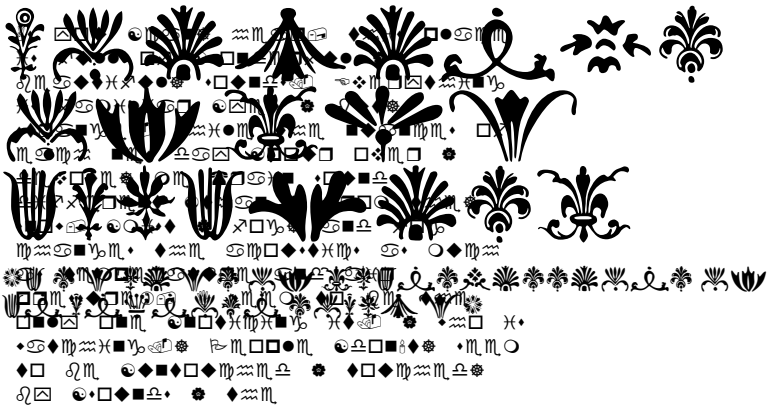
voicings of an auralist

a series of transmissions from an unknown source



As you [can] hear, this place is full of [wonderful | beautiful] sounds. Everything is familiar [yet | but] strange. While the nuances of each new day [pour over | envelop] me (rain sounds different [than | from the] snow, mist and fog change the acoustics as much as temperature and air pressure), I seem to be the only one [noticing it. | who is watching.] People [don't] seem to be [untouched | touched] by [sounds | the sound]. Instead, they are obsessed with "vision": Their optical sensing and recognition [apparatus is much | tools are far] more developed than their ears. What is strange is that they cannot actively [utter colours | say the colour] as [one would assume, | assumed,] given that vision seems to be their [primary | main] modality. [After all | However], we can [create sound | make] as much [noise] as we can listen [to it. | to.]

+ Found object:
Flat circular object of unknown use and origin

+ Localisation:
Latitude: 48°11'16.20" N,
Longitude: 16°19'1.80" E,
Mariahilferstrasse, 1150
Vienna, close to Technical Museum

+ Type of methodology:
Excavation

+ Context of discovery:
Unknown

+ Date of excavation:
20.06.2019

+ Specification of excavation: 18 cm below ground level, horizontal position, no associated context

+ Reporters: Bovermann, Grill, Leibetseder, Schilling (researchers of the Rotting Sounds project)

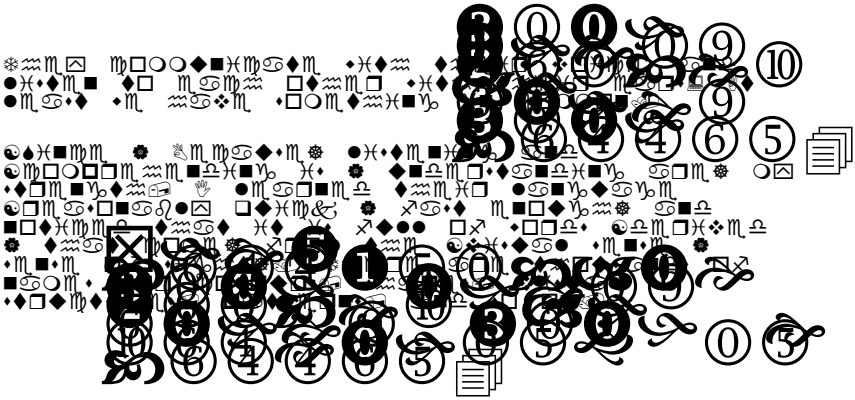
They communicate with their voices and listen to each other with their ears: At least we have something in common.

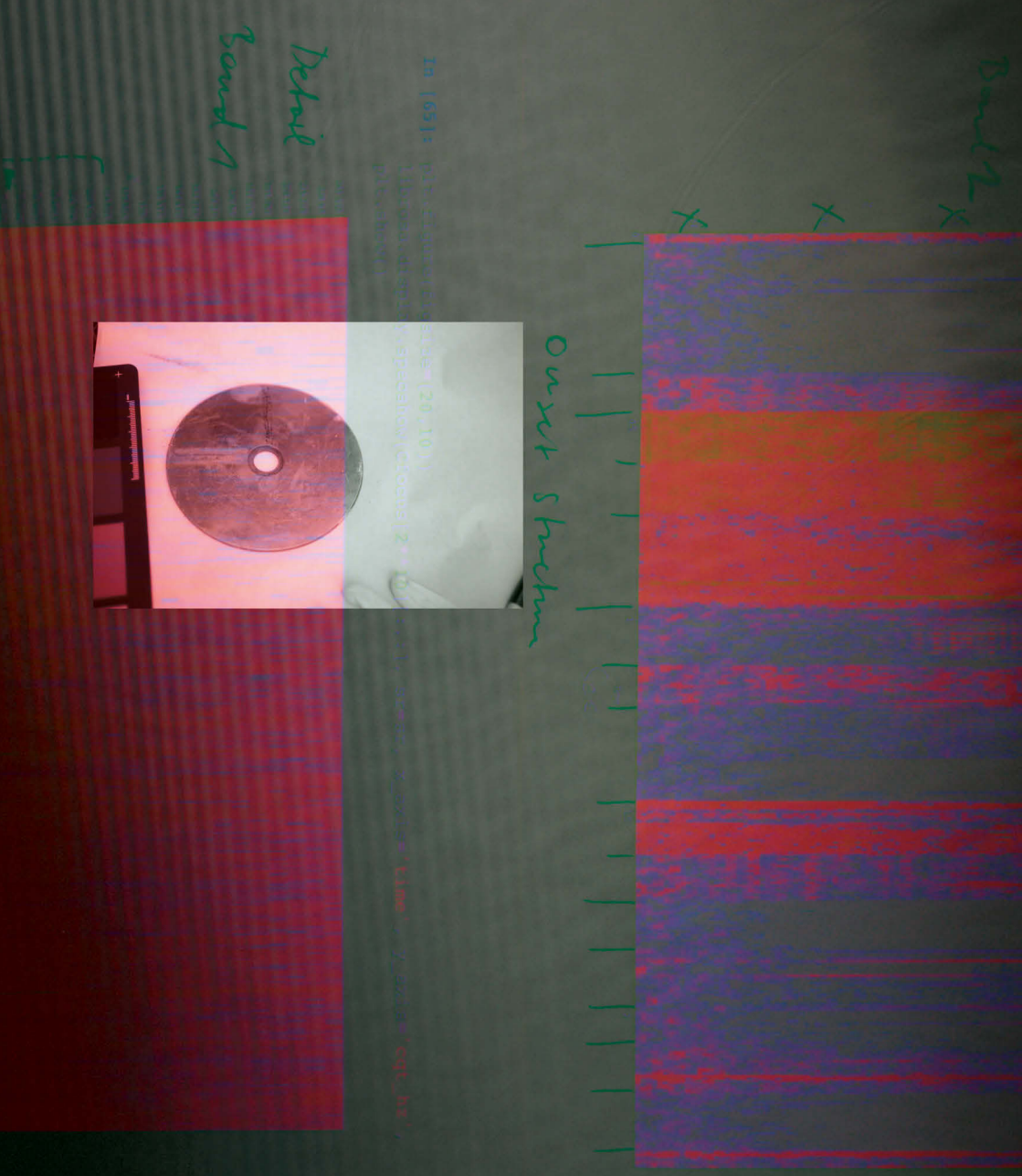
[Since | Because] listening and [comprehending | [Since | Because] listening and [comprehending | understanding] are my strengths, I learned their language [reasonably quick | fast enough] and noticed that it is full of words [derived | that come] from the [visual sense | sense of sight]. There are thousands of names for colours, shapes, visual structures, patterns, and so on.

Interestingly, they translate language into "writing": words, sentences, whole stories can be, and are indeed, turned into visual [shapes | form]; static, forever [engraved | etched] into a physical, visual form, [never-changing | ever changed] but constantly fading away. It is like a million [voices | sounds] from the past, [directly | immediately] whispering [at | to] you through your eyes. [Eerie | Spooky].

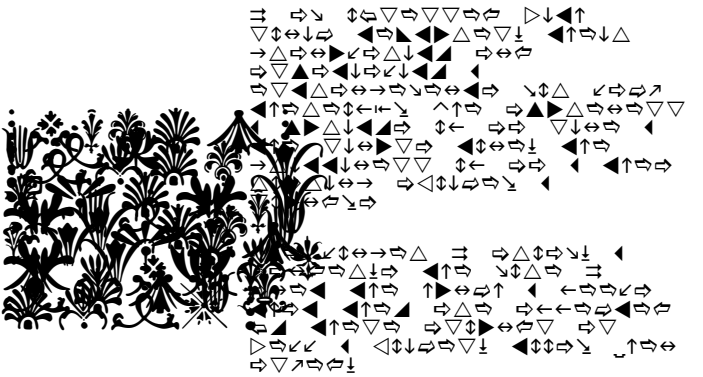
[However,] they believe in writing as if it [would | will] come or, [actually, be | in fact, become] one of their gods or elders [that sings to them | who they sing for].

While I judge [things | something] by ear, tell and retell stories, listen to my ever-changing environment, they believe in the [seemingly] static nature of their [voices] captured and transcribed visually as they believe in their writing and imagery.





+ Description of condition: The physical object is marked by wear and tear with minor scratches and some fading on the surface. The material basis appears stable and intact. The digital object can not be verified in authenticity, but the migrated fragmentary textural representation reveals semantically informative material.



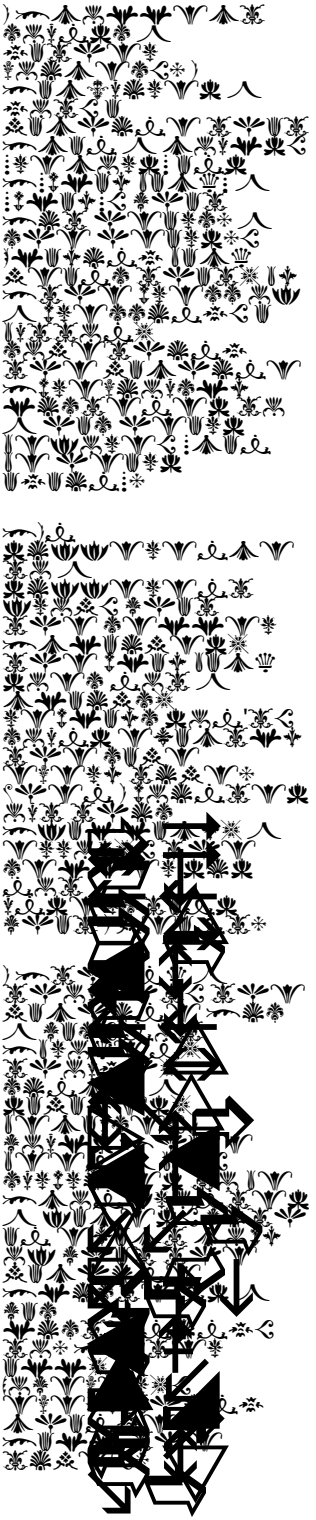
I am obsessed with sonic textures, their granularity and [spatiality | estrangement] (or lack thereof). The [pureness | purity] of [a sine | the sinusoid] tone, the grittiness of [a | the] roaring [voice. | sound.]

The longer I [roam, | wander,] the more I [get the hunch | feel] that they are affected by these [sounds as well | voices, too]. When asked, however, they often [deny | refuse] to be influenced by [sound | the vote].

[The other | One] day, someone explained "music" to me: [a] special [sounds | sound] or rather [chunks | a piece] of [sounds | noise] and [pitch sequences | a sequence] of [sounds from] a [rather particular | range of] loudness and [timbre | a rather special tone of voice.] They [differentiate | distinguish] between "language", "music" and "noise": while language is a vehicle for communication, "music" is [a] sound intended for [contemplation | reflection] and emotion. [Noise | Voice | Sound], finally, is [everything | anything] that [does not | doesn't] fit into [the] other categories.

[It | There] seems [that there is | to be] a fourth category [that is] described as "sound". Mostly, it is used for [sounds | intentionally] made [on purpose | voices] that are not [music | language].

I often [have difficulties | find it difficult] to [differentiate | distinguish] between these categories and [find | consider] them rather confusing.



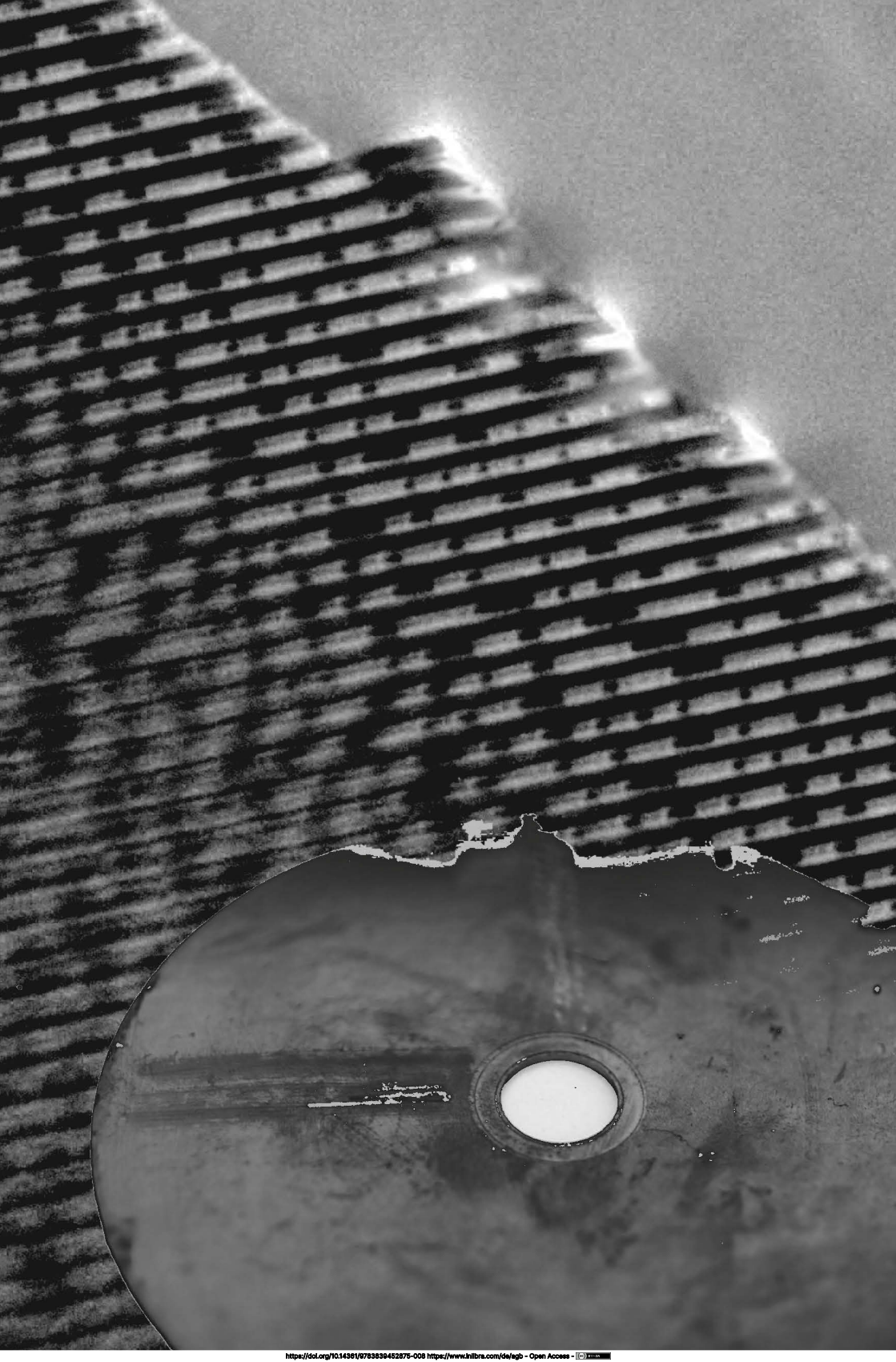
I [collect sounds | gather voices]. I [acquired | got] a machine that [can | could] "record" and ["play back" | "play"] what it hears. Playing back means that, by pressing a button, something the machine [previously listened to | has heard before] "can be heard again".

[In difference to | Different from] what the seller [claimed, the play back does not | claims, replays don't] sound exactly the same every time. When I pointed out this [fallacy, | error,] the seller did not understand what I meant.

I [think | thought] the machine [is | was] not [broken, though, since | damaged, because] I would [have been | be] surprised to be [confronted | faced] with an exact copy of what the machine [listened | was listening] to. [After all, | However,] everything changes [all the time].

[Sound is time-based | Voices based on time,] even [time-dependent. | depending on time.] There is no static [in] sound, only continuation.

[Sound | Voice] is [ephemeral | mortal], its decay is [inevitable | foreseeable] and [immediate | direct].



I [am digging | dug] deeper into the [range of available | various] recording [machines]. It turns out that [the] sound can be "stored" in various [forms | modes]. Similar to "writing", sound can be "recorded" [onto a medium. Only, transcribing] to the [medium | media. It's just that, copying to the media] and reading it [back | again] cannot be done without [a tool. | tools.] There are many different vehicles for [sound recording | recording sounds]: "Phonographs" [("sound writing" machines) | ("voice writing machines")] and magnetic storage media (called "Tape", or "Musicassette") are analogue systems, contrasting to discrete, number-based ones storing their information optically (called "CD"), magnetic ("DAT", "HDD"), or semi-conductive physical ("SSD").

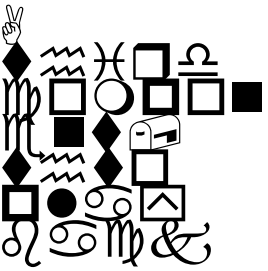
People seem [to be] eager to introduce [abstractions | abstraction] into [these | this] storage [systems | system]. Magnetic storage, for [instance, | example,] can be written and read [out] with electrical devices and [turned | converted] into electrical signals. [This | It] has [the advantage | advantages] that [it] can be manipulated, "copied" and [amplified | strengthened].

The [signals | voices] can be manipulated, "copied" and [amplified | strengthened]. During these [operations | manipulations], no [sounds | voices] are [heard | perceived], or, at least, no [signals | voices | sounds] that I can [associate | link] with the one's [stored | captured] on the machines. It seems like the sound is [held | captured] in a different [plane | dimension], inaccessible [to me], unless [I use] a dedicated playback device [is used].

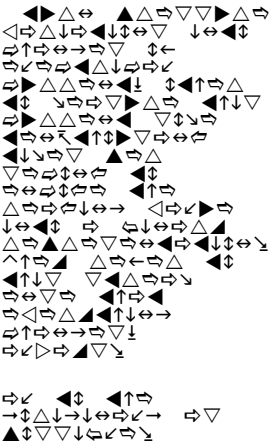
People [found | find] a way to [even] further ["manipulate"] this ["manipulability"] by discretising waves into [tiny, static sections, | static, small parts,] each [indicating | of which shows] one of a very [finite | limited] number of [values | numbers]. When varying the [strength | power] of an [eclectic | electrical] signal [fast enough | quite quickly] according to these values, [an | the] impression of [a] dynamically changing [wave unfolds, which | waves that] can be made [audible | is heard] by [a "loudspeaker" | "singers"], (basically an electric coil [that is] attached to a [piece | sheet] of cardboard).

This technology is [broadly | widely] used to store [away] sound. [A play | This technology is [broadly | widely] used to store [away] sound. [A playback of | Playing] these [chunks, | pieces | "files"] is a surprisingly [realistic] reproduction of what was previously captured. I [wonder if | want to know whether] this technology also [allows | makes it possible] to [create | make] sounds that were not [recorded before | previously recorded].

The dissection and examination of a recording device turned out to be valuable: I found several identifiable components, some (called "microphone") to turn pressure variations into changes of electrical current, others to measure this current some ten-thousand times per second to encode the reading value into a binary representation. They refer to this stream of information as being of "digital" nature.



A third component, the "memory", is used to store away the digital sound stream, while a fourth component makes it possible to play back (make audible) what was previously stored.

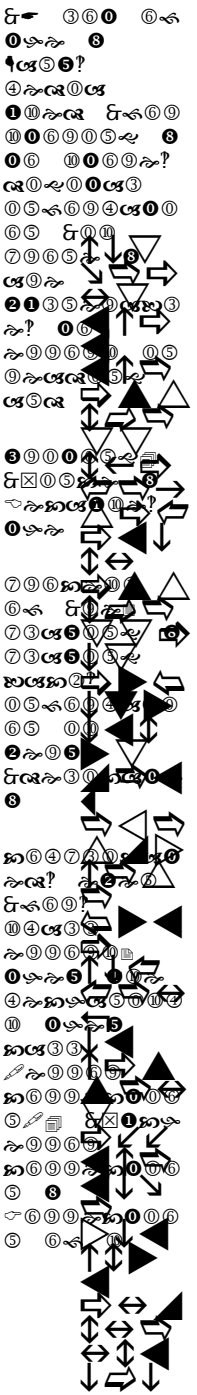


I was particularly surprised to see the meticulous attempts built into the machine to ensure an exact replay of what is stored on its memory, since for me it is common sense that everything changes, all the time.

Deterioration, dynamics, and change are fundamental to the nature of everything. Everything is sound, sound is ephemeral. It can only be re-imagined and re-interpreted.

It turns out that our common sense knowledge is not obvious to the designers of the machines (and to the people here in general). Instead, they try everything to keep the copy and its reproduction as clean and equal to the "original" as possible.

+ Cultural-historical description: The data object in its physical and digital existence can neither be classified as a known cultural artifact nor can it be assigned to a historical context.

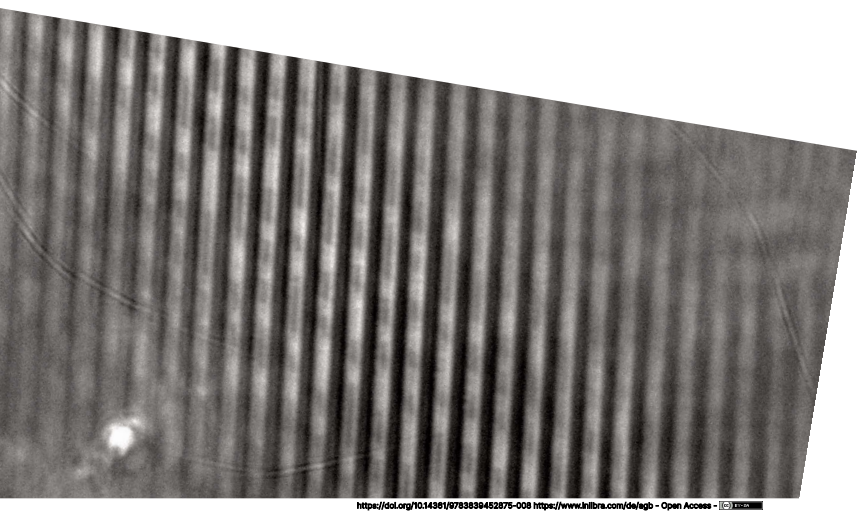


[A lot of the | Many] media used [for storing | to store] digital information [is prone | are vulnerable] to errors in reading and writing. [Since | Because] the process of [re-playing | playing back] information is very [delicate | complicated] even [for] small errors, they use mechanisms they call "error correction". [Such error correction | Correction of such errors] is [built right | built directly] into the reading [mechanisms, | mechanism,] sometimes even [into | in] the data storage itself: information is not written in [its natural | the] order of [its original] appearance but [is] scrambled in a [specific | certain] way: [in case chunks of | if] the [pieces of] data [are not readable | cannot be read] anymore, not [a concatenated chunk | the combined pieces] of information [will be] missing but [rather] small [pieces | parts] that might even be reconstructed based on the information around them. I wonder [how such mangled | what kind of messy] information [sounds | is].

They claim that "error correction" allows for "clean", reproducible audio. But [it | that] comes [with | at] a price: Although [the] recorded sound can be [fully | completely] reconstructed from [a medium | the media] with moderate data failure, but the [degradation | alteration | change] that [happens on | occurs in] the [medium | media] itself will [eventually | ultimately] take over more data than what is needed to [do the reconstruction | reconstruct it]. When this happens, [the error] correction [of errors] fails. The sound stored on [the medium | media] is completely lost, from [nearly | almost] one moment to [the other | another].

This means that the [process of] degradation [process] is [ubiquitous yet | everywhere but] hidden: it happens all the time without anyone noticing [only] until it is too late.

+ Methods of examination: The optical technological reference leads us to the attempt to read the disc with a conventional professional optical disc drive (ASUS BW-16D1HT SATA).
We succeeded to extract the binary data stream while also verifying its integrity. The readout yielded a digital audio file (PCM encoding, 16 bit, two channels interleaved) of undefined sampling rate.
An investigative audio analysis with software tools from Music Information Research (MIR) revealed a distinct repetitive spectral structure that could be transcribed to text symbols. Since we lack knowledge about the specific cultural context of the text we could generate only an incomplete interpretation with marked ambiguities.



"Digital" is a strange [beast | dragon]. People use it as a term for everything and [nothing | not] at [the same time | once]: Digital is information stored in binary format, digital is [everything | anything] that has to do with modern [living | life]. Digital is [the | a new] way of life, digital is a synonym for [activities of communication via a] network [communication activities] called "internet".

[The notion possibly has its origin in | This idea might come from] the development of "computers": machines that calculate [states | status]; blazingly fast [yet | but] still static, [discrete | separate].

Listening [closely | carefully], digital turns out to be [threefold | triple].

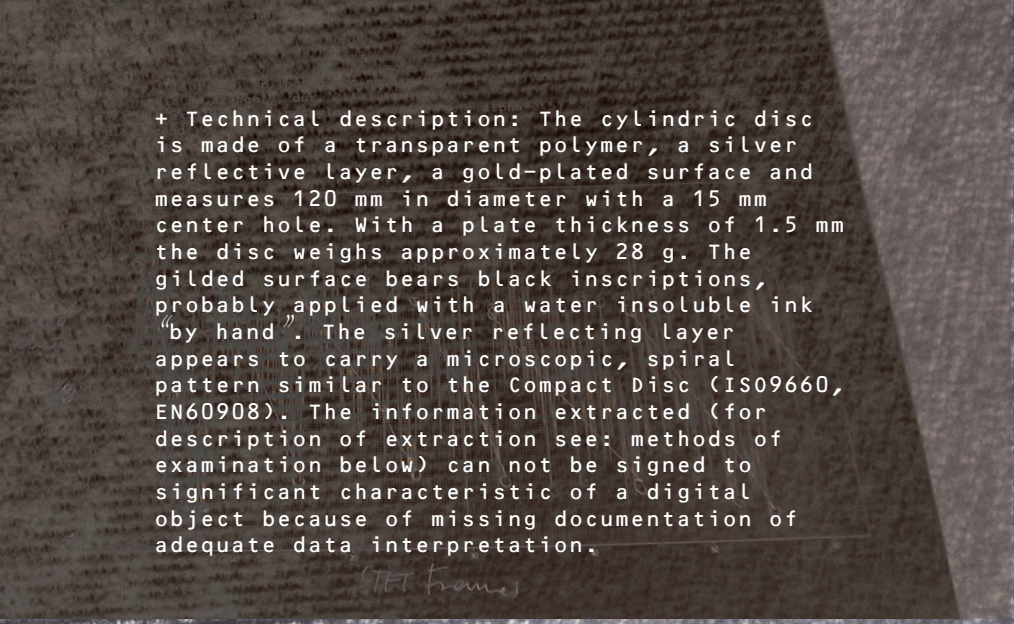
There is "data", a [description that is] symbolically [encoded description | encoded]. In [the case | terms] of sound, it may consist of a series of numbers representing the [deflection of a] speaker cone [deflection] at a given time, but [it] may [as well | also] be a set of rules [on | about] how sonic qualities [could | can] be [derived | obtained] from environmental factors.

There is "hardware", [the] physical [boards populated | board is filled] with semiconductive components, connected with [wires | cables], both printed and [free-running | running freely]; [spinning | rotating] magnetic discs, sometimes magnetic [tapes | bands], microphones and loudspeakers. They form [a] complex [system on which | systems where] data is stored and processed.

There is [the interpretation level | a level of interpretation]. Data storage is [so general, so | very common, very] abstract (almost always in binary code) [so] that an interpretation [guideline | recipe | codec | algorithm] is needed to determine how it is [turned | converted] back into sound.

The [borders | boundaries] of these classes are [fuzzy: interpretation | unclear: interpretations] can be [hard-coded | coded] into [wires | cables], or, as [it is the case] with error correction, data [may | can] contain information [on | about] how it [should | would] be read. One factor informs the other, one cannot be [examined independently | checked regardless] of the other.

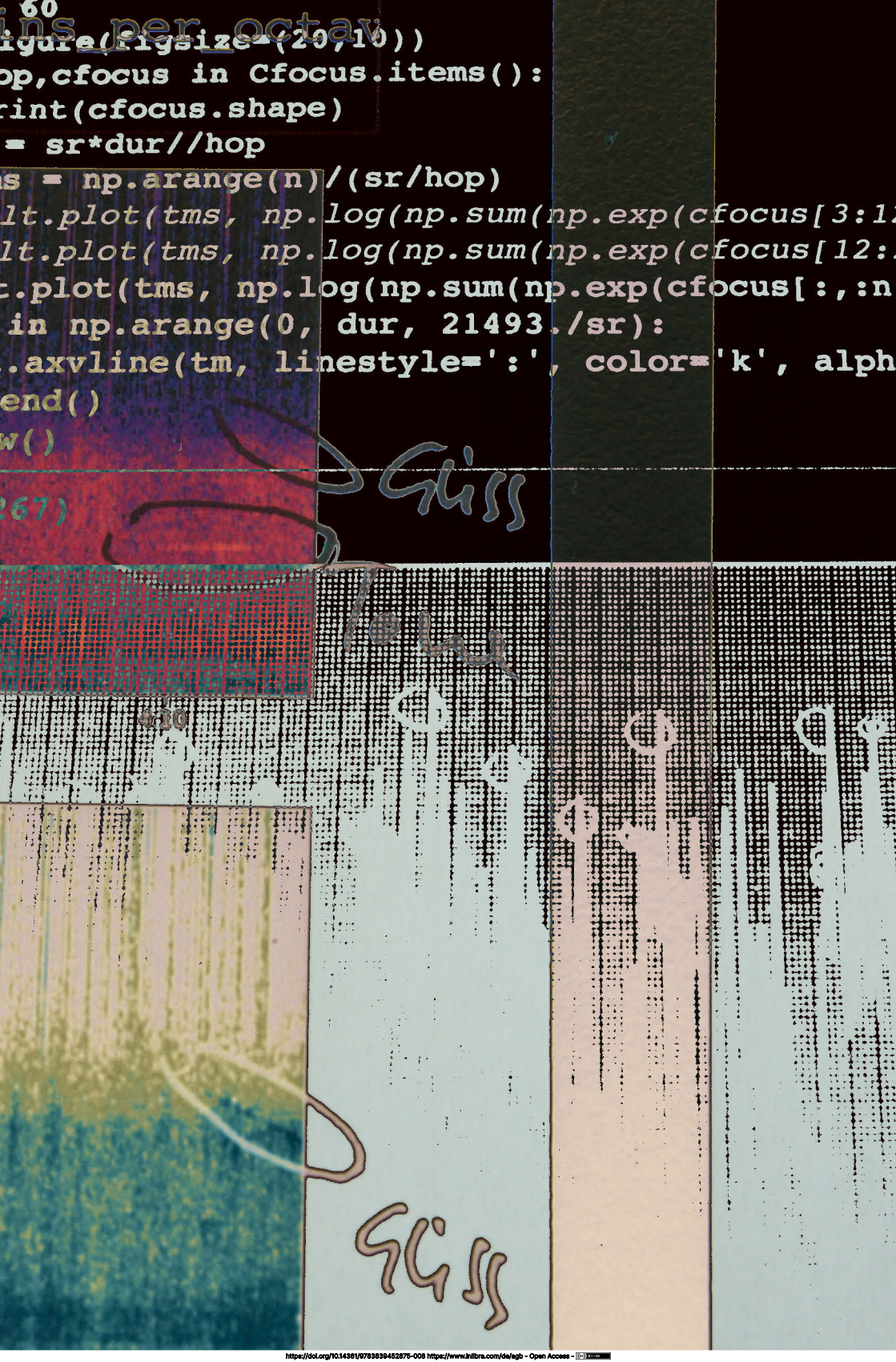
+ Technical description: The cylindric disc is made of a transparent polymer, a silver reflective layer, a gold-plated surface and measures 120 mm in diameter with a 15 mm center hole. With a plate thickness of 1.5 mm the disc weighs approximately 28 g. The gilded surface bears black inscriptions, probably applied with a water insoluble ink "by hand". The silver reflecting layer appears to carry a microscopic, spiral pattern similar to the Compact Disc (IS09660, EN60908). The information extracted (for description of extraction see: methods of examination below) can not be signed to significant characteristic of a digital object because of missing documentation of adequate data interpretation.

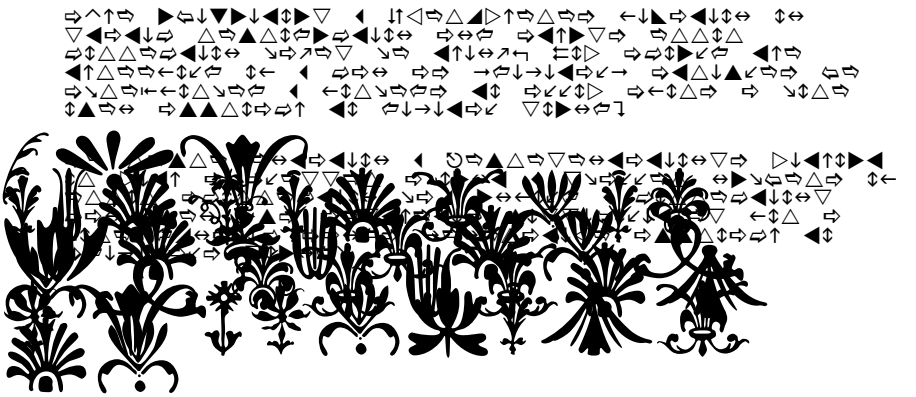


To answer my [question interfering with the | digital audio] reproduction [part | section], namely the generation of [digital audio | sound generation | sound], is not only possible but an integral part of "music production":

[Voice | The music] of "production" (its "generation") is [separated] from [music] "consumption" (its "perception") not only [by | on] the time that passes between production and consumption. [Moreover | In addition], there are [selected people | professionals] [that | who] are explicitly appointed [to | for] music production. They use [specific] tools that are [far more] open in their ability to produce dynamically changing structures than the usual playback [devices | machines]. For them, variations of what was previously heard are not only possible but highly [encouraged | recommended]. Similar to [analogue | musical] instruments [extending | that extend] the [physicality of the | physical] body [by resonant | with resonance] [structures] and vibrating elements, there are digital [tools where the | devices in which] sound production operates [equally to | the same for] sound reconstruction [in | on a] recording [machines | machine]. In [difference to those | contrast], the [directives | direction] for the signal to be played [back] by [the | a] digital [instruments are | instrument is] not determined by [the] previously recorded [streams of sound | sound flow]. [Rather | Instead] they are influenced by dynamic systems [of | with] varying degrees of flexibility: while some are [pretty fixed to | quite fixated on] a limited vocabulary of sonic [chunks | pieces] that can be played back at different times, others dig [deep | deeper] into the complex [interplay | interactions] of digital [dynamic] systems. With [those | that] it is possible to [create | make] sounds [unheard | that have never been heard] before and to [intertwine | interweave] them into a [complex sonic] [weaving such | weaves so] that [both] their [source | sources] and [their] performance become unidentifiable and their [interplay | interactions] cannot be [untangled | described].

Most of the times, however, these [musical] instruments are used to [create fixed | make] recordings of ["music" | "voicings"] rather than being recognised as [a | the] music [medium themselves | media itself].





The ubiquitous fixation on static reproduction and thus error correction makes me think: How could the threefold of | can a "digital" triple be formed | reformed to allow for a more open approach to digital sound?

A representation | Representations with or without a lesser amount | smaller number of error correction may unfold | corrections can open up aesthetic possibilities for a more dynamic and generative approach to digital sound.

Naturally, decay is present in all parts of the trinity and all of its appearance has a characteristic effect on the sonic gestalt of the emerging sounds.

The uncovered | Open digital rot would | will be made explicit, decay types would emerge | will appear.

I shall investigate.

Voicings of an auralist

Received in the context of the project of artistic research "Rotting sounds – Embracing the temporal deterioration of digital audio", a cooperation between the University of Music and Performing Arts Vienna, the University of Applied Arts Vienna and the Academy of Fine Arts Vienna.

Funded by the Austrian Science Fund (FWF) as project AR 445-G24.

Till Bovermann: reception
Almut Schilling: retrieval
Thomas Grill: analysis
Tobias Leibetseder: assemblage

http://rottingsounds.org

Audio available at https://archive.org/details/auralist