# There is a closed door at the end of the corridor

Mauricio van der Maesen de Sombreff

2025

# Contents

# preface

The title for this thesis comes from an early memory. Without an abundance of organized memories, I still maintain a clear mental image of this corridor. It belongs to a first period of separation from reality, a generator of narratives intended to build sense. Building backwards the parameters for a Markov chain[1] to generate the time sequence that predicts and explains the present.

The title sets up a journey of exploration, with a hidden aspect, and the intention of uncovering it. The story ( if there is any ) revolves around what is behind the door, why it is closed, and what it means as a memory.

The corridor leading to the closed door is a path of self-discovery and confrontation of personal fears. It implies a setting that is limiting and confined, adding to an atmosphere of tension lived in Uruguay until the restoration of democracy in 1985. The closed door is the focal point of such tension. It represents a barrier between protection and isolation, between reality and imagination, history and fiction.

In this context, I explore the themes of curiosity, the fear of the unknown, and a tendency to be constantly drawn toward the off-limits. What is the dark if not a manifestation of

[1] A Markov chain is a mathematical system that moves between different states based only on the current state, not on how it got there. It relies on evaluating the probabilities (or weight) asociated with the transition between any two possible states.

the unknown? It's a driving force for widening the senses and understanding the environment.

This thesis is the reflection of my current ongoing introspection, an exploration of the negative space of the memory, and an attempt to confront possible pasts in possible realities. As explored by Roland Barthes in his essay "The death of the author"[Barthes, 1967], meaning in this thesis arises from intertextual relationships between chapters and ideas.

This book is written in LaTeX (tug.org) and managed as code. The scripts and fragments that compile into this text are available through the following link:

https://github.com/n2048-creative-technology/thesis.

# introduction

```
w = 'w = {}{}{}; print(w.format(chr(39), w, chr(39)))';
print(w.format(chr(39), w, chr(39)))
```

There is stubbornness in the craft of casting materials through mold making, despite how rewarding it can be. Its whole process makes it hard to allow for later changes. The mold is not the memory of a piece, nor its essence, but it will define its final shape. Is the environment in which we grow and develop ourselves such a kind of mold?

I remember only fragments about my own past, but I've spent the last few years making stronger efforts to understand the ways in which I perceive my own "umwelt", why I react, and what I react to. What shaped this current way of thinking? Without an objective memory of my own history, creating versions of this multidimensional mold in which I've cast my way of perceiving has become an iterative process of re-creation.

```
% recursive alterations allow for a progressive reshaping of perception.
```

The small snippet of code under the title of this chapter is called a Quine. It is a program that produces its own source code as output, exemplifying a form of computational self-reference.

```
% The quine and implies a connection between software, computer models and a human tendency for self-replicating based on our current understanding of reality.
```

Gödel's incompleteness theorem proves that any formal system capable of expressing arithmetic contains statements that refer to themselves cannot be proven true or false within the system.

It shows that a self-referential system cannot demonstrate its own consistency. This means that any attempt at complete self-referential closure inevitably leads to undecidability or incompleteness, as there are always truths outside the system's ability to demonstrate them.

Yuk Hui's *Recursivity and Contingency* [Hui, 2019] explores the relationship between technical systems, philosophy, and computational logic. He describes recursivity as a form of self-referentiality in technical, biological, and philosophical systems. However, Hui introduces contingency as the space for unexpected possibilities and alternative configurations beyond purely deterministic, recursive closure. His idea of contingency refers to the openness, indeterminacy, and possibility of alternatives beyond deterministic or purely recursive systems. Contingency interrupts recursion, allowing for emergence and transformation.

Gödels theorem resonates with Hui's argument in that recursion alone does not guarantee self-sufficiency. Systems require contingency to evolve beyond a rigid self-reference. Gödel's results problematize deterministic, computationalist views of reality, aligning with Hui's critique of purely recursive structures in cybernetics.

Hui's philosophical contingency implies that no system can fully determine its own future. There is always the possibility of disruption, reinterpretation, and reconfiguration. Openness, creativity, and evolution require the ability to break out of purely recursive structures.

Perhaps the notion of a quine, or of a self-referential system, relates to the idea of creating our own model of the world, and the difficulty of interpreting the reality as something different than the one that is predefined in our brains.

```
text = """
 This thesis attempts to express a way to relate to the world
 from my own neurodivergent perspective. One that is explained
 and presented from a neuro-normative point of view, and yet,
 it can't prove itself. Hopefully it will allow the reader to
 connect the different topics here contained in an unstructured
 way, following non-linear timelines, as I do.
"""

s = 'text = """{}"""\n\ns = {!r}\nprint(s.format(text, s))'
print(s.format(text, s))
```

# memory

The military dictatorship in Uruguay that started in 1973 finally came to its end in 1985. By that time, I was 5 and carefully kept away from all the struggles and terrors that happened during that period. Even though I have no personal memories of the dictatorship itself, the societal impacts of the regime had a significant influence. I don't know why I remember that corridor, or why that door was closed every evening. What's certain is that it divided the apartment in two separate realities. On mine, there's no sound. I can't avoid creating evolving narratives that reflect the fluidity of memory itself.

Many families of the children born around the 1980s were deeply affected by state repression. Parents who were political dissidents, union activists, or simply suspected of opposing the regime often faced imprisonment, torture, or exile. If not the near family, friends of any close connection to this situations would affect the dynamics of tension and increased anxiety. Political discusions where often avoided for protection, creating an atmosphere of silence and fear. Children of that era absorbed the lingering trauma of parents who had suffered under the dictatorship. This trauma could manifest in overprotectiveness, anxiety, or suppressed anger in family dynamics.

The concept of "speculative remembering", where memories blur and predictions merge with present experiences plays a

role in creating an "all-knowing" archive that adapts over time [Sonal Dutt, 2024]. In their 2024 article "The speculative memory: contextualising memory in speculative fiction" the authors emphasize how memory underpins personal identity by shaping narratives of self, as well as the ways in which traumatic memories disrupt perceptions of reality and identity.

Jean-Luc Godard's film "Here and Elsewhere" (Ici et Ailleurs, 1976) touches the themes of representation and history and reflects on the political memory of images and the ways in which a non-linear and fragmented memory can be reassembled in different ways based on the context. The film questions the ethics of remembering through images, questioning the reduced representation of a true past.

This thesis is too an invitation to become more critical about our own processes of remembering, and how memory is shaped by media and context. It's important to note how personal and collective histories are remembered, forgotten and rewritten over time.

Memory behaves sometimes as an interactive installation, capable of recalling previous viewer interactions, layering them as part of the piece, altering and separating it from its original self.

In Camera Lucida, Roland Barthes distinguishes between the studium (the cultural, intellectual response to an image) and the punctum (its personal, emotional impact). He reflects on the role of the viewer in the construction of meaning [Barthes, 1993]. The memory of a closed door, the need for bridging the unknown with rational narratives, the context of my own neurodivergent experience. (Constructing meaning)

# curiosity

*commitment to struggle*

As most people, I place some of my earliest memories in my childhood. It was a time where differences were particularly notorious, misunderstood, and punished. The dictatorship heavily controlled education to align with its ideology, promoting nationalism and suppressing critical thinking. As most children born in this period, I received an education shaped by censorship and limited intellectual freedom. Teachers and curricula avoided topics related to human rights, democracy, or the abuse of the regime.

I grew up in a society where trust in the government and institutions was deeply eroded. This mistrust certainly influenced my attitude toward authority and civic participation. In a context where discipline and normativity appeared as main values, I learned to defend my position on the right side of this equations:

curiosity = disobedience

curiosity = insubordination

curiosity = commitment to struggle

% Deconstructing the status quo against an institutionalized system of meaning making.

"All men by nature desire to know". This is the opening line of Aristotle's Metaphysics, highlighting curiosity as a fundamental aspect of human nature. However, I experienced that curiosity, as a *distracted learning style*, is often rejected

as a vicious form, as opposed to a virtuous one. In his book *"Curiosity Studies: A New Ecology of Knowledge"*, Perry Arjun Shankar comments on Aristotle's inclination to recommend being studious about one thing (monopragmosyne), as well as on Plato's argument on how curious people suffer from an imbalance in the three parts of their soul: reason, spirit and appetite. [Arjun Shankar, 2020]

It became well established that being curious implies taking risks, failing, making mistakes, "die at least a few times" [Foucault, 1980]. Foucault reflects on the transformative power of curiosity, suggesting that it involves letting go of established ways of thinking and being open to change, which he metaphorically describes as a form of \dying."

Curiosity, in this frame, presents an invitation to explore boundaries and question all norms. The digital and other forms of artwork inspired by this can evolve in forms that resist being fully understood, requiring viewers to engage multiple times or from different perspectives to gain insight, embodying a commitment to struggle.

The exploration of unconventional media as a way to disrupt the status quo is a recurring theme in media theory. Several theories and philosophical perspectives address this phenomenon. McLuhan's "Understanding Media" [McLuhan, 1964], is a good

example of this (The medium is the message). Artists using unconventional media are not just creating content, but they are defining new ways to experience and understand such content.

Deleuze and Guatari refer to the idea of deterritorialization, as the process of breaking away from established structures. Their concept of *"rhizome"* emphasizes non-linear, decentralized forms of thought and creation [Gilles Deleuze, 1980].

Curiosity drives us to break away from familiar territories, whether intellectual, cultural, or artistic. It encourages us to explore *"lines of flight"*[2], creating opportunities for new knowledge and experiences. Non-linear, interconnected ways of thinking and being, as opposed to hierarchical structures, allow for an open-ended exploration, where the process is as valuable as the destination.

A line of flight is not simply an exit but a process of reconfiguration. It resists fixed hierarchies, operating within a rhizomatic structure where connections appear in unexpected ways. Whether in thought, art, or social structures, lines of flight create alternative spaces of existence, rupturing established frameworks and making way for the unanticipated.

In the classical notion of perspective, space converges toward an illusion of depth and stability. in Deleuze and Guattari's

[2]Deleuze and Guattari's concept of the "line of flight" (ligne de fuite) is central to their philosophy of becoming. It represents a vector of escape, transformation, and deterritorialization.

conceptual universe, a line of flight suggests an alternative representation of space, one that is fluid and multidimensional.

# neurodivergent

*The holographic principle suggests that information about a volume of space can be encoded on its boundary, leading to a perspective in which spacetime within that volume, including time, is a projection. Thus, time might not exist as a fundamental property but instead as a result of interactions in this deeper, more fundamental layer of reality.*

The idea of perception as a controlled hallucination suggests that what we see, know, and understand is no more than the most likely prediction made by our trained brains. A neural network in which an internal conflict arises between an error signal, indicating that what's in front of us does not match our expectations, and a massively skewed training dataset of memories, insisting that what we know from past experiences is the correct interpretation.

Neurodivergence is now better known and understood, but as a statistical minority, it is not well represented in the dataset of human interactions. It is only logical that it would be difficult to comprehend from the perspective of a neurotypical brain. The issue of skewed datasets is commonly addressed in the context of AI and machine learning. However, while we can design datasets to balance the represented populations, a real brain learns from real interactions, and the statistics remain the same regardless of awareness.

*"Anything in the territory that resists attempts at modeling thus becomes, in the world of digital models, noise in the system"* [Benasayag, 2019]. Benasayag addresses the issue of algorithmic bias, where neural networks may perpetuate existing social prejudices and inequalities. He underscores the need for

critical examination of the data and methodologies used in AI to prevent reinforcing discriminatory practices.

Benasayag's insight raises concerns about the way AI and algorithmic models structure knowledge, representation, and power. This encourages a critical interrogation of locality, which, in digital and algorithmic contexts, is often flattened, abstracted, or omitted in favor of more "universal" models. Problematizing locality involves examining how algorithmic systems fail to account for the specificity of place, culture, history, and identity, reinforcing biases embedded in generalized datasets.

The holographic principle challenges the classical idea of locality, suggesting that information can have non-local representations. As a neurodivergent individual, cause-and-effect thinking strategies don't come naturally, favoring lateral connections and holistic insights that reflect non-locality in thought processes. Often a heightened awareness of details, turns into an intuitive grasp of the whole system encoded in parts, as kind of cognitive holography. Most attempts to uncompress this intuition often come across as confusing misunderstandings, since even language is made to reflect linear interpretations of reality through sequential narratives.

```
% Exist within the noise
```

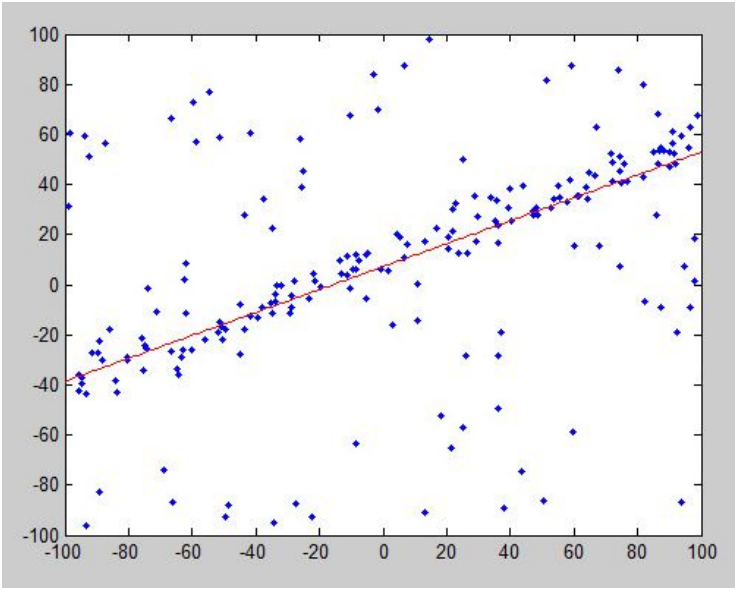


Figure 1: Data points shown in blue, with the line of form y = mx+c estimated using RANSAC indicated in red. - *https://www.mathworks.com*.

RANSAC (RANdom SAmple Consensus) is an iterative algorithm used for estimating the parameters of a mathematical model from a dataset that contains both inliers (data points that fit the model) and outliers (data points that do not fit the model). See Figure 1. It is particularly robust and capable of rejecting outliers and is widely used in applications in the presence of noise. We must define new non-probabilistic approaches to social norms and rules that includes outliers, or avoid the models and rules altogether, validating the richness of the full spectrum, avoiding the expectations of coherence to the known set.

Algorithms for pattern recognition, collapse heterogeneous realities into standardized, data-driven abstractions. However, certain local specificities do not easily conform to the logic of machine learning. These "outliers" or "anomalies" are often treated as statistical noise, rather than meaningful divergences that could challenge the system's assumptions. Problematizing locality, then, requires acknowledging that what is excluded from modeling is not neutral but politically significant.

AI models often depend on data extracted from local contexts but are deployed in a non-localized, decontextualized manner. This reinforces structural inequalities, where data from marginalized communities is used to optimize systems that do not serve them, or actively oppress them (e.g., urban surveillance and predictive policing).

```
% Analytical acceptance, algorithmic forgiveness.
```

I went through many struggles conforming to neurotypycal norms. As a child, I used to write mirrored text and had difficulty reading, so I was quickly diagnosed with Dyslexia. I suffered from insomnia for a big portion of my adolecence and I was prescribed with medication for Anxiety disorders due to unbearable panick attack seasons in a later stage. I was diagnosed quite late in life with ADHD (Attention Deficit Hyperactivity Disorder), followed with a possible co-ocurrence

of ASD (Autism Spectrum Disorder), a mixed condition that affects a small percentage of the population[3]. I started making sense of the previous 40 years, the anxiety, the insomnia, the lack of personal memories, and the depression caused by simply not fitting-in. I came to realize that a deeper knowledge and understanding of this region of the spectrum became my way of making sense of my interactions with the world, allowing me to forgive myself and others, while also developing the necessary rational arguments to actively reject the structures responsible for perpetuating the generalized norms that shape our societies.

## time scales

For some neurodivergent individuals, time feels less sequential and more layered or interconnected, as if different dimensions of experience coexist and interact simultaneously. Much like a hologram contains a vast amount of information compressed into a simpler lower-dimensional form, neurodivergent cognition could compress complex timelines and experiences into non-linear formats, creating unique interpretations and associations across time. Neurodivergent cognition might operate by projecting internal mental states or processing vast amounts of sensory

[3] ADHD has a global prevalence of around 5-7% of children and 2-5% of adults. Around 20-50% of individuals with ADHD also meet criteria for ASD.

data into condensed forms like patterns, metaphors, or unique associations.

In the current context of a neurotypical majority, forging the options and leading to a society that values selection over creativity, the creation of our own tools seems to be an appropriate choice to true creativity. Such practices allow to dig into deeper understanding of the final outcomes, and explore the equally rich properties of every step of a process.

% failures with a serial number

I'm interested in multi-sensory installations, layered audio-visual compositions, or interactive works that allow viewers to experience various "time slices" of the piece, where events and emotions compress into a single moment. Experiences of layered and non-linear time are certainly an inspiration to an approach that defies linear storytelling or straightforward interaction.

% examples

In his Theater Series, Figure 2, Hiroshi Sugimoto [Sugimoto, 2025] created a series of long-exposure photographs of cinemas where an entire film is projected onto a single frame, collapsing a full-length movie into a single luminous image. Similarly, in Figure 3, a digital work of my own autorship, the equation for incremental mean calculation is implemented to run over video

Figure 2: Radio City Music Hall, New York 1978 - *Hiroshi Sugimoto, Theaters, https://yoshiigallery.com.*

sequences, presenting time not as linear but as an accumulation of all its moments at once.

The generative installation titled "33 Questions per Minute", by Rafael Lozano-Hemmer [Lozano-Hemmer, 2025], Figure 4, shows a rapidly changing sequence of randomly generated questions on LCD screens, exceeding the speed at which they can be read. This creates a layered simultaneity of potential meanings and missed moments in time.

Figure 3: $u_{n+1} = u_n + \frac{x_{n+1}-u_n}{n+1}$ - *Mauricio van der Maesen de Sombreff, video frames average.*

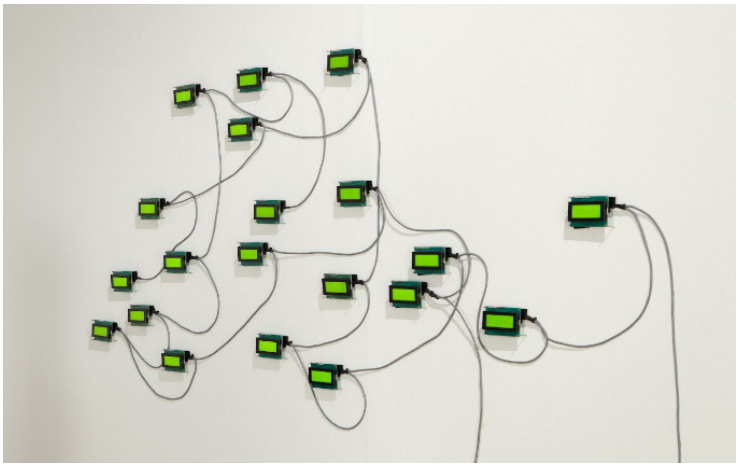

Figure 4: Display version - *Rafael Lozano-Hemmer, 33 questions per minute, https://www.lozano-hemmer.com.*

# perception

*Loud drones, low frequency soothing sounds*

*Whispers louder than the loudest screams*

*A new detail that changed my day*

*The repetitive, unsettling touch*

*Tight knots, tight hugs*

*Invasive gazes that were not supposed to last*

*The faces, the mirrors, the shadows*

*Acoustics as the language of every surface*

M.V.

Self-Organized Criticality describes how certain systems naturally evolve toward a critical, highly sensitive state where small changes can lead to large-scale effects. This state of criticality is "self-organized" because the system doesn't require external tuning to reach this point. It naturally arranges itself into this state through its own dynamics. These models help describe the experience of sensory amplification, where the world can be perceived in vivid detail or with overwhelming intensity. [Adami, 1993]

This idea resonates with my perception of sensory experiences, where seemingly minor stimuli can trigger profound shifts in awareness. My engagement with immersive media and neurophysiological responses to sensory inputs mirrors the principles of self-organized criticality, where perception can oscillate between stability and heightened sensitivity without external modulation. Just as a sandpile reaches a delicate equilibrium where a single grain can trigger a cascade, perception often reaches states where minor inputs lead to significant experiential shifts.

For many, perception unfolds in ways that might differ from conventional understandings. It is often nonlinear and multisensorial, difficult to articulate but deeply felt. The context and balances between anxiety and relaxation shape the

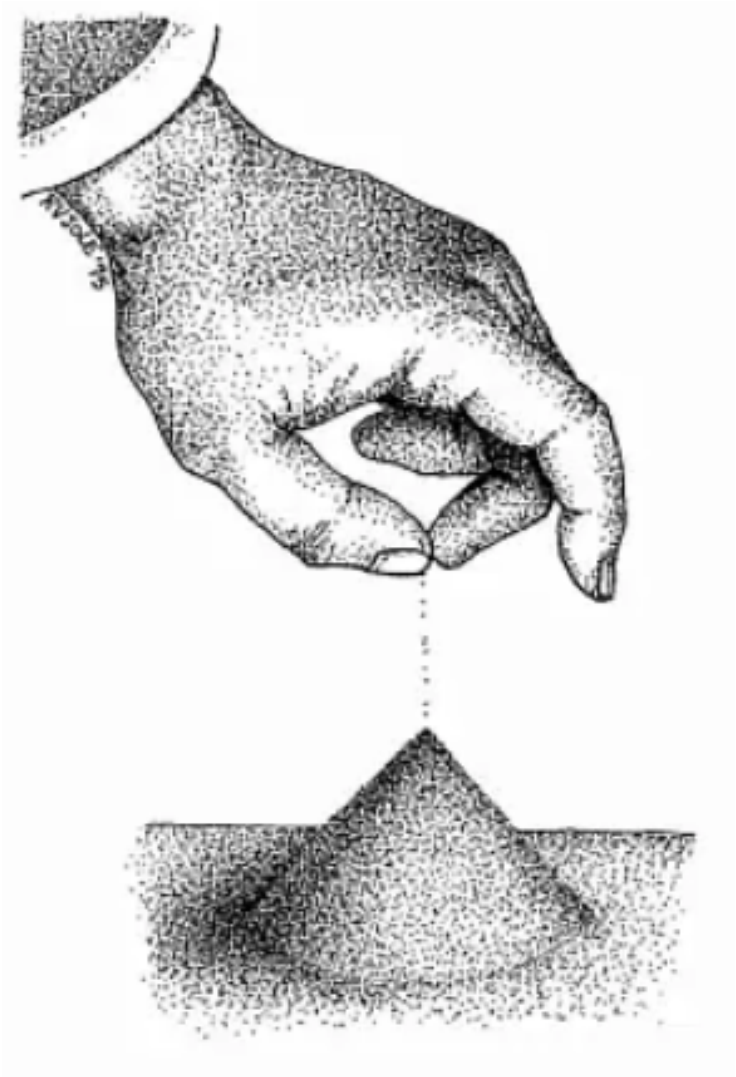

Figure 5: Self organized criticality - *Per Bak's Sand pile model, 1988.*

sensitivity to sounds and textures. Patterns and structures in an otherwise chaotic environment can be a comforting experience. Time feels non-linear, with moments stretching or compressing, influencing how art and events are experienced.

Immersive or interactive art forms, such as installation art, allow for the direct engagement of multiple senses, mirroring how individuals process the world, translating complex inner experiences into tangible forms. Sensory overload or hyperfocus can transform the relationship between body and world, defining new ways to conceptualize subjectivity.

From a physics standpoint, perception can be understood as a signal processing system, where sensory organs act as transducers, converting energy from one form to another. Interacting photons, wavelengths of a restricted spectrum, pressure variations converted into electrical signals, molecules binding and interacting with receptors, mechanical interactions of skin cells, electromagnetic repulsion, preventing matter from collapsing into itself.

Physics reveals that human perception captures only a small fraction of reality. Neutrinos, dark matter, infrared and ultraviolet light, gravitational waves, and radio signals are imperceptible to us, but part of this reality can be detected with specialized instruments. Can the use of such instruments

alter our perception? Is it possible to amplify and alter the ways we relate to the environment by increasing the reach of our perception?

Technology expands our Umwelt by allowing us to access phenomena that are otherwise absent from our perceptual sphere. From infrared imaging to quantum computers, from microscopes to large language models, technology acts as an extension of our perceptual apparatus, expanding our boundaries into previously inaccessible domains.

However, expanding the Umwelt through technological augmentation also transforms the sensorium, the historically contingent ways in which cultures structure perception. Friedrich Kittler and other media theorists have emphasized that new media do not merely extend human perception, but create entirely new perceptual regimes, where what is seen, heard, and felt is structured by technical systems. As Kittler observes in Optical Media (Berlin Lectures, 1999), "*Media determine our situation. If the optical nerve is replaced by fiber-optic cables, then perception itself is no longer an autonomous act but a function of transmission speeds.*"[Kittler, 1999]. This suggests that contemporary digital infrastructures, ranging from algorithmic filtering to surveillance systems and AI-driven

vision, do not merely mediate perception but actively reshape what is perceptible and how sensory data is processed.

The field of sensorium studies explores how haptic, auditory, and visual perception are mediated through evolving interfaces, from VR and haptics to biometric sensors. In this context, the question is not just about accessing new perceptual domains but about who controls the mediation of those domains. If perception is increasingly outsourced to technological systems, how does this alter the relationship between self, body, and world?

According to the philosophical approach of post-phenomenology, technology is not neutral. It transforms the nature of perception and experience. Instruments shape what and how we perceive, influencing the object of perception as well as the perceiver.

Our brain is remarkably adaptable and capable of incorporating non-biological sensors into its perceptual framework. This phenomenon is supported by research in neuroscience, cognitive science, and philosophy, particularly in the domains of neuroplasticity, sensory substitution, and embodied cognition. The inclusion of non-biological sensors introduces entirely new dimensions to human perception, effectively expanding the "self."

The extended mind hypothesis, proposed by the philosophers Andy Clark and David Chalmers, argues that tools and technologies

can become integral parts of our cognitive processes. Non-biological sensors present in wearable technologies provide continuous streams of data, which the brain learns to process and integrate. This suggests that perception is not confined to the brain and body but extends into the tools we use, fundamentally altering our experience.

While the extended mind hypothesis positions cognition as distributed beyond the brain, it has been critiqued for an overly functionalist approach that abstracts the role of media, institutions, and historical structures in shaping cognitive processes. N. Katherine Hayles, in "*Unthought: The Power of the Cognitive Nonconscious*, abandons the assumption that cognition is always rational, conscious, and computationally extendable. Hayles' concept of the unthought" (the aspects of cognition that exceed conscious awareness) offers a new lens for rethinking perception beyond intentionality. She moves the discussion from what we perceive to how our cognitive frameworks themselves are shaped by technology. In her book, Hayles engages with Bernard Stiegler's theories to discuss how technological mediation affects cognitive processes, particularly in the context of automated perception and algorithmic attention capture.

In this framework, perception is not just a personal or biological act but is conditioned by material and symbolic

systems that shape what can be thought or perceived. Digital and algorithmic systems increasingly mediate our experience, shifting cognitive agency away from the individual toward nonconscious, networked processes. The *unthought* implies that perceptual extension via technology is not merely an augmentation but also a restructuring that operates beyond intentional human control. Hayles critically questions not just what we perceive with technology but who or what determines the structures that govern perception itself.

If perception relies on external tools, the distinction between "human" and "machine" becomes less clear, leading to a hybridized (cyborg) perception that transcends biology. What counts as "real" if our tools mediate all new experiences? Can the brain adapt to perceive entirely artificial data streams, such as simulations or virtual realities, as seamlessly as it does natural environments?

Neural implants such as the Cochlear implant, or existing research in sensory substitution, demonstrate that artificial stimuli can be integrated into perception seamlessly, despite being electrically generated rather than naturally occurring. Experiments in VR adaptation (e.g., the rubber hand illusion, full-body swaps) indicate that the brain can incorporate entirely artificial spatial and sensory information into its embodied

schema. AI, predictive algorithms, and immersive XR environments are already generating stimuli that are neurologically indistinguishable from non-mediated experience. Perception is no longer confined to biological limits but is an open system shaped by neural plasticity and technological augmentation. The notion of "reality" becomes an emergent cybernetic construct, not fixed, but fluid, shifting as cognitive architectures evolve. In this sense, the "real" is whatever perception successfully integrates, whether natural or synthetic. It becomes a category of phenomenological stability rather than an intrinsic property of the world.

"*By reenvisioning cognition and crafting a framework in which nonconscious cognition plays a prominent role, my approach enables analyses of cognitive assemblages, and the mediators operating within them, as the means by which power is created, extended, modified, and exercised in technologically developed societies.*"[Hayles, 2017]

If technological mediation fundamentally shapes perception, then perception itself becomes a site of power, where control over sensory experience is increasingly delegated to infrastructures beyond individual agency. Stiegler warns that in an era of automated perception and algorithmic attention capture, the process of individuation (the capacity to form unique sensory

and cognitive patterns) is under threat. Similarly, Hayles' work on the nonconscious cognitive domain suggests that much of what we assume to be autonomous perception is pre-structured by the digital environments we inhabit.

This calls for a critical approach to perception that does not merely celebrate augmentation but interrogates who or what is shaping perceptual thresholds. Can artistic interventions, speculative design, and critical media practices expose the hidden architectures of technological perception? And if so, how can we reclaim perceptual agency in an era of increasing sensory automation and resist the passive absorption of algorithmically curated experiences? If algorithmic perception operates by optimizing and automating attention, then one form of resistance is to introduce perceptual friction, forcing slow, deep engagement rather than passive consumption. Building alternative, decentralized, open-source tools for AI-assisted art, collective sensory experiences, and participatory XR environments might offer new spaces for perceptual experimentation outside corporate frameworks.

At the same time, the question of how we manage and regulate sensory input becomes increasingly urgent. As perception expands beyond biological limitations through technological augmentation, we are also faced with the challenge of navigating not just

the enhancement but the overload of sensory information. If perception is shaped by external tools, what strategies can be developed to mitigate overstimulation while maintaining agency over sensory experience?

An overwhelming visual stimulation can sometimes be managed via a calming sound or a specific type of pressure. Since the world is evolving into larger and larger amounts of information and stimuli, it's interesting to wonder if the inclusion of new types of non-biological sensors in our perception will provoke further overstimulation or present opportunities for relaxation based on new calming sensations. Perhaps soon, focusing on calming fluctuations of cosmic microwave background radiation will provide a mental shelter from saturated visual and acoustic inputs in our present environment.

# hypervigilance

*Stochastic resonance is a phenomenon in which a signal that is normally too weak to be detected by a sensor can be boosted by adding white noise*

Whenever I take a walk, I don't just stroll from A to B. I'm constantly monitoring every obstacle, every moving object and person around, everything that can be moved by the wind or shifted by the weight of raindrops. I calculate the next position of every object, adjusting my trajectory to account for the space needed for myself and my companion, when there's one by my side. I walk, and I am in the near future as much as I am in the present|more than most people I've discussed this with.

I observe what everyone else sees, and I analyze the changes in their motion patterns and facial expressions, curiously attempting to predict their intentions, possible thoughts, and probable actions. I play out their actions in my mind like a game of chess. I'm here and now, yet I am also everywhere before and after. I'm everyone in my own form, simultaneously avoiding and seeking connection.

The brain's "signal detector" operating in an overly sensitive state, amplifies both real and perceived threats. Constant monitoring, responsiveness, attention to subtle changes, amplified details that go often unnoticed.

% How could I share a hyper-experience?

In their article, Wiesenfeld and Moss emphasizes the counterintuitive role of noise in enhancing signal detection and transmission in nonlinear systems [Kurt Wiesenfeld, 1995].

Individuals with ADHD and autism often show heightened response to sensory input which could be seen as a form of "enhanced signal detection". By framing hypervigilance as a system response to noise, this model emphasizes the potential for both challenges and strengths in neurodivergent sensory processing.

# Laplace's demon

$$\frac{d\mathbf{x}}{dt} = f(\mathbf{x}, t)$$

Pierre-Simon de Laplace conceived a thought experiment involving a hypothetical intelligent being with knowledge of the current state of everything and the capacity to process all that information. Under the hypothesis of a deterministic universe, such a being would know both the past and the future, thereby eliminating the perception of time, since everything that exists now would also reveal what was and what will be.

In a much more limited context of both space and time, the constant monitoring of microscopic changes and patterns places me in a position to predict possible futures and assume causality from potential pasts. I live without a normal perception of time, burdened by the overwhelming anxiety of processing all possible realities with the same intensity as the "here and now." Predicting an experience and experiencing the predictions. Presuming a cause for every effect.

Sense belongs to the realm of Aion, not Chronos. [Deleuze, 1969]

In the context of the digital arts, the idea of predictability often manifests itself in a form that simulates control while embedding elements of randomness and chaos, allowing the viewer to experience the tension between determinism and uncertainty.

# wave function collapse

$$a \propto E$$

Anxiety is proportional to the entropy of a situation.

## Entropy, quantum mechanics and puzzles

The algorithmic way to solve a sudoku puzzle is to find the cells that present minimum entropy. This means, find the cells where the number of possible options is smaller. When a possible solution is presented to this cell, the cells around them will in turn decrease their entropy.

According to quantum mechanics, the wave function represents the probabilities of different coexisting realities, that is, until a measurement is made. At the moment of measurement, chance is replaced by actuality. The wave function collapses, and reality is set.

Every unknown in life, every decision still not made, creates a multitude of possibilities, a distribution of parallel potential realities, simultaneously existing in a high entropy state.

Making a decision, or a discovery, will collapse all possibilities into one, reducing entropy and in consequence reducing the associated anxiety for the unknown.

```
% Observing as a Constructive Act
```

Observation is never passive. When we observe, we frame, filter, and interpret phenomena through the lens of our preconceptions, cultural codes, and technological mediations.

McLuhan suggested, in the context of media ecology, that what we observe is shaped by the tools and contexts of observation.

The act of looking is an active engagement. The technologies used for observation, such as cameras, screens or algorithms, affect the observed object by framing and introducing layers of abstraction, transforming the observer into both a participant and a subject of the observation. Media plays an important role, as it pre-selects and amplifies certain aspects of reality and ignores others, conditioning our gaze.

Michel Fucault discusses how, in relation to the panopticon, observation also defines a relationship between the observer and the observed. The awareness of being watched, creates self-regulation and transforms behavior. % surveillance [Foucault, 1975]

Engaging with a moment

Observing regardless of consent

Collapsing, creating reality

# emulation

*Human beings are creatures who practice and train, creatures who are free to reach beyond themselves in the process of becoming.*

Peter Sloterdijk [Sloterdijk, 2014]

I learned about the mask I put on unknowingly to fit in, to attract less attention, to avoid conflicts and misunderstandings. I learned the consequences of wearing this mask.

Living often feels like running an emulation program, replicating behaviors and responses that come naturally to others. On the surface, the emulated environment mimics a typical operating system, seamlessly performing tasks and following expected protocols.

The effort to conform to neurotypical standards can be exhausting, often overwhelming and disconnecting.

The tension between imitation and authenticity mirrors the challenges of emulation. Like an emulator replicating the functionality of another system, masking often relies on recombining observed behaviors to navigate social environments. But emulation, by its nature, exposes the limits of replication, revealing deeper truths through interaction and engagement.

In his essay *The Work of Art in the Age of Mechanical Reproduction*, Walter Benjamin describes the uniqueness of a piece as its *aura*, and argues that mechanical reproduction diminishes the aura of an original work of art, affecting its authenticity [Benjamin, 1935].

The rise of digital art and AI technologies further complicates the discussion on authenticity. In the digital

realm, the ease of replication and distribution encourages a reevaluation of authenticity. The available tools contradict, or at the very least challenge the traditional criteria for what constitutes an original piece, and the notion of what adds value.

Large language models, or *LLMs* offer a powerful example of emulation, imitating human-like language and creativity while simultaneously challenging traditional notions of originality and authenticity.

LLMs are trained on gigantic datasets of text. They calculate probabilities of possible words and generate text that mimics human communication, often indistinguishable from content created by real people. LLMs emulate linguistic styles, cultural idioms, and intellectual processes by identifying patterns in existing data.

Through prompt engineering, users collaborate with LLMs to refine outputs, curating their emulation capabilities. This interplay demonstrates how AI tools can enhance human creativity while raising questions about the nature of authenticity.
If authenticity lies in human origin, AI lacks it. But if authenticity is somehow measured based on the audience's experience, then LLM-generated texts can feel authentic, even when created by non-human systems.

Deeper connections can be found between AI emulation and human cognition. Both systems recombine existing information to create something new. The distinction lies in intent: human thought is driven by curiosity, emotions, and purpose, which add layers of meaning that is (currently) absent in AI's mechanical processes.

```
% biological algorithms
```

Masking similarly involves effortful emulation. By adapting to environments shaped by neurotypical norms, masking suppresses natural tendencies to conform to expected patterns. This raises questions about the boundaries between imitation and authenticity in human interactions. Am I authentic if my responses are carefully curated and contextually appropriate but lack an intrinsic connection to the emulated behaviour?

Ultimately, whether in art, technology, or human behavior, the interplay between imitation, emulation, and authenticity challenges us to consider the deeper meanings behind our actions and the layers of intent that define who we are.

# decay

$$n \to p^+ + e^- + \bar{\nu}_e$$

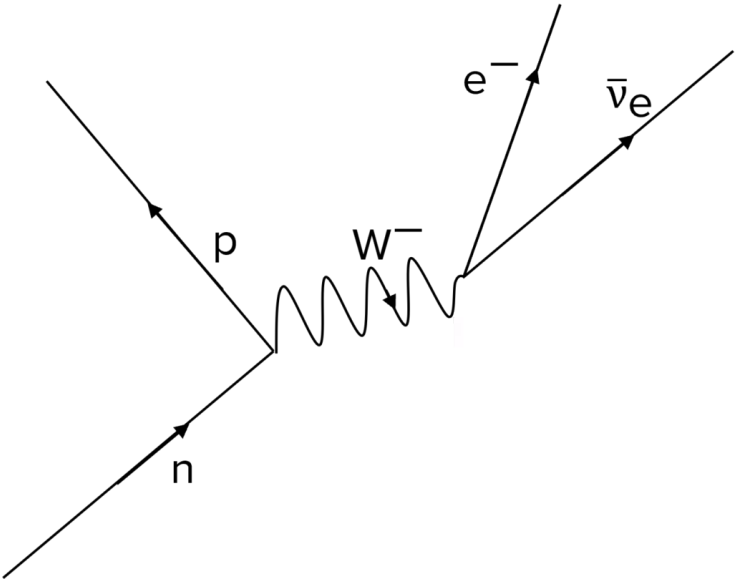


Figure 6: Beta-minus decay.

Decay is a fundamental process of transformation, marking the passage from one state of existence to another. In physics, decay symbolizes change, entropy, and the relentless flow of time. When an atom has an unstable configuration, such as an excess of neutrons, it undergoes decay to achieve stability. A neutron transforms into a proton, emitting an electron and an antineutrino in the process, in a phenomenon known as beta-minus decay.

Just as the carbon-14 that undergoes radioactive decay over millennia, serving as a measure of time and history, our lives too are governed by the forces of transformation and impermanence.

The weight of indecision, uncertainty, and imbalance manifests as forces propelling us toward change. And like nitrogen-14, the stable product of decay, we seek equilibrium, a resolution to the chaos that defines our existence. Much like the emitted radiation in atomic decay, the disruptions and losses we experience are the byproducts of our transformation.

In the digital realm, decay mirrors the entropic nature of information and memory. Glitches, data loss, and the degradation of digital media are reminders of the fragility of permanence in a system that relies on energy and maintenance. Artists and technologists alike have explored the concept of digital decay, creating dynamic pieces designed to purposefully degrade and transform over time. These works challenge the idea of art as a static entity, taking advantage of the beauty of impermanence.

Everything is transient, every present moment unfolds from the past. Processes of becoming and unbecoming underscore the interconnectedness of all phenomena. Decay drives the universe toward higher entropy, as described by the second law of thermodynamics, defining the arrow of time. Entropy is not merely a measure of chaos but a sign of the potential for transformation. Decay is a precondition for creation.

# references

C. Adami. Self-organized criticality in living systems. 1993.

Perry Arjun Shankar. *Curiosity Studies: A New Ecology of Knowledge*. 2020.

Roland Barthes. The death of the author, 1967.

Roland Barthes. *Camera Lucida*. 1993.

Miguel Benasayag. *The tyrany of algorighms - Freedom, democracy and the challenge of AI*. 2019.

Walter Benjamin. The work of art in the age of mechanical reproduction, 1935.

Gilles Deleuze. *The logic of sense*. 1969.

Michel Foucault. *Discipline and Punish: The Birth of the Prison*. 1975.

Michel Foucault. The masked philosopher (le philosophe masqué). *Le Monde*, 1980. Interview.

Félix Guattari Gilles Deleuze. *A Thousand Plateaus: Capitalism and Schizophrenia*. 1980.

N. Katherine Hayles. *Unthought - The power of the cognitive nonconscious*. 2017.

Yuk Hui. Recursivity and contingency, 2019.

Friedrich Kittler. *Optical Media: Berlin Lectures 1999*. 1999.

Frank Moss Kurt Wiesenfeld. Stochastic resonance and the benefits of noise: From ice ages to crayfish and squids. *Nature*, 1995.

Rafael Lozano-Hemmer. Rafael lozano-hemmer, 2025. URL https://www.lozano-hemmer.com/. Accessed: January 3, 2025.

Marshall McLuhan. *Understanding Media: The Extensions of Man*. 1964.

Peter Sloterdijk. *You Must Change Your Life*. 2014.

Dr. Parul Mishra Sonal Dutt. The speculative memory: contextualising memory in speculative fiction. *South India Journal of Social Sciences*, 2024.

Hiroshi Sugimoto. Hiroshi sugimoto, 2025. URL https://www.sugimotohiroshi.com/. Accessed: January 3, 2025.