Under The Nose
explorations of a silent voice

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Master's Thesis

<u>ABSTRACT</u>

This thesis describes the voice as an entity existing at the crossroads of perception and imagination. As such it brings with it many questions regarding listening and subjectivity. These ideas are developed further by providing examples from cinema, sound art and computer music.

ACKNOWLEDGEMENTS

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Introduction

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"Love requires a progressive shortening of the senses: I can see you for miles, I can hear you for blocks, I can smell you, maybe, for a few feet, but I can only touch on contact, taste as I devour. And as we blend, sight ... blurs", writes William Gass in the philosophical treatise *On Being Blue* (Smith 2007, 20). What is described here is the intrinsic problem of inspecting an object of desire. A similar shortening of sense(s) happens when we try to follow a voice into the brain – sense and experience seem to meld into each other. And, as Daniel B. Smith concludes in his commentary on Gass – "The voice becomes inscrutable, described only in the language of metaphors" (Smith 2007, 21).

What will follow in the chapters below can be understood best by spectating clearly the 'focal depth' of this text and how objects fade in and out of it – to spectate the movement of the camera and its outreach. A surely ocularcentric instruction… After all, we read with our eyes. The voice is nevertheless always there – where the muscles of our mouth move in silence, preoccupied with the relics of the childhood of our reading.

The text to follow is structured loosely in four chapters and is meant to be cross referential in between the segments in the chapters. The different segments occasionally have been written in time spans of months from one another. In these I tackle a range of ideas that have informed my thinking and artistic practice.

In chapter I chapter I will locate the thresholds of imagination and perception that I am interested in artistically. I will draw attention to how these are imbedded in both phenomenological and psychological takes on the human voice.

In the first section of the chapter, which functions as an introduction, I will turn to cinema and will focus on the notion of 'acousmetrê' developed by Michel Chion as it proposes an idea of an 'inner voice' constructed by montage in cinema, as well as an early mechanical speech synthesizer known as *die Sprech-Maschine* constructed by Wolfgang von Kempelen. The section is intended to highlight the affective potentials of the human voice that arise in process of technological mediation.

In the second section I will focus on ideas developed by Yannis Kyriakides in relation to composing with what he calls 'silent voice' and elaborate on them by taking a closer look at phenomenological contemplations on the voice by Don Ihde and the psychoanalytical theories of voice by Mladen Dolar.

In the third section I will focus on what the Don Ihde describes as the "polyphony of experience" and how listening is influenced by the co-presence of an 'inner' voice. I will introduce the notions of the auditory *perceptual* and auditory *imaginary*.

In chapter II I will take up the psychological category of *desire* to reason about listening and the associative and fantasised layers that sound may carry. I will treat the idea of *overhearing* and touch upon *hallucinated listening* as they are peculiar cases of listening thresholds.

In section I I will contemplate on the role of a sound studio in Apichatpong Weerasethakul film *Memoria*. In section II I will analyse and compare two compositions by Peter Ablinger and Pauline Oliveros and the use of white noise in each. Section III brings up a discussion on the

mythologies of tape recording media through a closer look at the practices of Konstantīns Raudive and Friedrich Jürgenson.

Chapter III includes contemporary practices in sound art that I have found relevant in the context of this research. I will attend to 'silent reading' as it is used in the work by Tao G. Sambolec. I will briefly mention the reduction-orientated album of the a Japanese sound artist Toshiya Tsunoda.

In Chpater IV I will turn to the description of works-in-process and *studies* that I have developed in the context of this research. *Object study 1* is a site-specific sound installation that I developed as a final project for Justin Bennett's sound art class in the spring of 2022. It is based on vowel measurements and measurements of space. *Object study 2* is an adaptation of *object study 1*. It takes the shape of a computer program written in SuperCollider for adjustable space dimensions, and for stereo playback. *Well trained writers* is a text score for collective writing and listening. *Phantom etudé* is a work which involves the use of "Phantom Words" psychoacoustics experiment as described by Diana Deutsch.

Lastly, in "Post-human considerations" I will touch upon utopian/dystopian ideas at the intersections of mind, music, and computation.

By delving into these points, I would like to construct a theoretical multidirectional 'web' that will help to guide the reader through the rest of the chapters. The ideas discussed here are meant to inform the reader of the thoughts that have contributed to my artistic process.

I : Crossroads

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It never stopped to puzzle me, how this multidimensional knot of thoughts, images, experiences could feel so very much real. Or perhaps reassuring, opposed to the untameable flow of matter. When I close my eyes, I see images. When I cover my ears, I hear thoughts. I would like to say, that I hear music, although that alone rarely proves to be true. It is a mixture. When listening, a contemplation is present in my attention, guiding the listening process, by asking, pointing and reasoning – 'Listen to this now, now listen to that'. The separation of the mixture is a skill to acquire, and a possible longing. Longing for some place where language does not intrude with its categories. Some place – state of mind – where one can freely let go to experience.

A lot of the time I have spent listening to music by myself I have been reading. I have noticed how this has shaped my listening and thus the musical material I sometimes feel more drawn to and that I still listen to without the presence of text. This attention which is floating in between text, thoughts and sound is something which I became fascinated by.

I.I The Most Human of Effects

In the film *Der Himmel über Berlin* most of the characters are depicted silent, not moving their mouths at all (Wenders 1987). A tall man meanders around the streets of the divided German capital. It is 1987. Shots of metro, libraries, and apartment block buildings full of stories and people to tell them, but they do not speak, their voices are presented together with their images – mostly steady faces and closed lips. The character of the tall man in a coat is present in most of the scenes but is ignored by others to an extent that the conclusion to be made from spectator's side is that he does not belong to the realm of the seen at all. Instead, he is the only one who's voice is not heard in the mix. He must be the listener then, hearing the stories, as if tuning in on people's thoughts and worries. A depiction of listening that is impossible in the world outside of the reality of the film.

If the gesture of such a sound design is not misinterpreted by the audience and they can link the film reality to the daily experience, it can be said that the process of associating an image of a mute body together with a voice provides some clues to how mental activity is occasionally understood. There seems to be an idea of thought as being 'inner speech'. It is a voice that exists without 'voicing'.

Michel Chion calls a 'being' that is created in cinema, by editing a voice alongside an image, which does not include a synchronous movement of the mouth, an 'acousmêtre' in its minimal definition (Chion, 21). If the movement is linked at least once during the film, the effect fails and the voice becomes 'mortal'. The 'immortality' of the complete 'acousmêtre' has to do with its powers of being everywhere, seeing all, knowing all and having unlimited power (Chion, 24). These powers in *Der Himmel über Berlin* are attributed to the character of the tall man, without him actually being an 'acousmêtre', he is rather an omnipresent ear, that to whom all the speech is addressed to.

The de-acousmatized characters, those who are seen on the screen as having this internal monologue, nevertheless present a type of a trauma. They represent the problem of locating a

voice as such. "Why, if you are so still, there's a voice coming out of you?" or "Who are you talking to?", or "Why should I be hearing you?". Is the de-acousmatization never complete? Chion, by giving different grades of this process, mentions that it is almost like striptease – a shot of the feet can come first, then the hands, then a shot of the back, even the eye – although the full de-acousmatization can only end with the mouth, whose co-incidence with the sounding voice needs to be established, even if only approximate (Chion, 27). The mouth is closed, what then? It is as if a small homunculus would be sitting inside the chest, speaking to the camera.

To take a step backwards, I would like to bring to attention another example of the voice before cinema. In the second half of the 18th century Wolfgang von Kempelen, an Austrian descent court official, a venturesome engineer on the side, toured around show rooms and palaces in Europe with two inventions. He describes the process of constructing one of them as: "[..] one of the most daring projects, ever to have arisen in a human soul" (Kempelen, 469). The device he is referring to is an early mechanical speech synthesizer, consisting of a wooden box with valves, bellows attached at one side and a rubber funnel on the other. The rubber funnel takes the function of the 'mouth' and the bellows – that of 'lungs'. By adjusting pressure, stretching out and contracting the rubber funnel, it was possible to shape a set of vowel sounds. If operated with a firm and artistically sensitive hand, even a small vocabulary could be voiced.

The second device presented was a machine known by the name of *Mechanical Turk* or *Automaton Chess Player*, which Kempelen developed prior to the speaking machine (*die Sprech-Maschine*), or, more precisely, the speaking machine was conceived during the development of this invention. The design can be described like this: a cabinet, on top of the cabinet lays a red and white ivory chess set, attached to the side of the cabinet is a human sized wooden torso with hands and a head, it is dressed up in ottoman robes. A visitor of the show is invited to play a game of chess. After a harsh duel, *the Turk* persists in silence. In the wooden box, a small hunchback lays and waits for the next game. The magic machine is a façade of a great chess player hiding in a dark room of strings and magnets that project the game to the underground with the doll on the outside, operated by leavers from inside.[1]

For the spectator of the time, a sensation both dreadful and intriguing arises from witnessing both devices exhibited next to one another. Mladen Dolar makes a good point by taking a notice of the order one goes through the experience:

> "[..]the speaking machine was presented as the introduction to the thinking machine, thus the former made the latter plausible, acceptable, endowed with an air of credibility; for if the first was demonstrated as actual, then the second was presented as a possibility, although admittedly based on a trick."
> (Dolar, 9)

While *die Sprech-Maschine* had no human features and its mechanical working principles are described in a book that allows the machine to be reproduced later, the sound it emitted fabricates the effect of being *animate*, an effect that would bring goosebumps even for a listener today. The sequence creates an implicit suspicion – the idea of the Turk having the ability of

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[1] It is noteworthy to mention that the world was moved almost two centuries later with another 'magic box' chess player that could beat almost any contender – the IBM computer (IBM 2021).

speech, but opting for silence as a deliberate choice, in opposition to the speech machine which cannot keep silent when operated. What the junction presents is this – for the machine of reason, *the Turk*, to be believable, *die Sprech-Maschine* must precede it with its 'voice'. The rational doll loses its magic and becomes nothing but a machine without the seemingly human sounds preceding it. The analogy can be taken even further to say that the chess player in the machine perhaps shares a similar ontology with the doll which he is in control of.[2] But what matters is that the voice in both cases produces "[..] the most human of effects, an effect of 'interiority' " (Dolar, 10).

The de-acousmatization is *ad infinitum.* The real source of the voice is always veiled – it is neither mouth nor the vocal tract where the voice is located, it seems to be coming from a deep inner dimension. Its source can never be reached fully. This can be easily demonstrated by inspecting mythologies of the voice in ancient Greece. In Aristotelian metaphysics breath is that tip of the immortal human soul that sticks out (Bonnet, 12). And voice is an extension of the breath, thus the voice is linked with the sphere of knowledge that is 'beyond the human mind to grasp'. The nature of the voice cannot be reduced to its physics, a big part of it lays in the 'gaps' of inspecting it and where rationalisation lags. The voice plays the game of hide and seek. This is the main problem in describing what a voice is and giving it a clear definition, because of the issue of locating it.

Its plurality of meanings is also that which makes it a versatile idea and something that is more speculative than clearly definable. In the case of this research, the wide range of meanings of the voice are taken in account and the voice will be explored in the following chapters as encompassing those. As with the case of the characters in *Der Himmel über Berlin* who seem to be speaking in their mind, and with *die Sprech-Maschine* which produces goosebumps, the mythologies of voice come most in question when it faces yet again another 'new' media. Along the way, it produces an array of affects and technological imaginations.

The introduction of a human voice into different technologies of its dis-embodiment is what I regard as fascinating and will continue to illustrate further. I do not intend to create a historic overview of such grades of dis-embodiment, but rather to bring to attention examples that I find creatively engaging.

I.II A Silent Voice

In this section I attempt to make a discourse, which follows different ideas of voice embodiment. This line of thought is taking the perceptual experience of a voice as a starting point to understand better how a voice is never singular. And furthermore, how its metaphorical levels are related to this plurality.

These inquiries should guide the reader throughout the rest of the chapters. In this sense the section functions as both an introduction to a complex network of interconnected fields, as well as a reference to return to, when one feels lost in the reading process. I explore these ideas to

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[2] The homunculus is presenting an idea of reason as the mastermind behind the chess game, although he is also just a puppet of his 'inner discourse', the silent voice in his own mind.

uncover layers of the human voice which might become a part of my own creative practice. The possible philosophical statements regarding voice, embodiment, thinking in language I will leave open, since to answer such questions is beyond the scope of this research.

In the introduction of his doctoral thesis titled "Imagined Voices: A Poetics of Music-Text-Film" Yannis Kyriakides proposes a field of music where construction of meaning is understood through the multiplicity of voice effects and metaphors. Since the topic has been widely researched within the domain of the use of voice in sound art and electro-acoustic music, a definition can help in focusing on specific questions. The definition Kyriakides proposes is this:

> "Perhaps I should start this thesis by defining exactly what I mean by 'voice', as the word is already packed with so many interpretations as a noun, verb and even an adjective. Though there are definitions aplenty here, perhaps it is exactly this mutability of meanings that 'voice' represents: both the essence of expression and of listening, inextricably interconnected." (Kyriakides, 14)

I present this thought here since it includes the large field of readings one might refer to, when writing about the voice. It cannot be reduced to a sound emission from the body or *pneumea*[3]. Perhaps, the best way how to attend to this broadly definable entity is to accept its mutating meanings and layers. It can be said that voice "in general just is that which arises at the crossroads..." (Kyriakides, 14).

Out of the multiplicity of these crossroads I am interested in specifically the threshold in which the voice has the capability of both being a mental sound image and an emitted sound. Taking a closer look at the sound image according to Kyriakides, there are three types of inner 'vocality' that can be classified in his work with the 'music-text-film' form of multimedia composition: " 'silent reading' as in the reading of the text; 'silent singing' as in the tracing of melodic contours with the inner voice; and 'silent discourse' the hidden dialogue of thought that occasionally surfaces during overt self-reflexive moments in the works, or when the half-completed syntax of words triggers a myriad of possible answers" (Kyriakides, 11).

I find this classification highly useful and quite unique and intend to bring up in my further analysis of works involved with voice. I would like to give a few examples here, so it can be understood more clearly.

First, the mode of including 'silent reeding' can be found incorporated in a multimedia composition by Dick Rajimakers titled *Ballade Erlkönig*. Here the poem by Johann Wolfgang von Goethe with the same title is presented in the text form on a screen with a dense sound collage of shortwave radio recordings corresponding to different parts of the poem.

The second mode of 'silent singing', can be better understood by taking a look at the hypothesis of motor speech perception, which, to simplify, proposes that the perception of speech is directly connected to the motor capability of the vocal tract to imitate the sounds of speech

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[3] The Aristotelian idea of the all encompassing force of animation, including speech, breath and soul.

heard[4]. This could also be said that a form of 'silent singing' might occur, when even abstract sound gestures would correspond to possible vocal articulations.

The third mode of 'silent discourse' is more obscure and relates to the way we conceive of thought. Because of being the most complex mode of silent voice, although the one which I find of great philosophical importance, I will investigate it here in more detail. By doing so, I will touch upon questions regarding the relationship between sound, subjectivity, imagination and media, and will indicate at creative perspectives in the intersection of these ideas.

The phenomenological point of view:

Since phenomenology is a branch of philosophy concerned with the study of experience, it is here where we can find some noteworthy points of view. Regarding experience, a question can be posed: what are the characteristics of the 'inner life' of thought? Firstly, I will address the topic of speech. By speaking our expressions can be communicated and understood by others since they are a part of language. Communication allows us to share our phenomenological experience – to share our unique experience of the world. Not only of the world around us, but also our emotional responses to occurrences or the process of arriving to certain conclusions. An assumption of our 'inner' flow of thought being a type of speech can be made. The idea that language expresses thought is also shared by Merleau-Ponty:

> "[..] in the case of private thought episodes that do not involve moving one's body Merleau-Ponty conceives 'of private thinking as silent speech. To engage in such thinking consists in silently saying sentences of public language to oneself' (ibid.: 188)." (Walsh, 3)

Language here is understood as belonging to the public. That which connects us to other people, thus voice connotes the presence of the social. What is then the voice which exists without being uttered? Without communicating to the other, but without escaping linguistic form? This can be understood as the previously described 'inner discourse'.

To focus on the presence of language in the previously mentioned mode of 'silent voice' it is noteworthy to bring up the case of sense-language. Considering that a natural expression of pain would be crying, an expression like "Ouch!" later would be chained to that sensation. Such an expression would then be linked to a more complex formation of language, like "My finger hurts" (Tang, 17). This could be one way to describe the gradual alienation from the body, that is made possible by language, and more importantly – carried out by the voice. So, it can be said that by learning to put sensation into words, a child must gain a certain cognitive mastery of the vocal mechanism – executing language, through speech, that then produces a 'gap' from the body. The voice seems to be separated from the body in order to be attached to language. The passage to the social is 'voiced'. But at the same time the voice mechanism continues to stay as part of the body.

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[4] See Alvin Liberman.

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"Ouch!"

pain ● ⟶ crying

Figure 2

(Tang, 18)

crying

"Ouch!"

pain
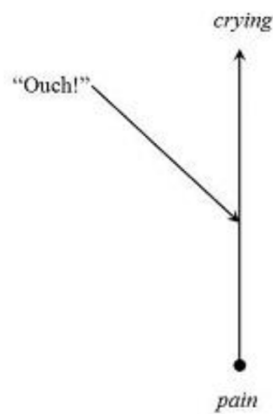
Figure 4

(Tang, 19)

One of the most comprehensive ideas on voice as being both perceptual and existing in imagination is made by Don Ihde. In his theory of voice phenomenology, he further explains the role of 'silent discourse' in terms of its relation to public language here are at least three ideas that I find relative in mapping some of the dimensions of the 'inner discourse' phenomenon:

(1) Linguistic thinking can be understood as omnipresent and persistent. The silent speech of thought always follows the subject. It can be co-present in whatever condition – as if it would be a never-ending 'stream':

> "This 'linguistic thinking' does not present itself as coming from 'somewhere' but retains its elusive self-presence as either background or accompaniment to the remainder of what I may be engaged in." (Ihde, 139)

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(2) It is relative to the sensory impulses and influenced by the environment of the perceiver:

> "Perceived sound, as in the case of 'white sound', or programmed background music, floats lazily around me, and I find I can easily retire into my 'thinking self' and allow the floating perceptual presence to recede from focal awareness. [..] If suddenly the sounds of the environment increase in intensity and volume, particularly if not constant, I begin to find a resistance to the maintenance of 'inner' focus to 'outer' sound. The perceived sound in its penetrating capacity disturbs my train of thought. Auditory interruptions of 'thinking' are particularly noticeable. A sudden noise, the annual engine trial of someone's hydroplane on the harbor, poses a serious distraction." (Ihde, 132)

(3) The voice identity and location in a field is dependent on one's imaginative capabilities:

> "'Empirically' some self-imaginations are experienced as occurring 'in' and 'from' one's own body, while others are *objectified* in that they place themselves 'out there' apart from their sense of body as an 'objectified quasi-other' in the imaginative experience." (Ihde, 120)

Following up on the last point about the imaginative capabilities of displacing the voice – it is worthwhile to take notice of a similar imaginative force in cosmologies of voice as elaborated by Ana Maria Ochoa Gautier. By describing the beliefs from in which the voice was understood by indigenous people in northern South America, Ochoa Gautier writes:

> "[..] the voice was not understood as that which represented their identity. Instead, the voice manifested or enabled the capacity to move between states of multiplicity or unity where a single person can envoice multiple beings and where collective singing, as in a feast, can manifest a unity in which the collective is understood as expressing the singular (Strathern 1988; Seeger 1987), where different living entities or musical instruments voice the breath of life (Hill and Chaumeil 2011)." (Gautier, 12)

A conception of a voice which mediates the 'multiplicity' and 'unity' of the environment is one of the curious (and possibly even political) imaginative capability of the voice. Being such, the 'dis-embodiment' of the voice can have a far-reaching agency and it is worth to consider its relevance as an entity which can reach into the non-human.

The phenomenological inquires by Ihde give quite a few perspectives on 'silent discourse' and creates a conceptual space which can be navigated. As such, it opens up possibilities to work with the category of 'inner discourse' and to compose for the dynamics and imaginative territories of such a mode of 'silent voice'. I have encountered the works of Ihde at the end of this research, thus an artistic investigation of some of the previously noted characteristics of 'inner discourse' I leave open for future exploration.

The psychoanalytical point of view:

In his book "The Reawakening" Primo Levi describes the problem of being incapable of speaking a language. An example most tragic, he tells of a child which has no parents and no clear identity:

> "The speech he lacked, which no one bothered to teach him, the need of speech charged his stare with explosive urgency: it was a stare both savage and human, even mature, a judgement, which none of us could support, so heavy it was with force and anguish." (Levi, 25)

Language is like a force, which exists in the body and must exit through the voice. Here the link of voice, body and language is presented in its furthest dramatic state. The voice is a passage. And in the case of 'inner discourse' this passage is internalised.
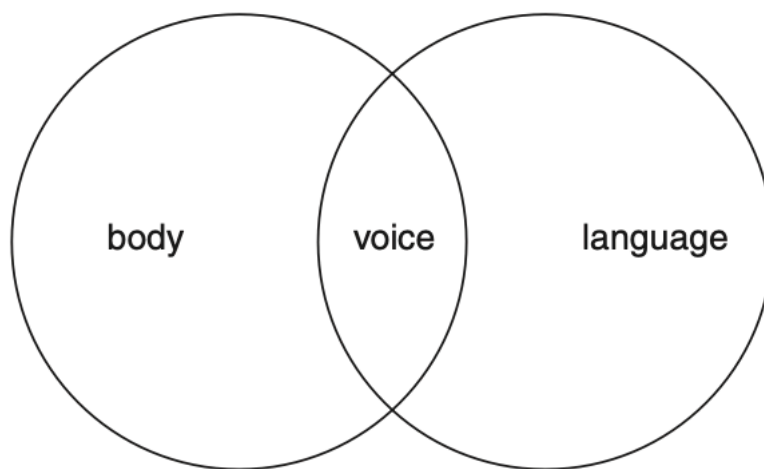
(Dolar, 73)

This internalisation can be better understood in terms of the psychoanalytical theory of Mladen Dolar and Jacques Lacan. What follows through Dolar's commentaries on Lacan, is the conception of voice as an object of the Real. An object that is always hiding, and by its working mechanisms can never be perceived clearly. It is that which binds the various levels of subjectivity of auditory thresholds. These are informed by a chain of associations, which form the ideas of voice as such. The first sound that has ever been perceived by the ear of a person arguably is the sound of a voice. More specifically, the sound of the mother's voice. By establishing a contact with the voice of the mother the pre-born baby confronts and creates the image of the (small) Other. An entity that is exterior to oneself, another human being. Later on it gets acquainted with its own voice. In such a way, the *image* of ones own voice is created. This is the idea of a speaker and the speaking position as such.

The voice becomes a part of the body that is not located in the body, since it already exists as the voice of the (small) Other and the voice of the ego. If we try to attend to our voice, it becomes almost an impossible task. Our voice is the one we do not hear. It is a blind spot,

because it fails to be heard *objectively,* it is a part of a narcissistic chain of identification. Such is also the example of "who am I looking at when I see myself in the mirror?". It is also hyper-present in the same time, since our voice is the one we turn to for understanding ourselves. I can pose the question "How am I doing today?" and answer to myself. Here lies the paradox nature of the voice – I might not remember what was the first sound I heard, but I can ask this question to myself.

In terms of the psychoanalytical theory, the 'silent discourse' is different form the phenomenological one. It differs specifically in how it conceives of thought. Thinking is reversed, it is not the 'I' who thinks, but rather 'I', the ego, is responsible for subscribing to the unconscious activity that partly forms out of 'fantasy'. It is not only that the voice connects us to the social, but also to the realm of the unconscious. The auditory *imaginary* described by Ihde cannot ignore the levels of fantasy that relate to it. And as composer Gerard Pape, writing about Ianis Xenakis points out:

> "We can invent only when we do not cut ourselves off from our imagination,
> our inner creativity, which comes, in part, from the unconscious." (Pape, 1)

I believe that the acceptance of this lack of clarity is an effect of the voice which can bring one to layers of self-reflection, and artistically this is of high value. To return back to Yannis Kyriakides and his conception of the voice, which the idea of 'inner discourse' is derived from, is to embrace that the "absence leads the listener to an even greater awareness of voice because of, and not in spite of, its absence" (Kyriakides, 9).

To understand better the experiential threshold of the 'silent voice' it is necessary to return to what Don Ihde describes as the "polyphony of experience". He separates two modes of attention. The first being an 'outer' attention, which is perceptual – the attention oriented towards our senses. The latter is the mode of 'inner' attention – the attention towards our imagination. According to Ihde, usually such modes of attention would interfere with each other, as well as a persistent focus could be maintained only on a single mode. Although, he finds listening exceptional. The listening attention is *polyphonic* particularly because of the 'silent voice' which continues to be present: "I hear not only the voices of the World, in some sense I "hear" myself or from myself" (Ihde, 117). Being such, the *imaginary* and the *perceptual* are experienced as being co-present and influencing each other.

In an example, Ihde writes about a copresence of attention that takes place when reading:

> "I sit down to read, the book lies before me "perceptually," and I must "see" in the words the thought that they may bring me. Of course it is not the "shape" or the "surface" of the letters that I attend to, but the "meanings" in the words. But while this activity proceeds I may find myself "wandering off " into my own thought, perhaps stimulated by what I have read, and before long the reading has receded and become "mechanical" as I move from the meaning in the words to focus on my own "inner" meaning thought. One or the other side of imaginative-perceptual copresence ordinarily takes precedence. Such variations establish the essential possibility of copresence but do not exhaust it." (Ihde, 125)

This description might not be necessarily focused on listening, but it describes the fluidity of mappings of experience that take place in the *imaginary* and *perceptual* attention. A state that is usually attributed to the idea of synaesthesia, where a perceived pitch would be vividly experienced as a certain colour without perceiving such a colour with one's sight.

Ihde further brings up another mode of experience which gives some idea of the crossovers of attention. He describes an ordinary "hallucination" as a state where neither a "pure" imagination or a "pure" perception takes place:

> "This momentary synthesis of "inner-outer" is a moment where in the same dimension copresence comes together whereas ordinarily there is a resistance to this. The diagram in figure 9.1 illustrates this situation. What is ordinary here is the initial "distance" between the perceptual and the imaginative modes, although also ordinarily focal attention will be weighted on one or the other. But in the occasion of a synthesis (b), the moment of the particular "hallucination" of a "blending" of copresent awareness, this "distance" disappears." (Ihde, 127)

Perceptual
Awareness

"Synthesis"

Imaginative
Awareness
(a)

moment
of
"hallucination"
(b)
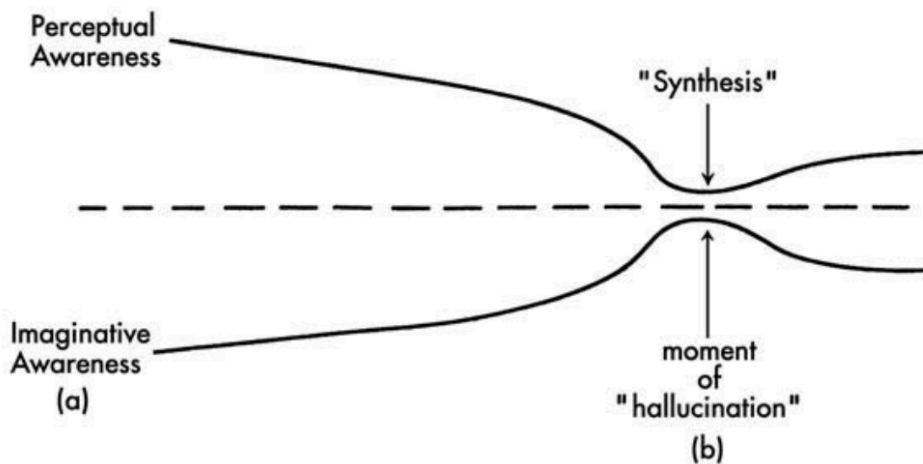
(Ihde, 127)

To give an example which extends to a different cross-over of sense and imagination – I can focus on the bee buzzing next to my ear or I can focus on my daydream about the earths cycle around the sun. At a momentary merging of the two types of focus, suddenly the sound of the bee is experienced as a sonic boom.

Ihde attributes the voice to self-presence and thus the ordinary 'hallucinatory' is understood as a conscious state – it is the interfacing of the 'outer' and 'inner' attention. Although there is also a broader question about such an experiential condition that considers the voice as non-self-present, which disturbs the very bases of the *imaginary* and *perceptual* category as 'resisting' one another.

During his early work Lacan, the same as Freud before him, was interested in the pattern of behaviour displayed by patients after hypnosis. The patients were told that there is furniture in the room and were instructed to pick up something from the other side of the room, although the room was empty. On their way across the space, they seemed to be walking around invisible objects. When they were asked why they didn't walk a straight line, they replied with false statements such as – I moved to take a look at a painting on the wall (Leader and Groves, 25).

This was categorised as a negative hallucination, which is in some respects more interesting than the positive, the condition of experiencing something which is not there as being perceived. The negative hallucination can also be said is almost a precondition if we accept that there is an ego, since the process of making sense and producing a rational story of oneself and one's actions is the working mechanism of the ego. The role of the ego during the 'mirror phase of development' is to produce the illusion of coherence and completeness (Leader and Groves, 26). Hearing is not an exception.

Diana Deutsch, a psychoacoustics professor, in writing about an experiment conducted by the Dutch psychologists Harald Merckelbach and Vincent van de Ven, mentions such a condition where listeners perceive that which is not there. The participants of the experiment were told

that a recording of Bing Crosby singing "White Christmas" was played back in the room. A description of the outcome was this:

> "The students then listened for three minutes to a tape playing white noise, having been told that this song might be faintly embedded in the noise. A surprising thirty-two percent of the students reported that they heard the song, even though it had not been included on the tape." (Deutsch, 112)

A rationalisation of the listening experience takes place, and the listener hears that which is imagined to be heard. The *imaginary* overpowers the *perceptual* by the participant being instructed to 'listen'.

When it comes to pathologies of the 'voice hearer', as in the case of schizophrenia, such an experience reaches the utmost extremes. The two categories of attention collapse. Suddenly the voice is no longer tamed by the *imaginary* and becomes that which must be rationalised as the perceptual. It is the highest degree dis-embodiment of the voice. Although, as mentioned previously, the experience of hearing that which is not perceptually present is not always pathological. As François Bonnet describes in his book "The Order of Sounds: A Sonorous Archipelago":

> "[auditory hallucination] must not be systematically reduced to the manifestation of pathologies, whether hysterical or schizophrenic, or indeed to the manifestation of delirious ecstasy or access to the mystical. It is a mode of hearing that functions on the basis of traces. Thus it is with the rumour of the sea in the hollow of the seashell cupped against an ear which perceives waves rushing landward on a distant shore. The seashell, of course, contains no ocean. Yet it is the sea that we hear, that we hallucinate, or rather the reminiscence of the sea, as conserved by this relic of the seabed, captured and detained like a past impression." (Bonnet, 23)

It is a perceptual 'limit case' of listening. It is a mode of listening which manifests in the momentary merging of the *imaginary* and *perceptual* as described prior by Ihde. It is also a crossing of different fields of attention, such as the visual and the auditory *imaginary*. An example which comes to mind is that of Freud's own description of such a synthetic experience in a near death situation:

> "[..]in these situations of danger I heard the words as if somebody was shouting them in my ear, and at the same time I saw them as if they were printed on a piece of paper floating in the air." (Smith, 199)

Even if the voice in the previous examples is not always dominant, it can hardly be ignored and taken out of the conversation which regards the field of auditory imagination. This is so because of its privileged position in listening – of it being omnipresent in the listening attention.

II : Fantasizing and overhearing

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"(..) hark to the suspiration,
the uninterrupted news that grows out of silence."

(Rilke)

For the past week I have been waking up every morning and making a single excitation of an Indian taal[5]. I imagine it to be a distant relative of the Tibetan tingsha, thus the use is unconventional and, of course, very naïve. Both being slightly unbalanced in weight and weary in its circles, the excitation produces a high register sound almost a semitone apart. When excited once, the sound appears sharply and slowly fades into the ambience of my suburban room. I do not ring it twice. It is the sound of the day. I have to live with it even if I do not like it. Sometimes it comes out too sharp and pierces through the eardrum, other times the dynamics are way too silent, and it makes me feel like I could have done better and the day sort of feels quite off. Although the sound image in my mind does not fade, it is clear and tangible. Is it music? Could it be like a condensed performance of a string quartet, all playing high and dissonant melodies? What would be the value of ringing it twice if I already can recall so much? But I do want to ring it twice following an extremely simple logic in my mind, that can be expressed like this:

an unsatisfying sound –> a wish to hear a satisfying sound

a satisfying sound –> a wish to hear another satisfying sound

On a neurological level it could be the pattern of expectation that my sub-cognitive activity is accustomed to, which is that of repetition. Although the previously mentioned example is a conscious activity, it is a wish, wish to reach a certain imagined result. With desire although it is not so simple, since it hides between the lines and is not conscious. In the case of this story the *desire* could be rather in my fantasy of the string quartet than the actual sound of the bells. I want to hear something more than the sound of the bells as such. So, I imagine. It is "what we desire to hear, or rather what we desire to hear again" (Bonnet, 138).

Foremost, I would like to make clear that I introduce the concept of *desire* to better understand *overhearing* – a mode of listening which is based on excess. It is not intended to explain the whole sound world under a single umbrella of categories. The idea of *desire* in listening can be most plainly understood when a linguistic semantic layer exists in a sound – the obvious example of that being speech – where a word might be misunderstood and heard as another without the listener being fully aware of why. It has most prominently been used in clinical settings and philosophy. The use of the concept has been involved mostly with language, to better understand patterns of unconscious processes. To include the notion of *desire* in the

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[5]A pair of clash cyballs. The percussion instrument is used in traditional music of the Indian subcontinent. The word *taal* originates from Sanskrit *Tālà*, which means a clap.

discourse on sound arts is to accept that imaginative, fantasised, associative layers are always present in sound.

The notion is useful to understand listening in terms of unconscious processes, thus to better reason about *overhearing*, is to compare the eye to the ear. "[..] The ear has no equivalent to the eyelid – sound continually floods into it. Listening which is above all a perceptual targeting, an organ of selection and identification, makes up for this absence of a physical barrier" (Bonnet, 137).

To turn back to the voice in order to let it go again in the first sub-chapter – the voice has a privileged position in our listening, because it can be attended to privately as an inner voice as well as an overt, physical sound to be perceived. It becomes a conceptual tool to inspect the in-betweenness of the auditory *imaginative* and *perceptual*.

II.I missing reference

What happens when the physical perception of the sound source itself is in question, although the image is clear? In the 2021 science fiction film *Memoria* Tilda Swinston, portraying Jessica, repeatedly hears a single loud 'boom' in various scenes of the film and appears to be the only one who can hear it (Weerasethakul, Memoria 2021). Bothered by the experience, she goes to see a young sound engineer named Hernán to ask for his help in recreating the 'boom' in a sound studio.

Although the recreation of the noise seems to be successfully achieved, the 'boom' does not leave Jessica throughout the duration of the film. What is the noise? The film gives some answers, although – puzzling by design. One of the central topics of the film is memory and the capability of remembering everything at the same time – a greatly troubling experience for the human mind. One of the unbearable experiences of remembering is that of noticing perpetuality, the way how events seem to repeat again and again in time. It is as if the loud noise heard by Jessica is a force beyond understanding, repeating throughout the history of the world, both encapsulating the far past and future.

Is the noise a type of an *Ursound*[6]? In a commentary on the work of acoustic ecology, Brandon LaBelle returns to the myth of an Ursound as the "[..] beginning of sound, [..] from which the sound world itself is born" (LaBelle 2006, 204). The sound reoccurring in *Memoria* might as well fit into such a category, although for the purpose of this analysis is to take apart why such a conception can be made and how a sound studio plays a part in making such a myth, one that stretches out to the furthest points of desired sound.

There are two layers here that I want to bring in attention. One of them is the process that sound undergoes in the film in order to be reconstructed and recognised, which is that of processing a recorded, digitalised sound in the studio. This is interesting because the defining 'magical' characteristic of the sound must be mediated by electronics. It brings up the alien feature that

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[6] It is also brought up in an Open Letter from 1979 by R. Murray Schafer. In this letter Schafer lists speech as an expression of an irresistible and unifying force of nature (Schafer 1979, 49).

is not recordable and perception suddenly jumps a classification gap from the continuous small changes to the desired sound. The 'boom' becomes identifiable by shaping it phantasmagorical. The desire here could be in what seems to be hidden beneath the surface of the sound. And there is a clear ritual necessary for it. It is worthwhile to notice that the dream-sound is as much disturbing as satisfying.

However, recreating the sound in a studio does not make it fade away, it persists, unifying the real, hallucinated and dreamt world of the film. An impossible object is presented. By the act of recreating the sound in a studio, a connection is made with the layer of the dream (where the sound is heard at first), but then it appears again later, shaking the restaurant table that Jessica is sitting at with an acquaintance, but he does not seem to hear anything. Moreover, the audience makes a clear identification that it is the same 'boom' gradually shaped in the studio (as the same sample is used across the duration of the film). It is as if the temporality of the film collapses on itself. This can be understood better by the theme of memory and two men named Hernán that appear in different times throughout the film, and it is unclear whether they are the same person or not.

It is similar to what Mark Fisher brings up in his analysis of the tale *The Anubis Gates* by Tim Powers, which describes a protagonist named Doyle travelling back in time and ending up at the same place and time where he knew a poem "The Twelve Hours of the Night" should be written by the poet William Ashbless – a minor poet that Doyle is a specialist of. Doyle has studied that specific manuscript of the poem, which in the 'present' of the book reality resides in The British Museum. In the past, after travelling in time, he ends up sitting at the café desk, scribbling on paper with his left hand and writing down the poem. By realising that it is identical to the manuscript, he understands that he himself is Ashbless (Fisher 2016, 40). But a question more dreadful comes up – if he has both read the poem and produced the original, where does the poem come from? The same question arises in the context of *Memoria* – if the exact copy of the sound Jessica has heard in her head previously, ends up being reproduced in the sound studio, where does the original sound come from? Fisher categorizes such strange loops of causality and presence in fiction as belonging to the aesthetics of two subcategories of the Freudian *unheimlich* – the wired and the eerie – which present in themselves a possibility to escape "the confines of what is ordinarily taken as reality" (Fisher 2016, 13) and thus gives, even if a momentary, release from it.

Returning to the sound and what can be taken from it for the purpose of this discussion, there is a layer that concerns repetition of the aforementioned 'sameness'. It is both the short duration of the sound, that does not unveil more features about the referent source, but also the synthetic system of repetition it is put into – the sound always repeats exactly in the same way. If a professional drummer would record a single excitation of a snare drum every day and do it with precisely the same equipment, the same mallet, in the same room, I am sure that it would be impossible to reach a point of such homogeneity. If I would put those recordings together cut precisely in the same duration and with the same onset times in each sample and play it back as a rattle of some sort, there might not be a great difference noticeable in between each excitation, but a bigger texture from the microlevel would emerge. 'Boom' of the film is an alien sound object and cannot be recognised, not because it is synthetic, but because of the mode of repetition it is put in.

What the film presents is the process of bringing the trace of sound into the sonorous, that then again becomes a trace[7]. A hide and seek game. A technical mediation exists as a verification of the 'magic' that the trace has, since it is an extra-sensation with no real reference in the physical world. More so, as B. LaBelle adds to the preoccupation with Ursound, the possibility of such a sound being a "deafening scream" should not be disregarded as well (LaBelle 2006, 214).

II.II silk: Oliveros, Ablinger

In this section I would like to bring to attention artistic and compositional practices that, as I regard and will try to argue, are acting on the threshold of the auditory *imaginative* and *perceptual.* To limit it further, I will attend to the use of "white noise" in two works by Peter Ablinger and Pauline Oliveros. As well as bring forward examples of similar thresholds in other disciplines. The reason behind choosing specifically "white noise" sound phenomena is due to its physical properties of containing all audible frequencies all at once, thus listening to white noise can be regarded as perceptually overwhelming (on the visual domain, this can be compared to looking at white light, which supposedly contains all colours).

To return back to a creative practice, it is interesting to think of an instructive perceptual starting point for an artistic activity. A fragment by Sung Ti (11th c. China) about the nature of imagination in painting examines this:

> "You should choose an old tumbledown wall and throw over it a piece of white silk. Then, morning and evening you should gaze at it until, at length, you can see the ruins through the silk, its prominences, its levels, its zig-zags, and its cleavages, storing them in your mind and fixing them in your eyes. Make the prominences your mountains, the lower part your water, the hollows your ravines, the cracks your streams, the lighter parts your nearest points, the darker parts your more distant points. Get all these thoroughly into you, and soon you will see men, birds, plants, and trees, flying and moving among them." (Deutsch 2019, 110)

Silk becomes something like an imagination device, not too far from a mnemonic one. Although here the painter needs not only to remember but can also go beyond accurate depictions of landscape in relation to the light shed on a piece of silk. The work therefore becomes in the intersection of the instruction (as language), the chance operation of light and the artists imagination and skill.

To take this visual example further and think about similar possibilities in sound, an example can be found in Japanese poetics. Here a mundane sound source can turn into mental

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[7] It can be restated that the sound is reconstructed from the *imaginary* domain of experience into the *perceptual* domain but maintains to be so strongly linked to the *imaginary* that it is impossible to distinguish to which field does it belong to.

wonderings and fantasy acrobatics if listened to with an open ear of possibilities, as Allen S. Weiss writes:

> "The kettle sings well, for pieces of iron are so arranged in the bottom as to produce a peculiar melody in which one may hear the echoes of a cataract muffled by clouds, of distant sea breaking among the rocks, a rainstorm sweeping through a bamboo forest, or of the soughing of pines on some faraway hill. [..] All Japanese poetic depend upon such sonic correspondences: we conceive the kettle as both instrument and synthesizer, listening for the mimetic music of the world." (Weiss 2007, 67)

One can bring now into the minds ear a compelling collage of field recordings that could reconstruct this act of drifting away in the fluctuations of the whistling tea kettle. Although, when represented, such a composition would only elucidate the creators experience of the vivid listening situation. Nevertheless, this can already be understood as an artistic practice driven by the auditory *imaginative*.

But if we suppose that there is more to experience in the interfacing between the spectators/listeners perception and the silk screen or the whistling tone, then is not the screen or the boiling kettle and its sound already enough to create an internal drama? Perhaps, the artistic intention here would be, rephrasing a famous Buddhist koan – to put forward the "mind"(*citta*) that is moving a flag, instead of the wind moving or the flag moving (Mahajānas budistu teksti 2021, 145).

During the 1960's and 70's American sound artist and composer Pauline Oliveros, wrote a collection of text scores for a guided listening practice titled "Sonic Meditations". Oliveros introduces ideas that focus on a mode of listening which she titles as *deep listening* – a mode which invites the continuum of all possible sounds to arise without exclusion. This also includes the possible auditory fantasies and most of the scores are designed to trigger such creating that continuum of the *perceptual* and *imaginary* auditory experience.

One of these can be found in a text score number six titled "Sonic Rorschach" which includes the use of white noise. Oliveros writes:

> "With a white or random noise generator, flood a darkened room with white noise for thirty minutes or much longer. The band width of the white noise should be as broad as the limits of the audio range. A pre-recorded tape or a mechanical source such as an air compressor may be substituted for the generator, If necessary or desired. All participants should be comfortably seated or lying down for the duration of the meditation. Half way through, introduce one brilliant flash of light or one loud, short pulse. The high intensity flash source could be a photo-lamp flash or one pulse of a strobe light. If a sound pulse is substituted for the light flash, it must necessarily be of higher amplitude than the white noise." (Oliveros 1971, 10)

In addition, variations include substituting the electronic white noise source for a natural one (like running water), changing the bandwidth filtering of the white noise generator, adjusting the flatness of white noise so it sounds flat for the ear.

In "Sonic Rorschach" the absence of the division between a performer and audience is already inscribed in the practice, as it is also noted in the introductory page to the edition (Oliveros 1971, 3). Although, even if it is experienced alone, there is a great deal to say about the imaginative potential of the piece.

(1) The instruction differs from the silk example mentioned before in such a way that there are no end results intended for this practice. As well as there are no objects even indicated to conceive of in the noise, as opposed to the men, birds, plants etc. to be found in the silken zig-zags. Thus the mental space is free of pre-given association chains.

(2) The preparation of expectation and the release of it is stripped down to almost its bare minimum. There is knowledge of an event to happen, although the subjective flow of time is specifically obscured in the overwhelming condition of being exposed to consistent white noise, since it allows no measures, no difference to be perceived of. Then, even on the occurrence of the flash or burst of sound, there is only one dramatic event, which fades away again in the monotonous totality. The mental image can be recalled by will, paradoxically it seems to be done both clearly, since it is the only composed occurrence besides the noise field, but also with a hint of doubt because of the constant auditory stimulation. The only expectation left is the ending of the piece.

(3) In having the occurrence happen in the middle of the piece, a listener is confronted directly with a formal division of time, that of a 1/2, although, I would like to say, perceptually it presents unevenness of this proportion when experienced in such a way.

I would like to argue, that it differs from the artistic practice *driven by* the auditory *imaginative* by rather being *focused on* the auditory *imaginative*. A focus on the act of expecting or expecting no longer, which also holds true to the stream of thought that follows through the piece.

Similarly as in the piece by Oliveros there is even a more directed focus on possible thinking in high degrees of abstraction in "Quadrat" by Peter Ablinger. The question here is how to present a square (or it can also be said, how to present a clean canvas) through the means of sound (Ablinger, Quadrat 1994). It is a four minute long composition for a single loudspeaker. Across the duration of the piece, broad band white noise is being played in a room whit a sharp onset in the beginning and a sharp decay at the end (about 40ms). There is an interesting parallel to the clear time proportion created by Oliveros and the choice of number four (the smallest composite number) chosen as duration by Ablinger. From this perspective it can be said that both are minimal approaches, since they are engaged with mathematical primitives. What is the role of imagination here then? Important to note that the choice of white noise here is not arbitrary, but motivated. As Ablinger writes on silence and the concept of Rauchen:

"The reason why we hear 'less than nothing' is that we cannot connect to it by just listening. It is simply too much. We can't do anything with it. The only thing that is left to do is to produce illusions, i.e., to hear something "in" the noise that is not there, that can be perceived only individually - to project our own imagination onto that white 'screen'." (Ablinger, Rauchen 1994)

It is both the mathematical primitive and a projection of imagination that allows a composed state of intersubjectivity since the canvas is the same.

In order to think about such a compositional act, I will take a closer look at the phenomenological field theory of Don Ihde. According to it, all focusing in both the *imaginary* and *perceptual* domains, can be conceived of having a *core-fringe* structure in relation to a given field. A field can be understood as that which we are consciously attending to. And in this field, I can focus on a particular entity within it and this would be called the *core* of attention while the other properties in the field become *fringe*. To give an example:

> "I may concentrate on a single sound (core) and all else becomes fringe. But I may also expand the focus to a given set of objects (I scan the entire chessboard; I listen to the whole symphony) while the fringe is unattended to (I don't attend to my opponent's chair; or to the coughs of the audience)." (Ihde 2007, 206)

Thinking about "Quadrat" by Ablinger, we can say that attention is directed towards the auditory *imaginary* since the idea of white noise being a white "screen" can perhaps be understood more clearly in the terms of a field, where perceptually in white noise the *core-fringe* are the same.

The idea of total silence would be the other end of such auditory perceptual modes, although, we can well assume that perceptually there is never "nothing". Besides the example of John Cage and the anechoic chamber experience, there can be another take on it which disregards negative clauses. Thus statements like "I can't see (anything)" can be reformulated as "I see black", and "I can't hear (anything)" as "I hear quiet" (Ihde 2007, 204). For now, what regards white noise is that it can be understood as one end of the perceptual poles of the auditory sense, and perceptually it directs our focus towards the auditory *imaginative* simply because there are no other sound layers to attend to except the totality of sound. Attention seeks refuge in the *imaginative* mode. And since imagination acts by the logics of combination and substitution, the "I can hear (everything)" becomes a desired blank space to fill.

II.II tape voices

There is a strange history that comes outside of music, which shares a similar interest in 'tuning into' noise, but to reach goals that are far off from the previously mentioned compositional intentions. I have chosen to mention it here since it can provide interesting insights on how a change of medium for recording and producing sound can alter our imagination of what is possible to hear.

Several months ago, while digging through tape collections in the local second hand store, I found a peculiar tape (Fig. 1). On the back of the cassette packaging it says: "As you play this tape, you will only be aware of the sound of ocean waves. Your subconscious mind, however, will detect and be influenced by powerful, subliminal suggestions which are hidden in the sound of the waves." I have never played back the recording on the tape, but I found the artefact both striking and entertaining because of its conception of sound. It is apparent that the idea of sound being an impacting force of such great measure that it is capable of surpassing conscious

listening and 'reprogramming' the human mind from within. Nevertheless, not only the medium of magnetic tape carries with it a history of similar promises.

(Fig. 1)

This unlimited promise of 'technology being capable of discovering the unknown', was already at the genesis of recording technology. When Thomas Edison invented the first technology that could both record and play back sounds, namely the phonograph, a wilderness of untamed sonic phenomena was presented to the eager public of adventures recording enthusiasts and listeners. This provided a possibility to fixate, fragment, classify and to hear again the constantly appearing and disappearing sonorous.

The confrontation of the recorded voice apparently had already one of the most striking effects. The writer William Gibson in a documentary film *No Maps For These Territories* tells a story about reading a diary entry form the beginning of 20th c. In the entry a priest describes his first experience with the sound of Edison's wax cylinder and writes of the horrific event he has went through. A voice recording was played back on the cylinder, and he could not believe of how low humanity has come – "How can a voice take on such a degraded, hideous version of itself?" (Neale 2000).

The fantasy of the recording technology led Edison even as far to imagine that the machine could even in the far future establish a contact with the dead. (Hausswolff 2000, 1) Decades later this idea surfaced again with the exceptional case of Friedrich Jürgenson – an Odessa born Opera singer, turned painter and an early tape-recording enthusiast from Sweden. In his diaries he writes about one of the first experiences of listening back to tape recordings:

> "I heard a noise, vibrating like a storm, where you could only remotely hear the chirping of the birds. My first thought was that maybe some of the tubes had been damaged. In spite of this I switched on the machine again and let the tape roll. Again I heard this peculiar noise and the distant chirping. Then I heard a trumpet solo, a kind of a signal for attention. Stunned, I continued to listen when suddenly a man's voice began to speak in Norwegian. Even though the voice was quite low I could clearly hear and understand the words. The man spoke about 'nightly bird voices' and I perceived a row of piping, splashing, and rattling sounds." (Hausswolff 2000, 2)

Jürgenson, hearing the tape distortion, did not hold back in assuming that this fluctuation that produces the voice mirage, is nothing else but a spirit, which has found refuge in the medium. It is a perfect loop where listening enters a state of desiring, both in making sense of the signal and of giving that signal a 'face'. Furthermore, it is not just a spirit that infiltrates Jürgenson's recorder, it is a dead spirit. A spirit that he can recognise and that speaks the same language as him.

Another case which appears later in the history of the 20th century and deals with the same presumptions comes from Konstantīns Raudive (a scholar of C.G. Jung and follower of Jürgenson). His methodological description of various communication seances with 'the Other Side' appeared in a volume called "Breakthrough: An Amazing Experiment in Electronic Communication with the Dead". In the book, Raudive described several techniques he used in order to contact the dead. Amongst them were manipulations of tape recordings that contain radio broadcasts and various room ambiences, as well as the act of asking questions to the dead and transcribing their answers. By using these techniques, he claimed to have been in contact with such political figures as Hitler and Stalin, deceased Latvian writers like Vilis Lācis, Kārlis Skalbe (Raudive 1971, 285).

Whether true or not, his work has an overwhelming aura of longing that is mediated by the disturbed politics of the time. This is also true in the specific speech of the dead voices, which talk in twisted neologisms that span across a mixture of Latvian, German, Swedish and Russian. These are languages spoken by Raudive which correspond to languages that are still in use in the countries that had historically ruled over areas of modern-day Latvia. In addition, the short-phrased polyglot speech, somewhat resembles telegraph messages.

What is experienced both by Raudive and Jürgenson is a type of a hallucination, although it cannot be reduced to the field of pathology. It could as well be an outcome of an imbedded promise in the medium, as it is possible to speculate judging by Edison's comment. A promise to hear again. The capture and repeatability of a sound provides listening with slipping in all sorts of directions. And the systematic character of Raudive's transcriptions from noise are an example of extremes of classification that listening provides.

It is clear that in both cases the sound material as such is already one coming out of a machine. But there is also a curious temporal aspect to this listening, where the voices take their time to appear as such for the expecting listener. Paradoxically, whatever concern the acquisition of meaning from the fluctuations of noise also has an immediate effect. Dolar yet again has an observation:

"There is a voice which constitutes an enigma and a trauma because it persists without being understood, there is a time of subjectivation which is precisely the time between hearing the voice and understanding it—and this is the time of fantasy." (Dolar 2006, 136)

III: Relevant works

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In the artistic practice of Tao G. Sambolec the category of 'silent reading' as a mode of the silent voice has been explored with playful experimentation. In *Reading Vito Acconci* the sound artist creates a situation where the reader becomes aware of the reading process. In the liner notes of the project *Reading Reading* Sambolec writes:

> "The research project is a manifestation of the various ways to capture, embody and unsettle the temporal relations that unfold between the written text, eye movement, and the (inner) voice while reading." (Sambolec 2019)

Voice, language and text here are fused in an inter-relational space for cognitive exercise. The grasping of meaning in the words and sentences is put into questioning. *Reading Vito Acconic* consists of the conceptual poem of Acconci projected on a gallery wall. The spectator, while reading the poem, starts to notice a line that crosses thorough the text. It is a measurement of his gaze that wonders around the two dimensional plain of the projected poem. A sensor, which is calibrated to track the pupils of the spectator is installed so that it faces the viewer.

The line becomes that which disturbs the process of reading and at the same time illustrates the non-linear movement of such a cognitive task. The text he has chosen is not arbitrary but motivated. The first line can be taken as an example of this – "READ THIS WORD THEN READ THIS WORD READ THIS WORD NEXT READ THIS WORD" (Sambolec 2019). The poem consists of eight lines where in each the permutations of the instruction to "READ" unfold in "SEE", "TAKE IN" and "LOOK AT", which emphasises the different perceptual layers that can be encountered in the process of reading. The 'silent reading' becomes present, because of a disturbance and the voice is that which is encountered in the gap of understanding and experience. Words as the basic units of semantic meaning become isolated entities to attend to and as such become meaningless, the artistic focus is in the perceptual targeting process.

Sound wise, the work includes a prerecorded audio that is played back of the artist enunciating in his native tongue the number count of letters in Acconci's poem. The counting process indicates at the discrete character of written text – that of consisting of letters at its smallest unit – which highlights the *alien* feature of language as written text opposed to the spoken one, where the voice is rather continuous[8]. In the intersection of the played-back audio, the displayed text with its semantic meaning, and the drawn line visualising the gaze, surfaces as an attempt to break down the sub-cognitive activity of the reading process. To unlearn what we do not remember learning.

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[8] From the point of view of phonetics, such a discrete unit of speech would compare to a phoneme.

What follows through the poetic investigations of Acconci and the new media techniques used by Sambolec in his reworking of the poem can be found as a larger aesthetic interest in working with already existing pieces of writing in the 21st century:

> "[..] In the information age, the poetic function is not to produce new writing – we have too much already – but to force us to see what the language environment we live in looks like and feels like, to make it strange." (Perloff 2006, 170)

In Tao's work the technological counterpart to reading – the tracing of the movement of the eye on the screen – can be interpreted as an interest in the media environments we live in and where reading takes place. To make the process of reading *strange*, by investigating the technologies currently used for reading text, which are increasingly screen orientated. It is not hard to imagine a similar process of tracking the eye-movement through for example the web camera on top of a laptop screen for different purposes, like that of collecting big data for consumer analytics, which I am not going to go more in detail here. The role of technology in the work might function not only as that which disrupts the 'silent reading' process, but also as a commentary on the contemporary reading practices in relation to increased behavioural monitoring.

In another work under the same research project (*Reading Reading)* titled *Reading Voice* Sambolec turns the tacking of the gaze from a line on the screen into a sonification process. As the gaze crosses the text on a screen, stretched out phonemes are heard from the speakers positioned around the spectator. This done realtime by what seems to be a granular procedure. The 'silent reading' process suddenly is heard and sonified into a voice of another, namely the speech actress which has read the text beforehand for sampling. In both cases the works are located at the threshold of "sensing and making sense" (Sambolec 2019).

Similar approaches to the integration of 'silent reading' in an artistic project can be noted in *Reception Bells* by the sonology alumni Guzmán Calzada Llorente. *Reception Bells* is a composition for two performers, five reception bells and live electronics. The performers are both silently reading a text in their own pace on the stage. A score highlights each vowel in the text from the 5 english vowels in a different colour that indicates a different bell to be excited when encountering the indicated letter (Llorente 2019). The same text is handed out to the audience before the beginning of the performance. It includes the description of subvocalisation – a process by which the musculature of the vocal mechanism moves in accordance to the words read on a page. This is a phenomena that is understood best by early 'silent reading', where the vocal mechanism can participate in understanding the written text and potentially reducing cognitive load.

Sound installation works and compositions that greatly explore these intersections of text, film, voice and music can be found in the creative practice of Yannis Kyriakides. Although I will not describe these further mainly because of the reasons of not being acquainted well enough with his repertoire, since I got to know about his creative practice very late in this research. Nevertheless the context he has managed to establish around the various modes of the voice has inspired me and contributed to the tools of assessing the artistic problems I am dealing with, thus I would like to make this mention as a further point for research.

In Toshiya Tsunoda's record *Landscape and Voice* a plain is constructed by a rich collage of field recordings spanning across birdsong, water, wind and construction pipe sounds. A breaking in the field occurs when the subtle collage of 'natural' soundscapes are broken down into atomic units of vowel like sounds combined with the previously played recordings. These sounds are presented as glitched loops of single grains of sound assembled in repetition against a digital silence. The tempo and rhythm of these interruptions vary across different tracks on the record, as well as the duration of these interruptions. In *Landscape and Voice* fragments of voice are carrying with them the connotation of 'the human'. This technique of fragmentation creates an attentive listening condition in which it can be speculated that the listening subject is presnted.

The gaps and glitches seem like words which are stuck in the body of the listener when confronted with the ever-in-motion outdoor soundscape. A voice becomes just bear identity of a human being, not a particular body, not even overt – it is just the 'spectator'. Isolated and stripped away from the rest of its expressive capabilities. The curiosity of listening to the abrupt cuts on the sustained field recordings, as well as on the repeating grains of the vowels can be linked to what in psychology is known as Zeigarnik effect. Such an effect occurs in activities which are suddenly interrupted, this interruption produces the conditions where the activity becomes more easily recalled. In such a way the record of Tsunoda creates the conditions where all sounds become vivid by making the breaking of continuity articulated.

IV: A practice
—

In the work *object study 1* I attended to the formant structure that partly characterises the timbre of human voice. It is also a quality that has been explored more greatly specifically due to the aid computational techniques. Marie Guilleray has categorised this as one of the defining voice signal identity aspects. From the point of view of psychoacoustic, the voice signal contains specific peaks in the spectrum that characterise such timbral differences as those which allow one to distinguish 'vowels' in speech, song and utterance.

> "In speech science and phonetics, formant is also used to mean 'an acoustic resonance of the human vocal tract'. Containing formants is a very unique characteristic of vocal sounds that other sounds do not have. In reverse, if we want to give to a non-vocal sound some kind of 'vocal quality', we can capture the formants of a vocal sound and add them to the non- vocal sound to give it this 'vocal feature'." (Guilleray 2012, 6)

I was interested in using this sound characteristic of the voice, because of it being a filtering mechanism of the voice rather than the oscillatory or articulation mechanism, as well as being suitable for the site-specific conditions I was dealing with.

There were at least three compositional ideas that had informed the methods of working with synthetic and recorded sound material in this work. One of them being an idea of structure-born sound as understood by Maryanne Amacher. Another inspiration for the work was a sound inatallation by Peter Ablinger titled "Weiss/Weisslich 15".

I conceived of the work known as *object study 1* while doing a course in sound art guided by Justin Bennet in 2022. The class was presented with the possibility of making a sound installation in the 200-meter-long shooting gallery in the basement of *het Hem*, Amsterdam. When I thought about the specificity of the space and my own intentions of its use, I imagined a long pipe, or perhaps a long vocal tract. Since it is closed at both ends, I thought about the physical sensation of humming to oneself. In this situation, the mouth is closed, and the voice resonates in the body surrounding the vocal mechanism. Humming can also be understood as a musical act aimed at one's own embodied experience compared to overt singing with an audience.

It was also related to my interest in working with the 'silent singing' mode of the voice. In its functioning one of my hopes was to perceptually trigger the listener in the space to direct their attention towards the movement of their own vocal apparatus and possible motor-reflexes. Somewhat like the temptation of a child to sing into a well to hear the echoes and resonances of their voice being reflected back.

The process of making this piece can be described as such:

(1) Inspecting the space and testing acoustics by inserting a speaker at an approximate midpoint of the tunnel (~100 m). Then projecting the sound of different simple oscillators (sine wave, sawtooth wave etc.) in the space varying frequency and amplitude. Calculating the supposed lowest (frequency domain) standing wave that could fit into the space by the space. Multiplying the given result to reach an audible frequency. Projecting the sound of a sine wave oscillator in the given frequency and walking around the space.

(2) At a sound studio – recording the sound of the English vowel 'a' and 'e' spoken by me. Inserting the recorded sound files in Praat software and measuring their fundamental frequency and first 4 formant frequencies. Calculating the ratio of f0 to f1, f2, f3 and f4 by dividing the fundamental by each of the formant frequencies. I intended to do calculate a supposedly static state of the voice, which then could be resynthesized by using the same f0 frequency and multiplying every other partial by the calculated ratios. Listening back to the resynthesized vowel analysis by using sine wave oscillator in SuperCollider and adjusting the amplitude levels to get a recognisable correspondence. If I would lower f0 and keep the ratios, I would supposedly get a transposed version of the same signal, similar to tape playback transposition by speed.

(3) Use the calculated ratios for other synthesis methods (vowel synthesis, subtractive synthesis, stochastic synthesis) besides the additive one mentioned previously. Work on the sound material in the conservatorium studios.

(4) Gathering ideas of structuring the selected sound material. Since the hall where the piece would be presented was dedicated to also other works, the choice of duration of each piece was agreed on being approximately 10 minutes. An 8 channel sound system was offered for use in the space. With the given conditions I decided to proceed with two ideas of organisation:

> (a) The macro-form of the piece was mainly organised in transitions of one formant state into another, namely 'a', 'e'. I decided to start with a gradual introduction of the upper formant frequencies of 'a' in a 'comb type' of method where the higher partials of 'e' are played on other side of the room. This was done using the additive synthesis method. The condensation of the vowels would appear to be simultaneously present during the mid-section of the piece in the form of extended drones that are slightly changed in amplitude by a sine wave lfo modulation. The final section of the piece decreases the volume of the higher partials and leaves only the fundamental frequency drone that produces an effect of pulsation due to the close proximity of fundamentals used at both ends of the space.
>
> The drones were chosen due to the desired effect of producing standing waves, which would be experienced by the listener in the space by moving through the tunnel and noticing mainly difference in amplitude levels in various positions in the space. The production of different resonances, and pulsating frequencies would be an added effect due to the proximity of some mid-high frequencies. If one would run or walk fast through the tunnel during the mid-section of the piece, it would be possible to experience a type of a spatial tremolo.

(b) The addition of other synthesis techniques was chosen in accordance to the spatial and temporal organisation of the leading additive synthesis technique. These functioned as an added textural layer.

(5) Visiting the 200-meter-long shooting gallery, and collectively agreeing on the placement of 8 speakers in the space with other participants of the exhibition. The placement of the system was chosen to be asymmetric. Speakers were set up along the walls of the tunnel. An additional decision was made to put one of the speakers inside a separate room at the side of the tunnel. The furthest channels of the sound system were placed at the 100 meter, and at the 180 meter mark. During the playback of the piece I had chosen to turn the speakers located as the sides of the tunnel to project the sound towards the walls to have a wider dispersion angle.

(6) Creating the synthesis in relation to the formant ratios of the width, length and height standing wave frequencies of the space. Recording the synthesised material from SuperCollider internally to have better possibilities of mixing. Testing the precomposed material in the tunnel and adjusting the levels of each channel in REAPER to match the preferred resonances of the space.

(Fig. 2)

Concerns:

The measurement of vowels could be done better – this includes the change of a microphone and voicing method.

Using other synthesis methods in the additional textural layer was not necessary to achieve the humming sensation. Working with proportions of the space and with the taken measurements would have been of greater importance.

Composing just with the ratios from analysis and the approximated resonant frequencies of the space would have been more focused. Even with using the additive synthesis technique and multichannel expansion in SuperCollider would have been enough.

Comments:

The choice of using vowels 'a' and 'e' is partly inspired by Arthur Rimbaud's poem "Voyelles". The poem is widely recognised for its descriptions of synaesthesia of colour and vowel. The piece would present a gradient monochrome – 'a' corresponding to 'black' and 'e' corresponding to 'white'.

Image of the space in Fig. 2 is made by Justin Bennett.

IV.II object study 2

Object study 2 is a software adaptation of the sound installation *object study 1*. I used the possibilities of using routine based compositional techniques in SuperCollider to adapt the previously described work to different spaces of presentation. I had this in mind already while making the first rendition of the piece, but the main reason of not choosing this method in the first place was due to the site specificity of the *het Hem* shooting gallery, which presented specific mixing conditions. The result of revisiting and adapting this work has led me to explorations in aleatoric possibilities of executable code composition, formalisation, and other algorithmic approaches.

The process behind this can be roughly described as such: creating a score draft of the previous composition; recomposing it for a stereo field instead of an 8-channel system. The choice of using a software approach rather than a fixed media piece is motivated by the idea of adaptable space specificity.

Object study 2 can be found following the link: https://andrejs.poikans.com/ostwo.zip

IV.III Well trained writers

In the piece *Well trained writers* I wanted to bring to attention the process of making meaning. Since writing comes after learning to speak, we become aware of relics of the movement of our vocal mechanism in the process of writing. And similar to the piece described in the

previous chapter by Tao G. Sambloce the focus here lies in both the execution of language, that is done privately, as well as in the collective and focused listening.

Well trained writers is a text score for an open number of participants. The participants are handed out sheets of paper and graphite pencils. The papers are attached to a white plastic pad. Handwriting is chosen in this case since it is less discreet than typing on a keyboard and is closer to the experience of speaking.

The participants sit in the same room or at a close distance, enough to hear the scribbling on paper of the other participants. The task is to notice the difference of speed each person has when writing both given sentences and writing their own thoughts on paper. It is requested to carefully listen to the gradual decay of density in sound made by the pencils pressing against paper, as well as the pad on the back. Concerning the form of text – section 1 is an introduction; section 2 is a narrative, drama; section 3 is a contemplation; section 4 is repetition by erasure.
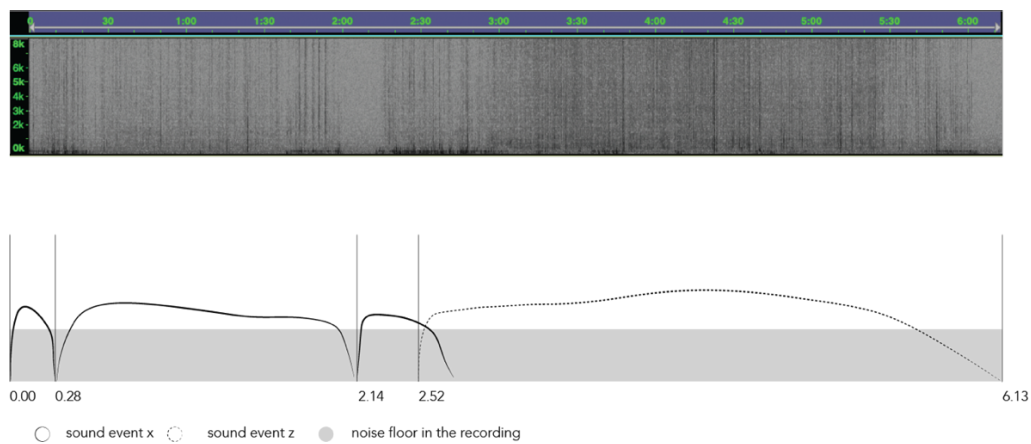
(Fig 3.)
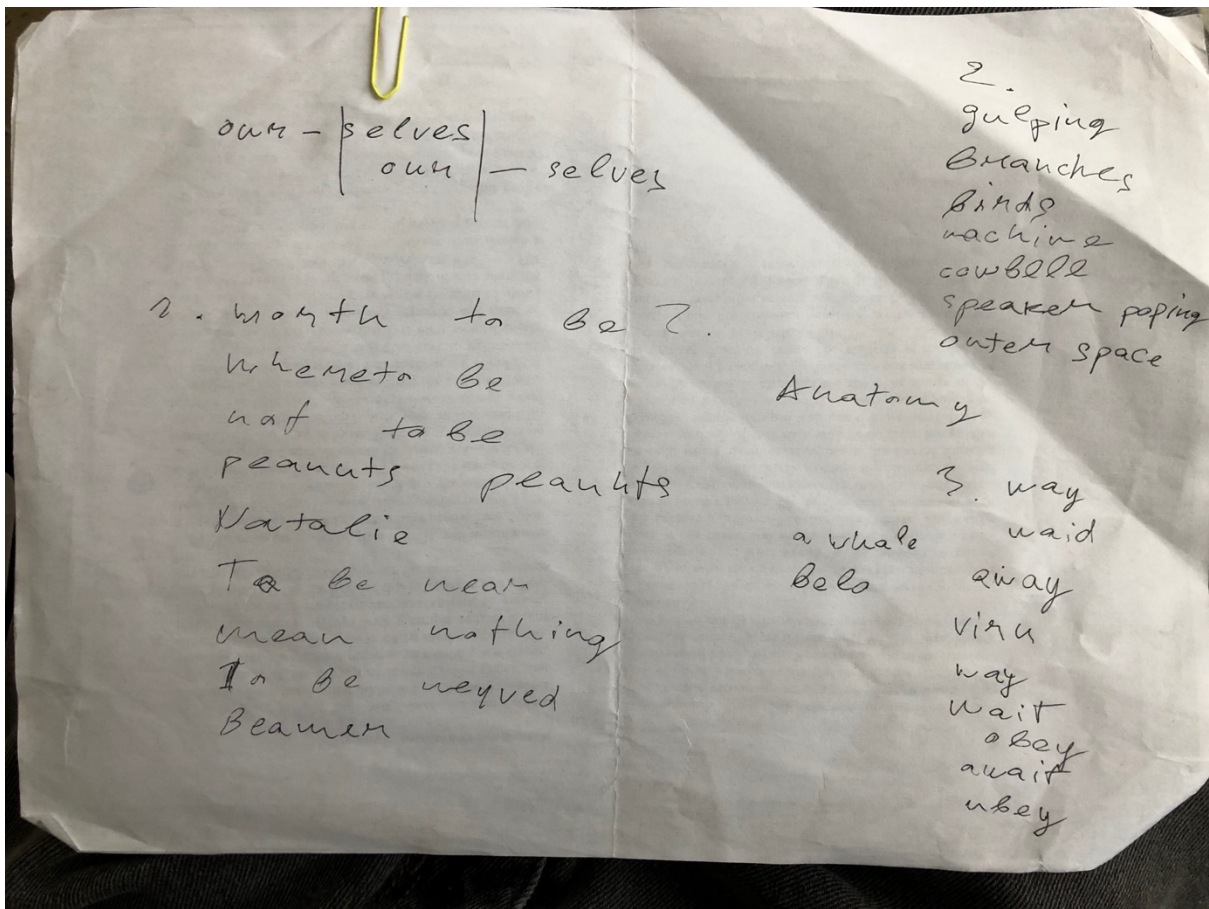
(Fig. 4)

In a workshop conducted by Katarina Petrović during spring 2022, I developed a work based on a psychoacoustic experiment described by Diana Deutsch as "Phantom Words". I chose this experiment because of my interest in the poetic potentials of *overhearing*.

To take a step back before describing this in more detail I would like to turn to a game of language which is most commonly known in American English as 'telephone' or in British English as 'Chinese Whispers'. It instructs participants of usually a larger group (more than 6) to stand next to each other. At one end of a chain an initial word is whispered to an ear of the next participant in the chain. This process continues until the last person in the chain enunciates the word they have heard. The result is a compelling distortion of the initial phrase for the joy of the participants. The game comes from many different traditions and is played by children worldwide, it focuses on the process of mistaking one word for another by overhearing it.

A similar focus on such a semantic distortion is also at the centre of Deutsch's "Phantom Words" experiment. It is based on a process of playing back a sequence of repeating words on two loudspeakers:

> "A sequence is played that consists of two words, or a single word that's composed of two syllables, and these are repeated over and over again. The same repeating sequence is presented via both loudspeakers, but offset in time so that when the first sound (word or syllable) is coming from the speaker on your left, the second sound is coming from the speaker on your right, and vice versa." (Deutsch 2019, 108)

While being exposed to the stereo offset of these words for an extended period of time, the listener experiences a jumbling of the phonemes that results in an illusion of hearing other words instead of the looped phrases. For example, the persistent repetition of "nowhere" led listeners to hear phrases such as "no time", "long time", "any time". Additionally, as Deutsch points out, the repetition often not only produces illusions of words, but also a variety of percussive sounds or tones that are not present in the audio.

The *phantom words* heard do not necessarily appear to be in English language – the participants of the experiment often heard words spoken in their mother tongue. At many occasions, the *phantom words* related to associative layers of the participants, e.g. if a person was feeling tired, they would hear a phrase like "no brain". The reported phrases were also reaching further into more obscure areas and not obviously relatable meanings and at times not even phonetically similar to the initial words played back. What remains is the short form of the phrase consisting of two to three words.

In the workshop, I decided to recreate this experiment by using the words already described in the original experiment, as well as adding new words to the mixture and sequencing two to three different two syllable phrases instead of looping the same phrase, sequencing 3 syllable phrases with an offset of only the first syllable. The process of constructing my own version of the experiment can be divided in such steps:

(1) recording the words "nowhere", "melting", "when oh when" as spoken by a voice actor;

(2) recording a text spoken by the same voice actor and selecting two syllable phrases from the text and cutting them out of the longer recording;

(3) constructing a program in SuperCollider to play back the recordings as instructed in the experiment;

```
//read the sample

~w = Buffer.read(s, ~path ++ "new/when_o_when_lawrence_mono.wav");

//sample duration

~durW = (~w.numFrames/~w.sampleRate);

//define a playback synthdef

( SynthDef(\words, { arg out, amp = 1, rate = 1, buf = ~run, pan = 0; var sig;
```

```
sig = PlayBuf.ar(1, buf, BufRateScale.kr(buf) * rate, doneAction:2);

sig = sig*amp; sig = Pan2.ar(sig, pan); Out.ar(out, sig); }).add;

(

//start playback delaying the phrase on the left channel by a half duration of the sample

Ndef(\wL)[0] = Pbind( \instrument, \words, \dur, Pseq([Rest(~durW*0.5)], 1) ++
Pseq([~durW], inf), \pan, -1, \buf, Pseq([~w], inf), \amp, 0.3 ).play;

//start playback of the same phrase on the right channel with no delay

Ndef(\wR)[0] = Pbind( \instrument, \words, \dur, Pseq([~durW], inf), \pan, 1, \buf,
Pseq([~w], inf), \ampD, 0.3, ).play; )

// the sequence has to be evaluated at the same time to reach the preferred result
```

(4) recording 4 iterations of the audio produced by the program each for 1 minute.

Additionally to the "Phantom Words" experiment I decided to include another layer to the work presented at the end of the workshop. This layer consisted of a field recording with white noise layered on top and mixed in such a way that the field recording is barely audible. There were three such parts included in the audio played back in the presentation. This layer was meant to direct the listening attention to another identification goal, which was not based in noticing the words heard in the "Phantom Words" experiment, but to identify the source of the sound hidden underneath the broad-spectrum noise. These parts were cut to the duration of 1 minute.

In the final form of the work I created an instruction for what to listen to and to take notes of. This instruction corresponded to the sequence of how the general composition of the two described layers were assembled together. Participants of the workshop were instructed to pick up a piece of paper to take note of the sounds heard. The instruction follows:

1. write down the words you hear

2. write what sound do you hear

3. write down the words you hear

4. write what sound do you hear

5. write down the words you hear

6. write what sound do you hear

7. write down the words you hear

The assembly of the audio was done in REAPER and corresponded to the structure of the instruction.

At the end of the presentation I asked for the participants to share their experience and the notes they have taken. The purpose of this was to understand the different listening experiences and the general success of the chosen techniques. A larger interest of the whole work was to bring to attention the subjective viewpoints of the participants through a collective listening session. The intentions were comparably open ended and the artistic value of such a work was speculative, more of a research process of how such sound phenomena can be incorporated in a sound art practice.

The answers which were shared by the participants covered a field of varied associative material. In the first part, where the word sequence "worth to be" and "nothing more" was played back, the participants reported of hearing such words instead: anatomy, Natalie, to be near, mean nothing etc. In the second section of the masked recordings the identification was more vague, the answers varied across cowbells, birds, branches. In the third section, where the words "run away" were looped as in the original experiment described by Deutsch, the participants reported such answers: way, wait, obey etc.

The general impressions from the audience were mixed. The experiment proved to be true, since the given answers were broad and peculiar enough to acknowledge the *phantom word* phenomena. The sharing of associative layer and the opening up to new poetic meanings that link sound to language and imagination were engaging.

Concerns:

My own critical considerations of this artistic project have to do with the aspect of consistency. The choice of including the barely audible field recording with white noise was not necessary since it confused the audience and the shift of listening attention from semantically orientated to source identification orientated was hard to achieve. In such a way this technique could require a separate artistic project. Another consideration relates to the choices made in the accuracy of the execution of the initial experiment as described by Deutsch. Not all two syllable words produce compelling effects. The inclusion of three syllable phrases as well as mixture of 2 different phrases together produced a larger range of possible *phantom words* to be heard, although this technique is biased due to a possible different perceptual effect to take place which simply relates to repetition. Lastly, the duration of the played back repetition is necessary to be extended in time possibly longer than a single minute, since it takes time for the listener to start hearing the perceptual effect.

Proposals:

Nevertheless, there can potential creative applications for the inclusion of such a psycho-acoustics experiment in future creative works. The use of such a techniques described in "Phantom Words" experiment can be used in mixed media approaches. An example would be a video installation setting, where the repeating phrases could be played together with images displayed on a screen, producing other associative links in the combination and altering the listening experience. Another example could include the use of such a perceptual effect in a electro-acoustic composition, where the repeating phrases would be structured in a longer time duration.

I have used a similar method of working with using both recordings of the spoken phrases together with melodic patterns derived from the phrases played on a clarinet. I will not extend on this here, since the approach was not heading towards a wanted creative outcome.

Comments:

The same experiment of "Phantom Words" has been used on a recent experimental computer music release by Jung An Tagen and Eric Frye titled "Phantom Acid", release in 2022. The album consist of 24 tracks, each track being 1 minute and 30 seconds long. In each a combination of synthesised voices together with sound textures generated by Marcin Pietruszewski's nuPG for pulsar synthesis are assembled in a continuous unfolding of the auditory illusion (Jung/Frye 2022). Given this example, I regard such fields of artistic inquiry as described before relevant to the aesthetics of contemporary computer music.

IV: A post-human consideration

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In the lecture referred to as *Apocalypse, Catastrophe, the End of History and Philosophy* Slavoj Žižek sketches out the necessity of distance between our thoughts and reality:

> "The distance between our inner life, the line of thoughts, and external reality is the basis of our perception of ourselves as free. We are free in our thoughts precisely in so far as they are at a distance from external reality. So that we can play with our thoughts, make thought experiments, engage in dreaming and so on with no direct consequences in reality. No one can control us here. But once our inner life is directly linked to reality. So that our thoughts have direct consequences, or can be directly regulated by a machine that is part of reality and they are in this sense no longer ours we effectively enter a post-human state." (SenseLogic 2022)

This crucial distinction made by Žižek is something that can be put under inspection when we face an age full of technological developments, specifically in the fields of neurology and cognitive sciences. Here we can examine how a computationalism theory of the mind can treat the question of thought, silent speech and auditory *imaginary*.

It is a question of why we include the sounds of words in our thoughts when we are not speaking? Andrea Moro examines this question in an experiment conducted by him and his colleagues, it includes sixteen patients who were asked to read linguistic expressions out loud and then without emitting any sound, while their neurophysiological activity was monitored. The experiment was done by the means of awaken surgery, in which the doctor implants small electrodes in some areas of the patient's brain to get a precise overview of electrophysiological activity. Accordingly, the acoustic sound waves and electrical waves were compared, and, in both experiments, correlations were observed. This led to the discovery, that even in the absence of overt speech, but in the case of inner vocalization, the human brain generates electrical waves that resemble the mechanical sound waves of air that would have been produced if the words had been said (Moro 2020).

Carla Scaletti makes a metaphorical observation regarding the relationship of thinking and music:

> "It seems that the way we experience music is very closely related to the way we experience thought, (..) when we create music, we're creating a sonification of what it's like to be inside our heads," (Scaletti 2016, 378)

By this comparison she is elaborating on her previous claim that sonification is not music and it should not be considered as such. I would not make such a bold statement, but rather say that since the goal of sonification is to obtain 'scientific' knowledge, it is a different mode of listening than usually applied to music – which is dominantly a listening for semiotic meaning, while in music there is also joy.

If we look to the early avant-garde music of the 20th century, the imagination of an instrument that would *short circuit* the chain of compositional process and turn mental activity straight into music was already present with Varèse. In one of his diary entries he writes:

> "I dream of instruments that will obey thought, and which, with the contribution of blossoming of unexpected timbres, lend themselves to whatever combinations I may wish to impose upon them, and yield to the exigencies of my interior rhythm." (Weiss 2007, 70)

It is worthy to note that for many composers of the late 20th century the computer came to function as such an instrument. Immediately turning 'thought' into music. This excitement of software generated culture also echoed in arts during 90's. Florian Cramer, tracing the historic links of occultism and contemporary computation practices highlights some of the utopian ideas of turning idea-to-matter (or words representing and both being action). He regards these technological imaginations as a promise already imbedded in language, made possible by executable computer code:

> "The step from writing to action is no longer metaphorical, as it would be with a semantic text such as a political speech or a manifesto. It is concrete and physical because the very code is thought to materially contain its own activation; as permutations, recursions or viral infections. It is not only words made flesh, but words being flesh." (Cramer 2005, 53)

Through the historic analysis of mnemonic practices and devices Kei Kreutler makes a suggestion that the furthest development of such approaches to extending human thinking is deeply imbedded in the current software culture. In such a way, computation as a practice is linked to utopian ideas of an extended mind. If notation was an extension of the mind of a composer since at least Guido d'Arezzo in the western tradition, the practice of live-coding is a similar extension of the composer's mind.

Here the difference is in the collaborative and speculative nature of such a practice since words become executables and provide a real-time musical practice. Thinking, listening and composing become intertwined in a single act of creation. If we turn to auditory imagination, it has some curious implications, since it relates a lot to remembering and bringing a sound to 'sing' in our imagination. It becomes a mental sound object. In such a way it is interesting to speculate about the similarities of mnemonic ideas and the executable logics of words into sound as provided by computer generated sound possibilities. In the process a world of poetic association chains could potentially arise at the crossroads of words in the code and sounds being produced. It shapes our imagination and the possibilities of the music to come. If the definition of thought would be stripped down to words and concepts that are linked to those words, then such a practice would be somewhat like a music instrument played by thought.

When reasoning about the utopian conceptions of what is described by the process of turning thought into music, a difference can be noted. It is located in the tension between ideas of thought as discrete units on a map, as would be with certain branches of neuroscience, and the experiential aspect of the flow of our thoughts presented by the examples of 'inner' speech. The differences and similarities here might prove to be artistically fruitful to inspect further.

Conclusion

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"Outside Penthesilea does an outside exist? Or no matter how far you go from the city, will you only pass from one limbo to another, never managing to leave it?" (Calvino, 158)

The trajectory of this project, as I imagined at first, has spread to directions which are no longer in my reach. Forming somewhere yet again an agglomeration, for new inhabitants to enter and ask – have I been here? If "[..] language enables us to be where we are not and prevents us from ever being anywhere but beside ourselves", then we are left wondering. Only by taking up the voice we can stretch "between here and elsewhere" (Connor 2004, 3). To enliven the spaces created by language and to voice in order to imagine, even if for a moment, spaces that do not belong to it.

In the process of this research, I have made many maps and strategies to navigate them. Posed questions and proposed definitions. The initial questions had to do with the topics discussed in the last segment – why do we include the sound of words while thinking? Is there a shape of a sound in the human brain? If so, is it possible to experience the sound of dreams or is it only limited to speech? Then arouse questions which were more concerning: if the neurological patterns can be translatable, could it be possible to read thoughts? If the former would become true, could there be any resisting agency? Since we learn to speak by mimicry, and since music is often the core of dissidence, the agency should come from here.

Parallel to these lines of thought developed segments "the most human of effects" in chapter 1 and the last segment which I decided to take out of the chapter structure known as "a post-human consideration".

When it came to definitions, the ambiguity of the voice opened a whole other range of questions. Here I started to consider subjectivity as a following thread in my interest, as well as the discursive mental processes that follow through a listening experience. The pathways to defining the voice firstly began with the physics of the voice, then the psychoanalysis of the voice and lastly the phenomenology of the voice. The questions I could exemplify here I let the reader find in the chapter 1. I must note that by the process of defining it, I soon came to the realisation that it will be only possible to draw a field of nodes. With this came "a silent voice" and "tape voices".

"Object study 1" and "object study 2" was developed in having this node of ideas in mind.

A thought trajectroy that seems to diverge from the voice, although reintroduces the voice again, develops in chapter 2 and in the segment "co-presence" in chapter 1. Here, listening attention as well as the unconscious processes in listening (that which is not heard) started to become more dominant in my own thoughts behind artistic projects, which a lot of them did not manage to make it on these pages.

Further questions that include previous considerations of listening attention and the discourse of *desire*, brought me back to voice and multimedia work that seemed to be more involved with

language. What can be done to take a part the process of making meaning? To explore if in these intersections there is a place where language 'lags'.

It is interesting to note also in relation to the early questions posed regarding the sound of words as being neurological traces, that some form of resistance could be found in destabilising language intentionally, in breaking the flow of thought. Is there any agency that renders language inoperative? Perhaps it is poetry (which is almost as ambiguous in its meaning as "voice"), where we need to search: "What is poetry if not an operation in language that deactivates and renders inoperative its communicative and informative functions in order to open them to a new possible use? [..] The point at which language, having deactivated its utilitarian functions, rests in itself and contemplates its potentiality to say" (Agamben 2017, 55).

There can be a large ramification on this, but I bring this up to compare how the imaginary and associative layers of sound as well as *overhearing,* are involved with the practice of making 'making sense' an incomplete line. This idea follows through "silent reading", *"phantom étude"*, *"well trained writers"*.

Some issues that I would like to bring up:

(1) The compositional usefulness of phenomenological ideas about the dimensions of the 'silent voice' seemed to be more instructive than the ideas developed in psychoanalytical theory. Unfortunately, I came across these works late in this research.

(2) In order to develop a more certain and coherent artistic output in the research process, instead of defining the conceptual problems, I should have turned to the speculative explorations of the subjects more.

(3) The non-linear form of the theses that I have chosen to present would use a map or at least a clear guidance of navigation, since the reading process can seem difficult.

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