embodied knowledge one gains from engaging with the material and transferring thought into its structuring. Engaging with textile techniques extends beyond the physical act of making to include a broader reflection on the relationship between materiality, technology, and identity. As I continue to explore these intersections in my work, I am constantly reflecting on how my personal set of knowledge—shaped by my background in textiles, sound, and sculpture—can be in dialogue with other forms of knowledge, particularly those emerging from new technologies and digital practices.

57 **Plant, 51.**

58 **Kassia St Clair, *The Golden Thread* (John Murray Publishers, 2018), 16.**

59 **Erbu, Kurbak, *Stiching Worlds* (Revolver Publishing, 2018), 130.**

Extending the Body

My process was heavily influenced by learning about STEIM (Studio for Electro-Instrumental Music) and the work of Laetitia Sonami, particularly her instrument "Lady's Glove." Sonami's glove, designed to allow for gestural interaction with digital sound, enhanced my thinking about how technology can be integrated with the body, extending its capabilities as a tool for creative expression in the virtual. I learned about Sonami's work first through a machine learning course offered online by Goldsmiths.⁶⁰ In the course, Sonami was presenting her practice and emphasised the need for unpredictability in working with instruments to keep the process interesting and to foster improvisation. Furthermore, as I studied her glove, I found it intriguing how she was using distances of her fingers in relation to the thumb, as a form of measuring.

The intention in building such a glove, was to allow movement without spatial reference (there is no need to position oneself in front or in the sight of another sensor), and to allow multiple, parallel controls. Through gestures, the performance aspect of computer music becomes alive, sounds are "embodied", creating a new, seductive approach.

Laetitia Sonami, *Lady's Glove*, accessed September 10, 2024

The idea of extending the body through technology became a way of exploring the relationship between body, space, and sound. Modernity has often prioritised vision as the dominant sense, yet integrating other senses, like hearing and touch, through technology offers a richer, multi-sensory experience. This led me to question the active role of hands and fingers in everyday life; even though they are our primary technical tools, we experience through our whole body. For that reason, when conceptualising my wearable apparatus, I wanted to focus on the upper body

60 **Online course 'Machine Learning for Musicians and Artists' instructed by Rebecca Fiebrink organized by Goldsmiths, University of London.**

but exclude hands and fingers. Our bodies have always been technologically conditioned, shaped by the tools and techniques we use, which in turn influence our behaviour, perception, and interaction with the world⁶¹—extending our reach.

In the midst of isolation Rebecca Horn aims to extend her reach in the space. In her work “Finger Gloves” (1972), as an example from the contemporary art context, she extends her hands with gloves including elongated fingers, altering her reach and interaction with space. In her performance she walks back and forth in the middle of her bedroom scratching the opposing walls along the way. Through this device her physical reach in the room is extended so that her scale and interaction with the space extends the boundaries of her body in isolation. In a way she becomes a hybrid of her body, the device and the space. In this particular work, Horn explores the extended sense of touch by scanning the room with the gloves. Through the scratching sound produced during her performance, she also examines the concept of being listened to, representing how an actor both senses and projects their presence within a space.⁶²

Donna Haraway’s seminal 1985 essay, “A Cyborg Manifesto,” advances the proposition that individuals should be construed as cyborgs—hybrids of living organisms and machines—integrated into social reality rather than existing solely as fictional entities.⁶³ This conceptualisation underscores the intrinsic dependence of contemporary existence on tools, objects, and devices, as well as on social interactions and transactions increasingly manifesting in virtual domains. Haraway argues that technologies can erase the boundaries between identities and binaries.⁶⁴ Resonating with post-phenomenological thinking, technology mediates and increases the scope of human limitations becomes part of the organism. Therefore, as cyborgs, it eliminates the classifications related to our bodies and machines, a system of regeneration and deconstruction.⁶⁵

Rosi Braidotti contributes to this discourse by asserting that humanity is progressively approaching a state of human-machine symbiosis. Braidotti states that cyberfeminism and feminist technoscience studies challenge the normative conceptions of bodies and binaries through critical

61 **Ihde, *The Critical Ihde*, 137.**

62 **Henning Schmidgen and Nils Schott, *Horn, or The Counterside of Media*, (Duke University Press Books, 2021), 28.**

63 **Donna Haraway, *Simians, Cyborgs, and Women*, (Routledge, 2013), 149.**

64 **Haraway, 152.**

65 **Haraway, 181.**

denaturalisation of bodies, biologies, and matter.⁶⁶

“There is no uncontaminated matter nor naturally born humans; technological mediation is our second nature.”

Rosi Braidotti, *Posthuman Feminism* (Polity, 2021), 152.

Being at Risk and Resistance

Objects and bodies are inherently vulnerable—open and affected in interaction with others. Vulnerability manifests both in the intentional openness of a subject, choosing to be affected by risk, and in the material vulnerabilities of objects, which fluctuate and are not fixed. Just as the flesh can be wounded, so too can the skin of an object bear marks of its susceptibility. Mark Coeckelbergh argues that risk and vulnerability are neither purely subjective nor objective⁶⁷.

He formulates two concepts:

“Being-at-risk is meant to communicate that risk is neither a feature of the world (an objective, external state of affairs) nor something that we create or perceive (a subjective construction by the mind, an internal matter), but is constituted in the subject-object relation. The same can be said of vulnerability. Second, the object can be real or imagined. What matters is that, being-vulnerable, we are always directed towards the object (the intentionality of being-at-risk). We have relations with the world, with others, and with the self. These relations render us vulnerable. It is our openness to the world that puts us at risk. It is our engagement with the world that renders us vulnerable.”

Mark Coeckelbergh, *Human Being @ Risk* (Springer, 2013), 43.

66 **Rosi Braidotti, *Posthuman Feminism*, 145.**

67 **Mark Coeckelbergh, *Human Being @ Risk*, 39.**

Coeckelbergh continues by stating that we, as subjects, do not have complete control over objects and relationships, and therefore over our vulnerability⁶⁸. However, we are not entirely passive in relation to them. These relationships are recognised by us, as humans who build the world through technology, live in society as social beings, and engage in reflection and thought. Technologies have been built to minimise our vulnerabilities and extend our reach. However, Coeckelbergh argues that by eliminating vulnerabilities through technological means, we gain and face new kinds of risks caused by technology itself⁶⁹. There's no way to avoid being at risk; the subject is always linked to the object and vice versa, and they affect each other through their existence, continuing to pose risks to one another⁷⁰. This applies to the relations between subject to subject and object to object.

Speaking about risks in the context of communication and specifically transforming thought into matter, I refer to a theory conceptualised by design theorist David Pye. His theory on the “workmanship of risk” demonstrates the difference between working with risk versus working with certainty⁷¹. A typical form of working with risk could be writing with a pen by hand, whereas working with certainty could be typing digitally with the assistance of auto-correct⁷². Although Pye wrote his text in 1968, and technologies have since transformed, the essence of risks and certainties has evolved but remains relevant. For example, drawing freehand involves risk, while using a ruler or compass reduces risk, and being fully assisted by an automated process like a pen plotter eliminates it⁷³. The differences between risks and certainties begin to highlight layers of communication in a handwritten text or the surface of a painting. We start to see gestures in the unintentionalities of risk, as Pye argues⁷⁴.

Technologies construct structures and lines to follow, containing behavior and things with the intention of avoiding risk. However, resistance becomes a significant way of introducing risks into systems—oppressive patterns or normative, standardised ways of communicating. All objects

68 Coeckelbergh, 47.

69 Coeckelbergh, 5.

70 Coeckelbergh, 57-59.

71 David Pye, *The Nature and Art of Workmanship*, 52 - 54.

72 Pye, 21.

73 Pye, 21.

74 Pye, 55.

and subjects have resistance embedded in their being; how much resistance and when to resist is personal and individual.

Salomé Voegelin, in “Uncurating Sound,” introduces uncurating as a form of resistance that pluralises engagements with the now and future, instead of relying on historical foundations⁷⁵. Uncurating focuses on what exists and isn't wanted to be heard by dominant structures. Lines as technological structures are monumental and rigid in their foundations but are resisted by the body living, breathing, and performing both outside and inside those stiff and static structures⁷⁶. Bodies in motion resist automation. Repetition is particularly interesting because it is a process of marking these lines into the flesh, the muscle, and therefore the memory⁷⁷. Hannah Arendt writes in “The Human Condition” that the specific revelatory quality of action and speech, the implicit manifestation of the agent and speaker, is indissolubly tied to the living flux of acting and speaking that can be represented and “reified” only through a kind of repetition, the imitation or mimesis⁷⁸. To mimic the lines is not about becoming the line itself but representing it as a reproduction, a mirror.

In order to make something new, as Arendt would say—in contrast to fabrication—we engage with poiesis, to make through diffraction: a source transformed into something new that diverts from the line that it had as its basis⁷⁹. In this process, one diffracts by posing risks, and by memorising and mimicking through repetition doesn't come across as simple as it seems; it is much more layered.

Voegelin emphasises that the body cannot be fully inscribed or contained, for even as it is broken down by risks and rebuilt, it remains affected by multiple sources⁸⁰. Articulating communication through hands to objects without words of conventional references, an object or surface speaks a language about the performance of the hands, the risks they posed, and the vulnerabilities highlighted by the differences between these marks—read as a cartography of change. The body operates as both a risk and a form of resistance. It resists the lines, and through its confron-

75 Salomé Voegelin, *Uncurating Sound*, 23.

76 Voegelin, 50.

77 Voegelin, 27 - 29.

78 Hannah, Arendt, *The Human Condition* (University of Chicago Press, 2019), 187.

79 Arendt, 195.

80 Voegelin, 32.

tations, it creates a language that speaks of difference⁸¹. These differences caused by risking are crucial in terms of communication through a creative medium. Similarly, as discussed earlier with Jesenius's theory of action-sound coupling, to play an instrument (a technological object) and communicate through it without conventional language is to highlight the differences⁸². The instrument resists the body and its risks, yet functions in a feedback loop that creates tensions between the two.

Voegelin writes about diffractive patterns as markings that signify differences and alter our perception—how we come to see an image or hear a sound becomes intertwined with interference and transformation⁸³. Diffractive patterns emerge when waves—whether of light, sound, or energy—overlap and interfere with each other, creating new forms and intensities. In the context of artistic practice, embracing diffractive patterns means welcoming unexpected convergences and divergences that produce novel experiences.

By engaging with diffractive patterns—to diffract the lines—we allow for the possibility that our actions, gestures, and making will not follow predetermined lines but will instead open up to the complexities of interaction and entanglement. This approach accepts that by posing risks—by stepping into the uncertain—we generate new patterns of meaning that challenge conventional perceptions. The body's capacity to be at risk is also its capacity to create and to disrupt. In the emergence of risks and resistances, of lines, we find the pulse.

Unfolding

81 Voegelin, 77.

82 Jesenius, 104 - 105.

83 Voegelin, 86 - 88, 91 - 92.

Untitled Apparatus I

The conceptualisation of “Untitled Apparatus I” began during the RTGI course when I studied interfaces created by Laetitia Sonami and expanded my research on e-textiles as primary sensors. Through Kubraks and Posch’s project, I discovered the open-source archive Kobakant, created by Hannah Perner-Wilson and Mika Satomi. The archive serves as a resource for DIY textile electronics and focuses on creative experimentation. This resource was invaluable during the development process of the apparatus. From there, I aimed to create a wearable textile interface for the upper body, functioning wirelessly and possibly incorporating speakers into the bodice.

I experimented with knitting and crocheting inox steel fiber spun together with cotton thread, testing various structures and material consistencies to find the best range of resistance in the stretch. The textile structure needed some recovery to maintain its shape, so I created a sample using single-stitch crochet. The direction of the crocheting affected both conductivity and recovery, and using a stronger cotton yarn to reinforce the conductive parts helped maintain the textile’s tension.

To create an apparatus that the body could resist, I needed to measure the space by putting it under pressure. I compressed my body inside a duct tape shell to transform its form into a pattern, which was then translated into fabric—creating a kind of fabric shell. The points of release, where the apparatus would yield, were marked with lines of measurement crossing pressure and movement points: along the seams of the arms and shoulders, across the back, around the waist, and from the shoulder through the elbow to the wrist. In total, I had six measuring lines—sensors that measured the changing resistance of the textile as I resisted the apparatus itself.

In total, six prototypes were developed to test the best sensor locations, and I decided to keep the number at six inputs. With the help of my supervisor, Jan Schacher, the data was parsed in Max/MSP using data smoothing methods.⁸⁴ Once the apparatus was functional, I began conceptualising how to map the changing points to create interactions translated from movements.

84 I specifically used Gregory Taylor’s method for this project.



Detail of Untitled apparatus I - textile sensor.



Untitled apparatus I - frontal



Untitled apparatus I - back

Notes:

I realized that the uncontrollable quality of the regression model sparked thoughts on trying to navigate the sound. Sometimes I would find a movement pattern, repeat it several times, and then release the position. However, the same pattern couldn't be found again due to the imperfect nature of the apparatus (bodice) and my body movements. It was fascinating to find a sound, gain momentary control over it, and then lose it again. This state of control and confusion was the effect I aimed for: questioning when the sound controls me and when I control it. It resembled a power game, or more precisely, a form of negotiation.

The apparatus was unpredictable due to its structure—the textile would never give a precise value of the position, and the bodice shifted along with my movements. This meant that the data derived from it had a lot of noise and could only roughly indicate the tension and release of the stretch. Precision in terms of data was not guaranteed. Initially, I had considered using machine learning to map gestures or postures to desired functions, but I decided to abandon that idea for this project. Firstly, even the regression model allowed too much control, and secondly, I was unsure how I felt about classifying bodies through a model. Instead, I decided to approach the mapping concept through the idea of “pulling strings”—having six variables of distance and calculating these together using a median of two values, for example. The result was less predictable and did not serve narrative purposes.

In terms of sound, I was quite early convinced to use granular synthesis as the main sound process. The reason I chose granular synthesis was due to the ability to manipulate the sounds of the space in real-time by fragmenting them into grains and reconfiguring the order, spatialization, time, and layering of these grains. The “movement” data from the apparatus affected these parameters. In the end, for the installation and performance, I decided to use multiple granular processes simultaneously, with multichannel output and panning also affected by body movements. I will expand on this later in the *Performance* and *Installation* chapter.

Notes:

The first impressions while being inside this device were that it was surprisingly comfortable, though you could feel the tension of the fabric. It wasn't suffocating or compressive. It felt supportive, and in a way, the tensions that emerged through certain movements gave a reactive tactile feedback. In the first training session, I used two recordings as sound sources: one of ceramic cups and the other of a guitar. The sounds that emerged from the trained model resonated with the act of pushing or stretching against—resisting the device. I found the unpredictable sound feedback and the need to search for sounds and moments of control to be a positive experience. However, after a while, working with just one sound source wasn't interesting enough. I agreed with Jan when he suggested in our meeting that I should consider different atmospheres within the space and interactions. These different sonic spheres would also guide different movement languages, creating a sound-specific feedback loop. Some spheres would prompt faster reactions, and I wondered if this would accelerate the sound response. Overall, I feel confident about furthering this project.

Untitled apparatus II - IX

After completing my wearable apparatus, I began to consider how best to output the sound of the digital audio processes. I quickly started experimenting with embroidering speaker coils onto fabric, building on Kobakant's tutorial for an embroidered speaker. I swapped copper wire for brass wire and tested various weights and qualities of fabrics. I found that lighter, denser fabrics produced better sound quality. Keeping the fabric stretched on the embroidery frame further enhanced the amplification. Not only did the coil and magnet amplify the sound, but the vibrations of the fabric itself resonated, enhancing the sound levels even more.



Untitled apparatus II - frontal



Untitled apparatus II - back

During my speaker experiments, I was reading a text by Hanna Bosma on audio technologies. In her work, Bosma argues that gender inequalities can be found in music and other sound arts, both through the roles of the people involved (composers, performers, listeners) and in the gendered structures and discourses of music and sound.⁸⁵ She points out that audio technologies, though often considered neutral and transparent, are in fact material, imperfect, and vulnerable.⁸⁶ The assumption that sound is merely transmitted through equipment, rather than being shaped by the apparatus itself, implies a masculine ideal of total control over unruly sound waves and materials. Bosma's ideas influenced my thinking about uncontrollable relations with sound and how to find more immersive ways of producing and negotiating digital sound in the field of electro-acoustics.

One interesting aspect of these embroidered coils was that each one vibrated differently depending on the quality of the embroidery. The technique itself, called "coiling," involved winding the coil onto the textile. The spacing between the rings of the coil influenced the vibration, giving each coil its own unique timbre and quality. I was able to enhance this timbre by coating the textile with beeswax, which soaked into the fabric, making its web-like structure more skin-like. This allowed the vibrations to be distributed more evenly. Creating one coil typically took two to three days of work.

The speaker consisted of two interlocked embroidery frames: one stretched with the coil, and the other with the magnet embroidered at the center. Each speaker had an approximate resistance of 4 to 6 Ohms. Once I had several speakers ready, I began testing multichannel distribution, as well as other possibilities for sound production. I also experimented with the feedback between the microphone and the embroidered speaker. By applying frequency filters to the audio in Max/MSP, I managed to control the feedback and shape it into less 'hostile' sounds. I realized that the distance between the speaker and the microphone affected the feedback frequency, and moving the speaker around the space became an interesting area of exploration, particularly for performance contexts.

85 **Hanna Bosma, *Unsettling Performances, Soundwalks and Loudspeakers: Gender in Electroacoustic Music and Other Sounding Arts*, ed. Cobussen, Marcel, Vincent Meelberg, and Barry Truax (Routledge, 2016), 307.**

86 **Bosma, 313 - 314.**

Feedback itself is a type of "coiling" of sound, circulating from digital to analog and shaped by the acoustics of the space. It creates a kind of aural mirroring of what is happening in the environment.

The exchange of acoustic information in a soundscape can also be thought of in terms of "feedback" concepts to describe the types of communicational relationships produced by "hi-fi" and "lo-fi" environments. The sound made by a person takes on the characteristics of the environment through the processes of reflection and absorption described earlier. Therefore, what the listener/soundmaker hears is a simultaneous image of self and environment. Unlike the passive quality of "being seen," the listener must make an active gesture to "be heard." The feedback of acoustic information is necessary for orientation, and in the most general sense, the awareness of self in relation to others.

Barry Truax, *Acoustic communication* (Ablex Publishing Corporation, 1984), 20.

Untitled apparatus X

This was the last apparatus I conceptualized and fabricated for the project. For Untitled Apparatus X, which functions as the stand for the microphone, I wanted to reference it as a measurement tool. However, instead of creating a static stand, I wanted to design it with an agency for movement and imprecise reach. The idea of a tripod initially came from the speakers—I had been contemplating whether to use tripods as stands for the eight speakers, allowing me to position them as measurement tools. The original idea was to refer to the speakers as sonars but I didn't like the oppressive quality of this kind of thing. However, I quickly decided instead to distribute the speakers throughout the space by hanging them from the ceiling, as these kind of 'entry points' for sound.

Thus, Untitled Apparatus X emerged from the idea of misuse and reversing the function of a tripod. In this case, I was thinking about cooking and began considering structures that could



Untitled apparatus X - closed.



Carpet for Untitled apparatus X

“cook” sound. I recalled seeing Martha Rosler’s *Semiotics of the Kitchen* in an exhibition in Brussels in 2021⁸⁷. In this piece, Rosler makes a feminist parody of a cooking show, going through the lexicon of kitchen utensils. She slams, brushes, and uses gestures outside of the traditional functions of these objects, expressing her frustration through these exaggerated movements. In these gestures, what stood out was not only the movement but also the sound that communicated that frustration. Inspired by Rosler’s parody, I wanted to distort the static nature of the tripod by pointing the microphone not at a subject or object for observation, but at the floor. By using a microphone with a narrow reach, the apparatus doesn’t directly measure points in space but rather captures what unfolds through the vibrations of the floor, creating a disrupted acoustic reach through the free movement of the hanging microphone, for example. To stabilise the tripod, due to its moving wheels, I patched together a carpet from the *Untitled apparatus II - IX* left over waxed fabrics and when planning its composition I was referring to a clock with segments of time.

When considering the materiality, in general, of *Untitled apparatus X*, I leaned toward brass due to its historical use in scientific instruments, as well as its contemporary application in musical instruments. The tripod’s height is modular, with adjustable screws originally designed for saxophones, and it has wheels, suggesting mobility rather than the static points typically associated with instruments like tachymeters used for land measurement. This apparatus resembles something between an instrument and a measurement tool, functioning ambiguously in both roles.

87 *Witches* - exhibition organised by ULB in Espace Vanderborght, Brussels.



Untitled apparatus I



Untitled apparatus I & Untitled apparatus II - IX



Untitled apparatus II - IX



Sonic mediations - Installation - Untitled apparatus I, II - IX and X

Installation

“Mirroring or altering the sounds in the space, one’s sonic interactions confront them in a reconfigured form, and spatialisation therefore creates a tension in the space as a responsive body and established entity. The space itself doesn’t have a voice but is a lieu where sonic events occur, which are captured by the digital space that reflects them back in a new configuration. The subject is confronted by a reflection that is fragmented and doesn’t qualify as signifiers or signs of its source. Information is lost in this process and projected back in randomised order—in a way, away from the source, sound interpolates and becomes mediated matter.”

I wrote this text while coding the installation in the White Studio, the exhibition space at University of arts Helsinki. We had two weeks to install our works, and for me, it meant that those weeks were the time frame to realise the physical installation, the code as well as the performance.

Regarding the installation, it was important for me to work in the space in order to tune the code with the acoustics, to work with the acoustic qualities already on site, and it was also where the ideas for the content of the code fully merged. I had experimented with granular synthesis modules in my studio space together with multichannel panning between the ‘speakers.’ In my studio, however, the space was much bigger with more echo, and I had no place to hang them, so all the preceding work I had done was configured for static speakers hanging on the walls.

The starting point for the installation was to disrupt the environmental acoustics by distributing real-time recorded sound objects through these eight entry points (speakers). My idea was to have a shotgun microphone, with a narrow capturing span, pointing to the floor and hanging freely from a tripod. The hanging enabled unstable acoustic reach for the recording. I preferred to hang the speakers so that they had stability with subtle amounts of movability. One of the speakers was determined to be de-attachable for the performance. Finding placements for the speakers was about negotiating with the fellow students exhibiting in the space. Since I aimed for occupying the space from the ceiling, spread around unevenly to avoid the idea of creating a sweet-spot for listening. In the end the placements were formed in negotiation with others so that the speakers would not visually occupy someone else’s work. To me this brought an interesting form of guidance building on ‘uncurating’ instead the process sets through a collaborative effort.

The exhibition space, White Studio, is located on the ground floor, continuing straight from the lobby and turning to the left. It is a studio with a wood floor and acoustically panelled walls, often used as a space for dance practices, presentations, or theatre plays. It has no windows and heavy mechanical ventilation. For the Kuvan Kevät, the curator Tuomo Rainio decided to strip the space of walls and curtains to reveal the raw structures of the space. The revealed acoustic panels had created a juxtaposition with the speakers since both were made from textiles but had opposing acoustic functions. Yet the function of the space was to block sound and interference from the outside and the public space (lobby) it was facing. The studio itself was embedded with privacy.

“Generally, we think of interior spaces as quiet rooms minimising the amount of interference and remaining slightly outside our view: rooms are meant to simply fulfill the spatial need to dwell, as a neutral background to habitation and experience. In essence, interiors are meant to remain silent against the personalised ways in which they are put to use and how they take on character.”

Brandon LaBelle, Acoustic Justice, 167.

In this quote, LaBelle illustrates the have silence as a basis of an interior, as a space situated in the institution, aims to be quiet, and its architectural positioning is designed to be private and isolated. The studio is highly infrastructured with artificial light and ventilation. Spending hours sitting in silence I noticed that the space itself contained an auditory environment of the maintenance structures of the building. The difficulty was to create a system that could respond to this existing auditory environment without completely dominating or erasing it. Becoming part of the room’s sonic ecology rather than an intrusive element, but yet in times it was so quiet in the space that the presence of the auditory process was very faint. The thing is that the installation



Details of Sonic mediations - Installation

became only actively noticeable when there were clear differences or instances in the auditory environment. For that reason, a kind of invitational sounds were added to illustrate the process even when it was silent in the space. In the code there was a tracker tracking the auditory levels and after crossing a certain threshold it will switch the installation on having pre-recorded sound files or the microphone in realtime as a source.

The use of granular synthesis was central to this approach, as it allowed me to work with sound not just spatially but temporally. By breaking down recorded audio into small grains and reassembling them into new configurations, the installation introduced a layer of fragmentation and reconstruction that diffracts the way sound normally interacts with architectural spaces. The temporal reordering of sound also emphasized the loss and transformation of information, resembling the fragmented reflection of the subject described earlier.

Each speaker became a node for the recomposition of these sound fragments. The placement of the speakers and their subtle mobility ensured that the sound was never static. The speakers bled sound to both directions due to the lightness of the textiles used, there was no fixed side for best listening. Instead, it moved, evolved, and adapted, creating a shifting auditory landscape. The hanging microphone, with its unstable capturing range, added to this sense of impermanence, feeding new and unpredictable inputs into the system.

The installation's placement decisions highlighted the negotiation required in shared creative spaces. By avoiding central or symmetrical arrangements, the work sidestepped conventional focal points, instead encouraging the audience to explore the space in motion. This approach underscored the installation as an open, participatory environment, where sound and spatialization disrupted and redefined the idea of the White Studio as a "neutral" or "silent" space.

The negotiation with other exhibiting students also played into the collaborative ethos of the project. The process of positioning speakers so they did not visually dominate or interfere with other works led to spatial configurations that ultimately shaped the sound's behavior. This allowed the installation to integrate into the broader exhibition as a responsive piece, rather than a standalone.

The White Studio, with its raw, exposed structures and embedded acoustic design, was transformed from a passive container into an active participant. The installation challenged the idea of space as a neutral backdrop, instead revealing it as a living, responsive body. The frag-

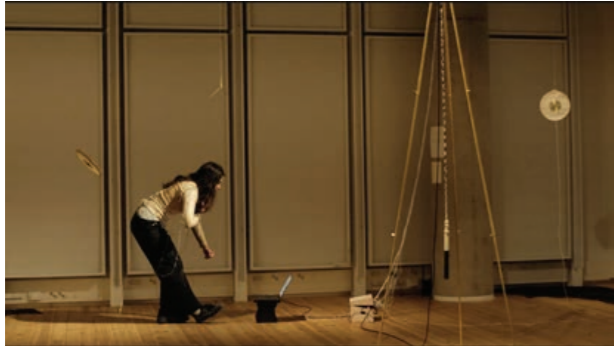
mented, randomised sound reflections invited the audience to confront the instability of their sonic environment and their role within it. By mediating the space's auditory characteristics through digital processes, the installation highlighted the complexities of perception, interaction, and the politics of sound in institutional and architectural contexts.

Eventually, the installation was less about delivering a specific message or experience and more about opening a space for exploration—of sound, space, and the relationships between them. The process of creating and tuning the installation within the White Studio became as much a part of the work as the final result, embodying the tensions and possibilities of working within and with architectural and institutional constraints. The space, redefined through sound, became a site of emergence, where mediated matter challenged with reflection and presence.

Performance

As someone relatively new to live arts, performing within my own installation was ??? experience. Performing introduced a temporal activation to the work, imbuing it with continuity and turning the artwork itself into a place of study. exploration, where the boundaries between performer, audience, and environment blurred into a dynamic conversation.⁸⁸

During the performance phase, the installation evolved into a live, reactive system. A hanging shotgun microphone captured real-time sounds from both the audience and the surrounding space, feeding them into a granular synthesis process. This fragmented output created a feedback loop between the installation, the environment, and everyone present. The performer, spectators, and the space itself were all intertwined through sound, becoming both the source and the recipient. This interaction transformed the space into a responsive organism, where sound was simultaneously a product of and a reaction to the immediate moment. The audience's movements, conversa-



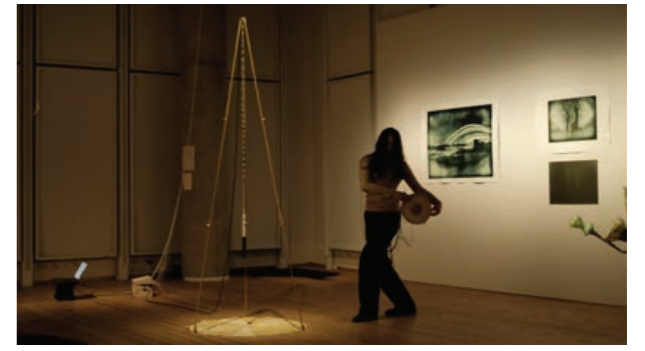
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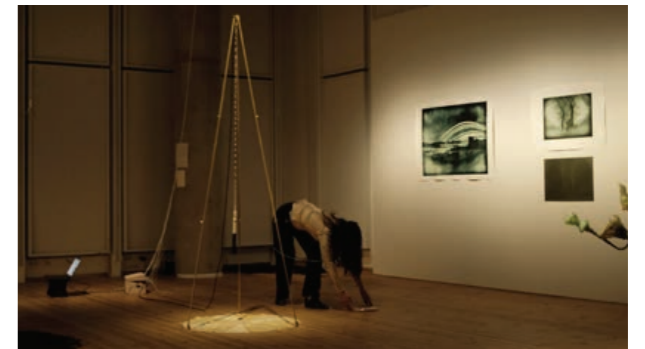
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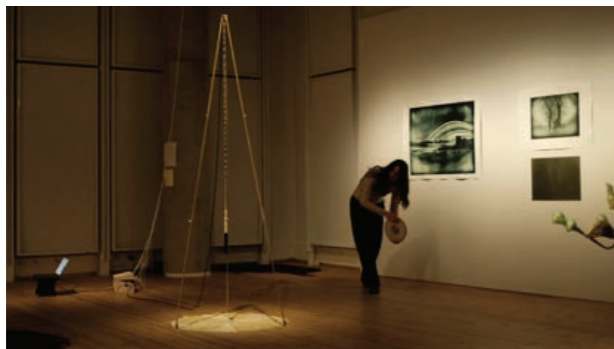
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11 - 12



13 - 15



7



7



16



17

tions, and interactions directly influenced the sonic output, leading to an experience unique to that specific time and place.

Performing within the installation relates closely to concepts I discussed earlier regarding the blurriness of objects, as explored by Dragan Espenschied. The idea of an artwork not being a fixed entity but rather a fluid experience resonates deeply with this performance. My initial intention was to construct a performance that embraced instability, juxtaposed against the stability of a predetermined score. Within this structured framework, both the body and sound navigated risks, causing changes and adapting in real-time. I thought to create an unstable ground where, as a performer, I was compelled to listen and react—where what I was hearing directly influenced how I moved and vice versa. Similar to what in Jesenius’s conceptualisation of sound-coupling the space itself becomes an instrument, as well as the body and the step – all part of the coupling.

The code and score, mapping data from a wearable apparatus, were developed over a period of three days. This was combined with a loose choreography, which served as a tool to research sonic changes and variances within the score. I decided to structure the performance around acts with varying sound processes and possibilities for action, utilising an internal clock within the code to switch between different ‘instruments’ and sonic manipulations. I had in total eighteen acts, messages, that predetermined and dictated ground of each interaction. By mixing different granular synthesis processes, I mapped my body’s data to control panning and other audio parameters, allowing physical movement to directly influence the build of the sonic landscape. Time constraints played a significant role in shaping the piece. The process of installing the apparatuses in the space consumed much of the available time, leaving a tight schedule for coding and refining the performance. This limitation, however, contributed to the inherent instability and urgency of the piece, aligning with my conceptual intentions.

The concept of ‘liveness’ became a focal point in understanding the work. As Catherine Wood articulates “*Liveness is not just an attribute of the human actors involved but a state of potentiality embodied in how all the elements of this work might move or change*”⁸⁹. This perspective emphasizes that liveness extends beyond the performer to encompass all elements of the work, including objects, space, and audience interactions. An important element of the liveness

89 Cathrine Wood, *Performance in Contemporary Art* (Tate Publishing, 2022), 10.

and unruliness of sound was the use of feedback of the sound system. As I mentioned before (see page 45) part of the experimentations and the final performance was cumulating to also creating an obvious feedback looping. Through my experiments I found that within this specific sound system a loud instance of sound, like a stamp, could interfere the feedback.

Loose instructions

1. **Bend** both arms first right then left – to full body bend. (**triggers** the start of the score)
2. **Granular_field** emerges – the body moves acoustically causes sound and manipulates through the movement grain size, location and panning
3. Then **Granular_cloud** slowly emerges – frickles
4. **Feedback** on gradually (speaker 1)
5. **Granular_cloud** (frickles) gets louder (also feedback becomes more apparent)
6. **all Granular off** – moving to deattache ‘**speaker 1**’
7. **Measuring** distances with the feedback
8. **Granular_cloud** emerges - the bodice panning – **circular motions** (when speaker 1 pulled close to the body Granular_cloud output in speaker 1 otherwise circulates in other speakers.
9. Granular_cloud **off** - moving to grabbing the microphone
10. **Measuring** feedback by holding **microphone** and **speaker 1** – measuring the contours of speaker 1 with circular movements
11. Moving to **breathing**– placing the microphone against the shoulder, holding speaker on the side – **blowing** to the microphone and one **gasp** (disrupting the feedback). **Repeat** multiple times.
12. **Granular field** emerges – still breathing – the stretch of shoulders affects the speed of the grains.
13. Everything **off** – realising the microphone and feedback on speaker 2 turns on.
14. **Feedback** on speaker 1 emerges - placing the speaker on the floor and measuring distance on the floor
15. **Feedback** emerges for speaker 8 and 4
16. **Stamps** - disrupting the feedback with three stamps in different distances – moving to the **exit** door
17. Final **stamp** at the door - **Exit**
18. **Feedback** continues until the score ends

In considering the performance as a living sculpture, I was influenced by Marisa Merz's practice but also interested in the socialness that sounding together brings when each iteration takes place on its time with the people and the things present in site. In performance, the object becomes significant not for what it is, but for what it does and how it affects the surrounding environment. For instance, during the opening performance at Kuvan Kevät, the simple act of people entering and leaving the space, and the sounds generated by closing doors, directly affected the performance's soundscape. These power games, these unplanned elements became integral components of the artwork, as the fluid boundaries between performer, audience, and environment. Interestingly, as the performance was rehearsed and repeated, the initial instability began to diminish. By the time of my third performance, I found myself surpassing the threshold of control I had initially aimed to avoid. The piece had become tamed and secure to perform. Reaching this point meant that the work no longer required me to intensely listen and tinker within the system and its parameters. Instead, I had established a choreographic navigation through the score, becoming familiar with the tools and settings of the "Sonic Mediations" performance.

In June 2024, after the Kuvan Kevät exhibition had concluded, I participated in an advanced Max/MSP course where I reworked and clarified my performance patch. As a culmination of the course, I performed the piece in a different setting. This time, with six commercial speakers, an accelerometer sensor, and an instrument microphone, the space was notably more silent, and the tools themselves altered the unfolding of the performance. This experience illuminated how different tools not only physically affected my movements as a performer but also introduced new risks and variables into the performance. The control I had previously gained through familiarity was once again disrupted; I found myself vulnerable, searching for security amidst unfamiliar conditions.

This return to instability reinforced the core themes of my work. It highlighted the importance of embracing vulnerability and the unknown within live performance. The shift in tools and environment reintroduced the necessity for active listening and real-time adaptation, reigniting the dynamic interaction between performer, sound, and space. In reflecting on these experiences, I recognize that the tension between control and chaos is central. The performance was and is a continuous study, an evolving dialogue between structured composition and spontaneous interac-

tion. By allowing instability to permeate the work, the installation remains alive, responsive, and intimately connected to each unique moment of its activation.

Through these performances I learned that familiarity and repetition can inadvertently lead to a loss of the very instability that fuels creativity and engagement. To counter this, introducing new elements—be it different technology, altered spaces, or diverse audiences—can reinvigorate the work, keeping it challenging and fresh. The performative act thus becomes not just a presentation but a process, where each iteration offers new insights and experiences.



Sonic mediations - performance.

Closing Words

As I bring this document to a close, I find myself reflecting on the questions that have defined *Sonic mediations*. At its core, this project has been profoundly influenced by the concept of diffractive pattern-making, resistance and by the interplay of risks and vulnerabilities—elements that have informed both the artistic practice and the resulting works.

Diffractive patterns, as a conceptual framework, have guided the mediation among bodies, tools, and sound. This notion of diffraction – or in other words speaking of tinkering – has not only shaped the material aspects of the project but also highlighted the inherent unpredictability of live processes. Sound, when fragmented and reconfigured in space, mirrors and scatters the interactions between performer, environment, and audience. Thus, diffraction becomes a mode of thinking and making, where difference and transformation are not only inevitable but also generative.

Risk and vulnerability have been central to this process, both conceptually and practically. In live performance, the body and apparatus are placed at risk, exposed to the uncertainties of the moment. This risk is not a flaw but a feature—to undertake the ephemeral and contingent qualities of the work. Similarly, the vulnerability of tools—their tendency to “malfunction” or resist complete control—mirrors the vulnerability of the body as it negotiates space and its own limitations. Far from being constraints, these vulnerabilities have opened pathways for deeper engagement, where these limitations and the unexpected leads to new discoveries.

Building relationships with tools has been a continual negotiation between control and confusion. In this sense, the tools have not been passive instruments but active collaborators. They carry their own agency, unpredictability, and materiality. Crafting the wearable apparatus, embroidering speaker coils, and coding installation and performance patches was not only technical but relational. Each tool brings its own set of possibilities and limitations, and my interactions with them have been marked by moments of being lost, adjusting, and listening. These relationships underscore the notion that tools are not separate from the body but extensions of it—shaping

and being shaped by the processes at hand.

Reflecting on how my thesis work has unfolded artistically, the project’s performative and installation components reveal that making is not about reaching fixed outcomes but about engaging in ongoing processes of negotiation. The tools I have built and the performances I have enacted are not endpoints but continuations of a larger inquiry into how sound mediates relationships. By disrupting familiar orientations, they foster new modes of being, balancing structure and spontaneity. Each interaction has opened fresh pathways, deepening my understanding of sound and its possibilities. These insights have reinforced the importance of embracing uncertainty and vulnerability as essential elements of creative work.

After the Kuvan Kevät 2024 exhibition, I traveled around Europe and the UK, gaining the opportunity to explore various facets of art and technology. As an example, from 3D-scanning the surfaces of historical paintings with the Factum Foundation to experiencing a vast array of audio-visual works and sound installations at the Venice Art Biennale, visiting Rebecca Horn’s retrospective in Munich, and experiencing the Neolithic Skara Brae -village, each encounter broadened my perspective on technological mediation as part of our culture and our being. Particularly in Madrid, spending a month discovering the combination of digital tools and analogue methods in contemporary art production and documentation, opened up numerous questions about the rematerialisation of data and the complexities of archiving.

Since then, I have continued my studies in these topics and am very eager to learn more. In addition I have developed new speakers, challenging their form and materiality. This thesis project, along with the experiences it has led me to, has affirmed my desire to delve even deeper into the questions and themes that have surfaced throughout *Sonic mediations*. There is so much that I couldn’t include in this document and even more that I have yet to discover. I am thrilled that there is no end for knowledge since it is of tomorrow, now and the past. For me inherently, art making is not about the object itself, not about the installation or the performance but where you are taken to by being at the process.

Documentation of process

Evolution of Untitled apparatus I - the first sensor, sleeve, prototypes to the making of the final object.





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