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FACULTY OF FINE ARTS



**Fluid Mirrors:
Filming the Rivers of the Future**

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Master in Multimedia Art
Specialization in Moving Image

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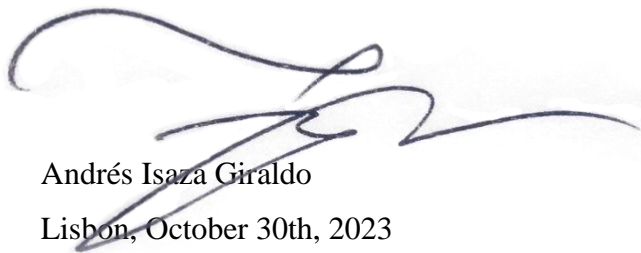
Translated from Portuguese by the author

2023

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Andrés Isaza Giraldo
Lisbon, October 30th, 2023

Summary

This work seeks to understand the physical and metaphysical dimensions of rivers and how they can be expressed as a cinematographic process. It proposes a film that is analogous to the river in its form, volume and time, through different ontological and artistic perspectives. Three main questions are addressed: how to film the rivers of the future, how to make a mirror film and how to film from the visual cortex. Although these questions may seem impossible to answer in a practical way, possible approaches, both philosophical and artistic, as well as scientific, are specified.

The figure of Narcissus in contemporary art reveals an obsession with creation and the media itself. In addition, Narcissus is interpreted as a representation of contemporary social illness, since technical modernity has left human latency dormant in us. The work draws on the philosophy and mythology of various native peoples, especially from the Amazon River basin, who describe the practices of dreaming and connecting with the spirit world. A cure for modern numbness is proposed through a reflective film that invites the viewer to experience the flow of Narcissus and his metamorphosis into a river.

After reviewing rivers, mirrors and the visual cortex from a reductionist perspective, a unity of concepts is proposed in the cranial box in a scientific-poetic speculation. In the middle of these digressions are the artist's dreams and his subjective perception of the natural and artificial world, as well as the technical decisions that thought forces in the construction of a river-mirror-cortex film, which include 360° camera shots and machine learning algorithms. Instead of arriving at concrete elaborations, the essay proposes the liberation of the symbolic state of art and the free formation of art in both the object and the viewer. In the end, there is only silence.

Keywords: cinema; rivers; science fiction; perspectivism; Narcissus.

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*To all the indigenous savants,
to the freedom of the waters,
to my female friends
and to Daniel's luminous shadow.*

Thanks:
Rita Branco for her style correction.

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Author's note

The ancient alchemists made mirrors without understanding the basic axioms of quantum physics. And I'm making movies without understanding the basic principles of the sacred world. Magic understands of people, but not of films. I put my body to channel the world of rivers and dreams in a cinematographic act. There's no room for skepticism, no room for wondering about the existence of God or of the magical means, no room for questions that seek an objective, verbalizable, replicable, verifiable truth... You'll notice that this text avoids symbols and stability, because I only believe in images, in their integral and "pleni-significant" power. At the pillars of the text, you'll find rivers and, only in the corners, a film director wondering how to structure a narrative world out of rivers and dreams, and how to choose and place a camera to film underwater and inside the skull.

It's worth clarifying that the original dissertation, written in Portuguese, refers to a female reader. Two reasons led me to change the correct universal masculine of grammar for the universal feminine proposed here. Firstly, as a tribute to my teachers at all academic levels, because they were the ones who had the most patience with me, who showed so much affection for their profession and managed to encourage my creativity instead of restricting it. Secondly, for my female friends to whom I dedicate this dissertation, because they are the ones who teach me the goodness of affection.

Introduction

A few years ago, I started thinking about this movie without knowing how to do it. I knew it had a few elements: firstly, that it was about Narcissus, or at least inspired by this mythological figure who well represents obsession and illusion; secondly, that it was science fiction, but that it had more to do with indigenous cosmogonies than with the natural sciences *strictu sensu*; and, thirdly, that the film was a river. The more I tried to structure the film visually and dramatically, the more I felt it was running away from me. I felt I needed to let the film find its course, like the river finds its way through the mountains: gravitating towards the sea, eroding the rock, forming the valleys that mark its path. The river follows the path it has made for itself. It's a gradual but tireless process. I let the film find itself, yet I was trying to meet it. It's like the exercise of the Italian sculptor Penone, who tries to become a river and become a sculpture. Penone's idea is to try to make a rock like the one the river made, which forces him as a sculptor to become a river. So, let's think that the process of this film is exactly that: that of being-river, making-river, filming-river...

In a 1969 interview, Soviet director Andrej Tarkovsky spoke about montage in opposition to the pioneers of montage in his country:

As for editing, my principle is the following. The film is like a river; the editing must be infinitely spontaneous, like nature itself. That which forces me to go from one shot to another by means of editing is not the desire to see things from closer up, nor to force the spectator to hurry up by introducing very short scenes. [...] Furthermore, I do not consider that the essence of cinematography is the collision of two scenes, a collision that should give birth to a third notion, as Eisenstein used to say. On the contrary, the nth shot seems to me to be the sum of the first, the second, the third . . . fifth, tenth . . . and of the shot "nth-1", meaning the sum of all shots preceding the nth. Thereby we create the sense of a shot, in relationship to all the shots that have preceded it. That is my editing principle.¹ (Tarkovsky quoted by Ciment et al., 1969, p. 19)

¹ Ciment, Michel, Luda Schnitzer and Jean Schnitzer (1969). Andrei Trakovsky "The Artist in Ancient Russia and in the New USSR" in *Andrei Tarkovsky: Interviews*. Ed. John Gianvito. University Press of Mississippi. 2006.

If Eisenstein saw cinema as an artifact sensitive to metaphorical meaning through rhythm and comparison between shots, Tarkovsky wanted to let the film flow like a river. He doesn't see parts, but the whole. He doesn't see meaning, but time. That's what a river is, a whole flowing together. And Tarkovsky manages to see in this flow a possibility for technical development.

It's not superfluous to quote these sculptors —after all, Tarkovsky considered himself a sculptor of time— on the contrary, the methodology for making this film has a lot to do with sculpture, because the river is itself a sculptor and a sculpture. The purpose of this dissertation is to understand the dimensions of rivers, both physical and metaphysical, and to make a movie through the speculation of these forms. It is therefore to make a river-film, a film that is analogous to the river, that has the same forms, volume, time, etc. Not only river as a process as in Penone, nor only as a technical principle as in Tarkovsky, but also as a dramatic and filmic practice. In other words, being-river as a structuring cinematographic practice.

Three questions will be discussed in this dissertation: how to film the rivers of the future, how to make a mirror movie and how to film from the visual cortex. All three are supposed to be impossible questions in a practical sense, but the idea is to speculate on the possibility of emulating possible answers. To propose a way of approaching and tinkering with them in the hope of seeing something appear, both from a philosophical and a cinematographic point of view. In the end, I will conclude that these are not three completely different questions, but that one can be seen from the perspective of the other.

The dissertation is divided into certain dimensions of the river: downstream, temporality, reflection, depth, cascade and estuary. In this introduction we will discuss the downstream, the way of understanding movement and flow in the world and in cinema. The first chapter presents the temporality of rivers and assesses the possibility of making a science fiction around indigenous Amazonian thought, from shamanism and Amerindian perspectivism (ideas that will be presented in this introduction). In the second chapter, surface, the myth of Narcissus is explored from different contemporary media art. In the third chapter, depth, I discuss and problematize the contemporary situation of

rivers, social narcissism and the lack of relationship with the dream world. In the fourth chapter, I present a speculated dimension that I have called "crossing the waterfall" and I poetically discuss a scientific digression on outer and inner rivers. In the end, the estuary can be found, a gateway out of the river and into the film.

In the rest of this introduction, I will present the first dimension of the river: downstream. Then I'll present the three questions of the dissertation and some methodological notes in relation to indigenous thought.

Downstream

If we look at a specific particle of river water, it traces a drop from the mountain to the sea, the simplification of which follows Vector 1, which I have called downstream here. This vector will be the central axis of the film, in which our character will always be descending until he meets the sea. The movie, wanting to be a river, lets itself fall and flows awkwardly.

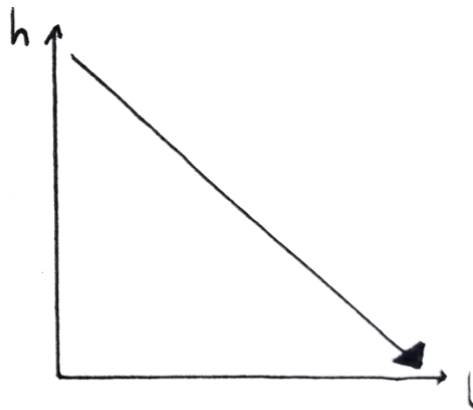


Figure 1. Vector 1: Downstream

The ideas of the constant flow of the river are often wrongly attributed to Heraclitus due to the paraphrase of Arius Didymus preserved by Eusebius, in which Didymus quotes Zeno. And finally, it would be cemented by Socrates' comment in Plato:

Heraclitus apparently states that "Everything is in movement and nothing remains", and assimilating the beings to the current of the river he says that "One could not enter the same river twice". [...] Does it seem to you that he thought differently from Heraclitus, who gave "Rhea" and "Cronus" to the ancestors of the other gods? Do you think he accidentally gave them the names of rivers? As Homer says, "oceanic origin of the gods and mother Thetis" (and I think also Hesiod). Orpheus also says, apparently: Ocean of the beautiful current was the first to initiate the union, who betrothed his sister Thetis, born of the same mother as him. So let's consider the fact that [Homer, Hesiod and Orpheus] also agree with each other and that all these formulations tend towards the doctrine of Heraclitus.²

According to the philologist Álvarez Salas, it is unlikely that the 'theory of flux' came from Heraclitus, but that Zenón's mistake in quoting Heraclitus may have to do with an ideological contiguity between the work of Epicarmus and the thought of the Eleatics, without having anything to do with the thought of Heraclitus. I don't want to go too deeply into this problem of the historical location of the 'theory of the flux', but it's worth saying that it's clear from Álvarez Salas' exposition that Heraclitus' thought has to do with a conception of the logos of the world, and after wandering through the flow of the river I will arrive to similar conclusions in an unexpected way in chapter 4:

Heraclitus' fundamental doctrine, on the other hand, as the most authoritative interpreters of his thought agree, lies in the recognition of the intrinsic unity of all things, whose apparent multiplicity or diversity and whose latent or manifest state of tension between opposing tendencies, with the possible permutation of one thing into its opposite,

² Plato. As quoted in Álvarez Salas, Omar D. *La 'teoría del flujo' de Heráclito a Epicarmo*. Institute of Philological Research. UNAM. Translated by the author. Original: Original: Heráclito afirma, parece ser, que "Todo está en movimiento y nada permanece", y asimilando los entes a la corriente del río dice que "No podrías entrar dos veces en el mismo río". [...] ¿Te parece que pensaba diferente de Heráclito el que puso "Rea" y "Cronos" a los ancestros de los demás dioses? ¿Acaso crees que dicho personaje les puso accidentalmente a ambos nombres de corrientes? Como a su vez Homero reza "Océano origen de los dioses y la madre Tetis" (y creo que también Hesíodo). También Orfeo dice, según parece, que: Océano de la hermosa corriente fue el primero en comenzar la unión, quien desposó a su hermana Tetis, nacida de la misma madre que él. Considera, pues, el hecho de que [Homero, Hesíodo y Orfeo] concuerdan también entre sí y que todas estas formulaciones tienden hacia la doctrina de Heráclito."

is but the visible aspect of a "hidden harmony", that is, of that underlying structure in all things in which in reality "all is one".³

The 'theory of flux' to which I want to refer at this point, and to which Plato also refers, can initially be attributed to the argument of growth formulated by the comedian and philosopher Epicarmus in response to the inalterability of the Eleatic doctrine. This argument can be found in one of Epicarmus's fragments in which the character uses this absurd argument to be absolved of responsibility in a trial:

-Now look at men too: one grows, another shrinks, all are always changing. But that which by its nature changes and never remains the same, would always be something different from that which underwent the change: you and I yesterday were one and today we are another, and again another and never the same, according to the principle of growth. (Epicarmus)⁴

This argument would have a great influence on classical Greek philosophy and would eventually give rise to the 'theory of flux'. This theoretical misunderstanding has now been resolved, although it's not quite clear whether Epicarmus or later philosophers can be credited with this theory.

³ Álvarez Salas, Omar D. *La 'teoría del flujo' de Heráclito a Epicarmo*. Institute of Philological Research. UNAM. Trad. By the author. Original: *La doctrina fundamental de Heráclito, en cambio, según están de acuerdo en admitir los intérpretes más acreditados de su pensamiento, radica en el reconocimiento de la unidad intrínseca de todas las cosas, cuya aparente multiplicidad o diversidad y cuyo estado latente o manifiesto de tensión entre tendencias opuestas, con eventual permutación de una cosa en su contrario, no es más que el aspecto visible de una "armonía oculta", es decir, de aquella estructura subyacente en todas las cosas donde en realidad "todo es uno".*

⁴ As quoted by Álvarez Salas. Author's translation. Original: *—Así mira ahora también a los hombres: uno crece, otro viene a menos, todos se encuentran en proceso de cambio todo el tiempo. Pero lo que por su naturaleza cambia y nunca permanece igual sería siempre una cosa distinta de la que sufrió el cambio: tú y yo mismos ayer unos éramos y hoy otros somos, y de nuevo otros y nunca los mismos conforme al principio del crecimiento.*

Humberto Mauro, a pioneer of cinema in Brazil, came up with a similar idea: "Cinema é cachoeira"⁵ ("*Cinema is a waterfall*") . When Mauro told people that he was a film director, they would tell him that he should go and film the waterfall they knew. He found this relationship between cinema and the waterfall funny, perhaps because of the hypnosis of the movements, or the flow of the images... it's hard to say. But he managed to sum it up in this wise phrase. For Mauro, reality, like a waterfall, is in a constant process of change. Nothing is stable in the world, because all things are constantly changing. And the waterfall, although it's always there, is also always changing, and you can never see it the same way twice. This is the nature of the world for Mauro, as well as of cinema: constant change.

Film is also flux, not only because it represents a world in a constant process of change, but also because of its internal structure, because of the way it works, which creates the illusion of movement. In other words, the very shape of the film frame by frame is like the shape of the river. Imagine a film running in front of the projector. That flow is like the flow of the river itself. Films, in trying to capture the process of change in the world, it become a movement on itself, it become a river.

The Western view of temporality agrees with this unidirectional vector, which sees a succession of events in a temporal sequence. It's the same logic as the clock, the train and the cinematograph, which are some of the modern artifacts *par excellence* and manage to use this single direction to connect the present world with distant spaces. But the real effect of modernity on rivers (and many other civilizations) is the dam. To continue the movement of modernity, it now needs to stop rivers and stop their flow to exploit, steal or vampirize their (physical) energy.

Two additional vectors complement the downstream. The first is the fall (Vector 2) which is an extreme downstream or waterfall. The other vector is the dam (Vector 3). The downstream is made up of these faster or slower variations in height, the average of which is Vector 1 (Downstream).

⁵ Jabor, Arnaldo. (1996, 17 de setembro). *O Cinema é uma misteriosa cachoeira*. Folha de São Paulo.
<https://www1.folha.uol.com.br/fsp/1996/9/17/ilustrada/22.html>

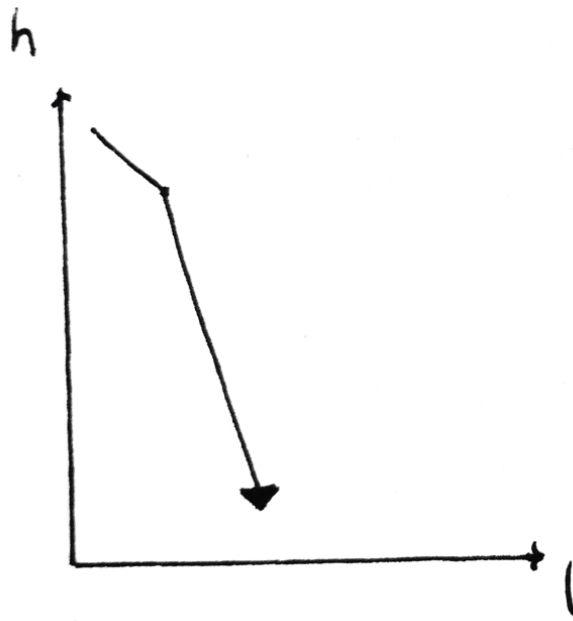


Figure 2. Vector 2: Fall

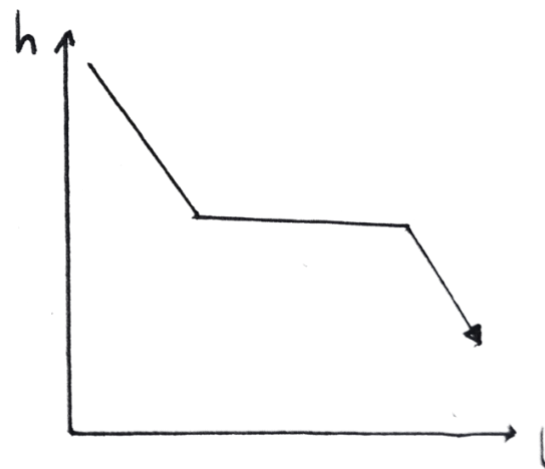


Figure 3. Vector 3: Dam

Questions

It's impossible to give a certain answer to the questions that will be posed below. In a pragmatic sense, it is obvious that it is not possible to film the rivers of the future, to make a mirror film, or to film with the visual cortex. It is speculation itself, the search for an evasive answer that ends up being the most interesting question. Although I refrain from offering concrete hypotheses, there are pre-existing assumptions that are set out in this section. But it is precisely in this exercise of speculation to the point of taint, of destroying one's own idea without fear of failure, of holistic thinking that is lost in its own air, that conceptual and artistic experimentation gains its most important value: that of my learning.

I've spent my whole life breaking things: electronic devices, cameras, toys, friendships and a few mirrors. It's through this destructive gesture that I've learned to learn, not only by making mistakes, but especially by wanting to tinker with things without fearing the imminent failure of the devices. A mediation between risk and creativity. It's through tinkering that I'm finally able to learn something, that I understand the properties of the world, how it works, the tiny parts that make it up.

Q1 - How to film the rivers of the future?

King Solomon didn't know when he said that rivers will always flow again⁶ that one day the rivers would dry up and the sea would fill up, and even then, we wouldn't be able to quench the thirst of a humanity craving for novelty or lack. The unchanging world of myths and antiquity is over. I'm writing this essay in yet another summer that is historic for its heat, a year after the Portuguese dams reached unprecedented lows and a few years before the Colombian glaciers disappear. We have crossed a threshold of no return. Rivers have been dragged, channelized and their flow stopped before the dams, they have been polluted by so many industries and waste, and their ecosystems have been dying out suddenly and gradually. And much of their energy —magical energy and not physical— has disappeared and will never return.

⁶ See page 25.

And yet, despite all the changes, maybe one day the rivers will return. Their future, their journey, goes beyond human history. So many futures still await, so many futures still to come. King Solomon will be right again, and he will be wrong again. The rivers take place on another plane of existence, one that runs through time and comes back on itself again and again. Rivers flow from top to bottom, but also in a circular fashion, and time cannot be thought of as having a single direction. That there is a yesterday forward and a future backwards. But it's possible that the future rivers have already arrived, it's also possible that we're already at that other moment in history that should be called <<the future>>.

We can already see how antiquity and the future come together and oppose each other. And how it is the river that brings and carries the union of times and ways of thinking. How, in front of the waterfall, I am me-of-all-times. I'll come back in detail to these ideas of time.

Q2 - How do you make a mirror film?

Throughout human history, there has been a craze for producing objects that reflect light back to the observer. The Narcissistic craze that comes from the image reflected on the surface of ponds. In this sense, the question is not dissimilar to Q1, also having to do with the intrinsic properties of water.

In ancient times, mirrors were made from metals and polished rocks. And during the 18th century, great efforts were made to develop techniques for blowing glass and galvanizing it. These mirrors went from luxury goods to ordinary objects in less than a century.⁷ At the heart of cinema, the silver emulsion of the film itself and the electronic silicon in video sensors function as chemical mirrors that capture light in time. But it is not the aim of this dissertation to make an object that literally reflects light. It's a question about the alchemy of mirrors, but not about the physical chemistry of the object.

⁷ Melchior-Bonnet, Sabine. *History of the mirror*. Trad. José Alfaro. Edit. Orfeu Negro. Lisbon. 2016

Could it be said that there is something else behind the mirror's shiny surface? The mirror is a deceptively deep object. Etymologically, the word "reflection" means something like bending again. And this same polysemic word is used in both physics and philosophy to denote different processes. What do we really mean when we talk about having a reflection? Do we mean that we are having a process of unfolding in which we can see ourselves through ideas just as we look at ourselves from the outside with the help of a mirror? Or are we talking about the process of bringing ideas back and forth in our brain as if the skull was an echo chamber?

Mirrors are also an obsession in cinematic representation. One of the most recurrent examples is Andrej Tarkovsky's film *The Mirror* (1975) and the famous dream scene in *Persona* (1966), by Swedish director Ingmar Bergman. But it's not this problem of speculative representation that Q2 refers to either: neither the representation of oneself, of using the film to see oneself, nor the use of the mirror as a metaphor for the characters' inner and outer duality.

The mirror that this dissertation/film proposes is in the movie theater, in front of the viewer but also inside. The mirror is the movie, and the movie is a mirror. A fluid and reflective river, an immaterial object to "see" and to "reflect". The reflection is therefore not outside, it is neither on the screen, nor in the river, nor even in the film. The reflection is inside us, it speaks with our own voice, it starts from our own experience, and it can't show anything other than what we already are.

Q3 - How can video be used to emulate the visual cortex?

The appearance of "artificial intelligence" through machine learning at this moment in history is like the appearance of the photographic camera. Photography took the place of the academic tradition in painting, which for centuries had been concerned with the objective representation of the world and the mastery of perspective, anatomy, the physics of light and so on. From this moment of crisis came Impressionism, which would be the gateway to all the following avant-gardes. The painters of this time were more interested

in the subjective gaze, in understanding the outside world not from the outside, but from the inside. Something similar is happening today. As soon as machines learn to represent the world in the same way as painting and photography, photographic objectivity will disappear —if it still exists. It is no longer possible to see an image without doubting whether it is an impression of light or a computer generation. This year, images of Donald Trump being arrested appeared in the media long before it actually happened, as did the Pope dressed in Balenciaga. It was only after they were published that the newspapers realized that the photographs were fake.

How can we oppose the perfection of the digital, its all-knowing, all-repeating patterns? Where are the humans behind the chains of calculating matrices? If the answer to Joan Foncuberta's post-photography is to create anti-objective images, the answer proposed in this question is something else: to imitate the impressionist attitude. In other words, to photograph from the point of view of subjectivity rather than objectivity. Although the answer seems simple, the process is much more difficult. If we compare the photographic and cinematographic camera to the human body, the camera would be the eye-retina. Cinema, like classical painting, has been made by imitating the physical properties of light, and especially its "imprint" or persistence on the retina. Although the retina plays an essential role in vision, today we know that it is in the visual cortex that most of the image-building processes take place. It is in the visual cortex that the elements of images, the unity of objects, movement, direction and all kinds of identifying, assimilating and comparing characteristics are identified.

Could we then move from a retinal cinema to a cortexian cinema? The answer could lie in the very algorithms that are generating the crisis, in the machines and their vision processes that are very similar to our own vision processes. Is it possible that it's the digital processes that are subverting the objectivity of digitalization? Neural networks in computing have served to visualize how the logical processes of seeing work, and to make basic analogies with the functioning of our own visual cortex. Using different types of algorithms, it may be possible to make a movie beyond the retina-sensor. Would you offer a pre-seen or pre-processed movie? Passed through my interior, the interior of the character and the interior of the machine? There are still many unresolved questions and there will be many more at the end of this dissertation.

Research methodology

This dissertation builds a rigorous assessment of the properties of the river to better understand how to translate this into a cinematographic act. It is through speculation with science, myths and dreams that it is possible to arrive at a new answer. On one hand, the idea is to accept the objects of study of the perspectivist world within academic thinking, and experiment with them in the same way that academia would with its own objects of study. But above all, it's about taking advantage of indigenous forms of knowledge to be able to evaluate the objects of science. In other words, it's both seeing the spiritual world through scientific thinking and seeing the world of science through spiritualistic thinking.

In the short story "La sincronía del tacto", by Mexican writer Gabriela Miravete, in the compilation of Latin American science fiction short stories *El tercer mundo después del sol*, a biology student comes across a plant that has the property of uniting all time. Although the student is sure of the substance's magical powers, her teacher warns her:

*-My advice is not to try to explain how it affects consciousness, anything that doesn't sound like natural science. If you do, they won't let you continue. Trust me. Do you want another piece of advice? Don't do this research alone. Look for those who are already observing what you want to understand.*⁸

This dialogue should serve as a premonition. Firstly, because of the reluctance that the academic community may have in dealing with magical subjects. It is therefore necessary to warn that the argumentation of this chapter contains magical axioms, and that this idea is at the heart of the project. When I speak of magic here, I am not referring to an esoteric metaphysics, but to an idea that should be concise and evident, of a form of the world that cannot be approached through scientific rationality or Western epistemology. "Falsifiability" is a question of scientific rigor, while human experience - and perhaps

⁸Miravete, Gabriela Damián. "La sincronía del tacto" in *El tercer mundo después del sol: antología de ciencia ficción latino-americana*. Bastidas Pérez, Rodrigo (compiler). Editorial Minotaur. Bogotá.

Translated by the author. By the author. Original: *-Mi consejo es que no trates de explicar cómo afecta la conciencia, nada que no suene a ciencia natural. If you do, they won't let you go on. Believe me, what other advice do you have? Don't do this search alone. Seek out those who are already observing what you want to understand*

better, the experience of the living or the experience of the cosmic - has to do with the feeling of existing-in-the-world, of being-body, of being-time-now but also of being-body-history and, finally, of the relationship between beings who simultaneously inhabit the world albeit in phenomenological ways. That's where magic lies, inside our experience, and outside in relation to all things.

For the French writer Jean-Marie Le Clézio, in his book *El sueño mexicano o el pensamiento interrumpido*, he explains how the Mayan world was impossible for the Spanish to understand even though they had a supremely sophisticated knowledge of the calendar as well as a system of writing:

In the classical era of the Maya, the great triumph was the calendar and the long count, which were based on this conviction of a cyclical and spherical universe in which time always begins anew. For the Renaissance European, skeptical and imbued with knowledge, the Amerindian world was totally incomprehensible due to its religious and symbolic system. For the conquistadors, this philosophy of recurrence and this idea of a finite and predestined universe became the very symbol of pagan darkness: the "ridiculous fables [...] of our adversary Satan", says Father Sahagún in the prologue to the Seventh Book, dedicated to astrology.⁹

It is clear, therefore, that the truth of the thought confronted here is not separable from its own myths. It is in the very religiosity of the word, in devotion to the myth and its praxis, that we can approach these truths. In fact, I think that the biggest problem in understanding magical thinking is thinking that it is a system of symbols and therefore that what is said is meant to replace a meaning that cannot be expressed in any other way. But this is not the case. When the Indian says that the river speaks, he is not personifying

⁹ Le Clézio, Jean Marie Gustave. *El sueño mexicano o el pensamiento interrumpido*. Fondo de Cultura Económica. Ciudad de México. 1992

Translated by the author. Original: *En la época clásica de los mayas, el gran triunfo fue el calendario y el cómputo largo que descansaba en esta convicción de un universo cíclico, esférico, en el cual el tiempo vuelve a comenzar siempre. Para el europeo del Renacimiento, escéptico e imbuido de sus conocimientos, el mundo amerindio era totalmente incomprensible debido a su sistema religioso y simbólico. Para los conquistadores, esta filosofía de la recurrencia y esta idea de un universo finito y predestinado venía a ser el símbolo mismo de la oscuridad pagana: las "fábulas ridículas [...] de nuestro adversario Satán", dice el padre Sahagún en el prólogo del Libro Séptimo, dedicado a la astrología.*

the river as a metaphor for the white man's disconnection from nature. The indigenous person truly believes that the river speaks, and if he does, he's sure of it because he's heard it speak.

Within Portuguese academia, Boaventura Santos has built a very strong argument in favor of rescuing the epistemologies of the global South, because academia has rejected all these non-European or North American thoughts. It should be noted that in this chapter I quote three European men talking about the other world. But perhaps seeing the humble exercise of these authors should highlight the still existing need to build new bases for non-Eurocentric thinking from the periphery itself. Later, we'll find several indigenous authors, as well as non-indigenous ethnologists of various nationalities. I think it's important to say that Boaventura Santos has been publicly accused of sexual harassment against an indigenous woman, which confirms the need for a new epistemology written from diverse perspectives, as he himself is already calling for in his lectures. That said, I can quote the author:

It is essential to recognize that there are different forms of knowledge for different social practices and that it is extremely negative that Western modernity has given science the exclusive privilege of rigor. It's not a question of science being rigorous knowledge, it's a question of it being considered the only rigorous knowledge. To go to the moon, you need modern science, but to preserve the biodiversity of the Amazon, indigenous knowledge is essential. Nobody knows the Amazon better than the indigenous people. We need different objectives. This demand to recognize the epistemological diversity of the world is very important, because it is the basis of the first line of external criticism of science.¹⁰

But instead of simply accepting the indigenous knowledge of things that they clearly know more about than we do because of their geographical location, we also need to accept the more advanced knowledge they have of the inner and outer spiritual world, and of the natural world. We must also see this magic as a knowledge that we may not have.

¹⁰ Santos, Boaventura de Sousa. "Lesson 1: Why Epistemologies of the South?" in *In the Workshop of the Artisan Sociologist*. Ed. Almedina. Coimbra. 2020.

For anthropologist Claude Lévi-Strauss, a pioneer in ethnographic studies in Brazil, "There is therefore no reason to doubt the efficacy of certain magical practices. But at the same time, we see that the efficacy of magic implies a belief in magic (...)"¹¹. To give his discourse scientific legitimacy, Lévi-Strauss puts efficacy before magic, and then explains that this effect depends on the belief of the healer, the patient and the community hosting the ritual. Thus, a broader epistemology is needed, not one that respects magical thinking and tries to justify it based on scientific praxis, but one that incorporates it as a tool for creating knowledge that goes beyond rational understanding.

In chapter 1 I will continue to build methodological bases for approaching indigenous knowledge.

¹¹ Lévi-Strauss. "The sorcerer and his magic" in *Structural Anthropology*. Trad. Chaim Samuel Kats and Eginardo Pires. Ed. Tempo Brasileiro. Rio de Janeiro. 1975

1 Temporality of rivers

*All rivers lead to the sea,
but the sea never fills up;
Even though they always run there,
they run back there.
All things bring fatigue.
Man cannot describe them;
The eyes never get tired of seeing,
nor the ears to hear.¹²*
Solomon

To shape this dissertation, I have chosen certain dimensions of rivers. The first principle was that rivers are beyond time. This means that rivers are almost eternal, or at least that they are temporally beyond our historical scale. Although King Solomon in Ecclesiastes proposes rivers as eternal things, modernity has managed to prove otherwise by drastically changing rivers. This principle of the modern river makes up the first idea of the river-future: a river that has been changed by the transforming force of the demand for electricity to support our cities, to supply water to their people and irrigation systems in agricultural production, and which suffers the constant effects of pollution from industries and individuals.

However, it must also be said that these rivers of the future will also have more futures, far beyond humanity. One day the dams will be destroyed by the constant pressure of the water, and the rivers will continue to erode the valleys and mountains. This first dimension of rivers is therefore the temporal and quasi-eternal dimension, which shows that rivers exist in the constant flow of water, from the sky to the sea. They pre-exist and post-exist, and could be seen as gods or titans who shape the planet as if they were molding clay. Rivers contain a specific magic that connects us to various times, times far beyond humanity and life, and more akin to the times of matter. In Vector 4 (Time) we can see a discontinuous line that extends along the time axis in an indeterminate way. The discontinuity has to do with the rainy seasons in which the river appears and disappears.

¹² Eccl 1:7-11 Reina Varela 1960. Portuguese translation by the author.

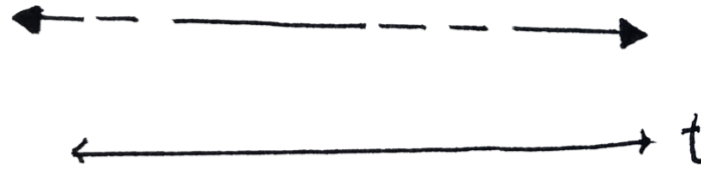


Figure 4. Vector 4: Time

1.1 The dam and the dream of the waterfall

In the spring of 2023, I went to Spain to visit the Punto de Vista Festival in Navarra, looking for inspiration before starting filming. My trip ended in the province of Cáceres, near the border with Portugal. There is where filming would begin. I went to the José Maria Oriol-Alcántara II dam in the municipality of Alcántara, the last dam on the River Tagus before it enters Portuguese territory and one of the largest on the Iberian Peninsula. I wasn't prepared for its titanic size. First, I saw it from the Roman bridge and then I started to approach it on foot. When I reached the top, I felt very nauseous, not vertigo, but a very deep impression on me. Thinking about the Tagus River standing still in front of a large concrete wall made me want to get out of myself. It's grotesque and monumental.

I saw Peter Nestler's restored work, *Die Nordkalotte* (1991), in Navarre and I had thought a lot about his ability to photograph the scale of the great mines of Scandinavia with an wide-angle lens. He takes advantage of the shadows of the clouds and the points of scale. How could I photograph the size of the dam with just a 360-degree camera? Again, I thought it was a bad choice to take this camera. But the challenge encouraged me. To film with it, you must be as close to the subject as possible, but getting to the dam wasn't easy and it was also very risky. Even more encouraging! I continued to study the right bank of the dam and decided that at the beginning of the day I would try to go almost all the way down to the river on the opposite bank. I went out at sunrise and walked. Twice I saw a family of deer passing by, which I felt was a sign of good presage. I managed to reach the river and got as close as I could. I knew that in this image I couldn't see the titanic size of the dam, but I hoped that at least the sense of adventure I was feeling could be transmitted to the image. I kept waiting for better light, the shadow of a cloud or anything

that could really show the size of the thing. And I fell asleep in the silence of the dead Tagus, accompanied only by the birds that gathered there in the morning. I couldn't dream of anything. Not even a small sound. Then the machines started working and the hot Extremadura sun came out. I left with a feeling of death in my chest. I had realized something useful: this camera is going to force me to go on an adventure, to get closer to what I want to film.



Figure 5. Nestler, Peter (1991). *Die Nordkalotte* [photogram].



Figure 6. Still from the movie *No te conozcas*.

So I went back to Lisbon. I was feeling a bit sad and very tired. I had to catch a train and it was there, at the end of the journey, that I finally managed to dream. It wasn't a normal dream, because I wasn't asleep. I was in an almost trance-like state, dead tired. And I felt a waterfall in front of me. Standing in front of it, I became a child again, while still being an adult, and connected with what I haven't yet been. All experiences are one, and so I connected with remote lives. And I just stood there watching the waterfall, being a me-of-all-time. This experience was very important, I felt all the water that was trapped in the dam fall into that waterfall. I felt something not breaking but being united.

1.2 Ancestral technology

For Kenyan director Wanuri Kahiu, in her text "Ancestors of the Future"¹³, time is not linear and the past, present and future coexist simultaneously at every moment. While there are hyper-modern places, there are also those that live in slavery. His vision is also a way of challenging a Eurocentric artistic narrative, which considers the global south as underdeveloped, seeming to imply that it is in a state of becoming like Europe and North

¹³ Byrne-Smith, Dan (editor) et al. *Science Fiction*. The MIT Press. 2020.

America. But could the condition of European rivers really be a premonition of what might happen to rivers in the rest of the world? Kahiu also reminds us of how past and present come together when, for example, a child is named after a grandparent.

The present is inhabited by the past and the future. Many indigenous communities have the idea that time is cyclical. Indigenous thinker Ailton Krenak gives the example of a rowing child who remembers a message from his elders: "Our parents say that we are already getting close to how it used to be"¹⁴. They, who are the seeds of their communities, see in the future the arrival of a desired and reconstructed past. This research is therefore based on this exercise, of seeing the past and the future as an amalgamation, of thinking of ancestry as a technological-scientific event, and inspiring from it a future —albeit dystopian— reconstituted by the relationship with their ancestors.

Science fiction, as a genre, has found a place anywhere in the world. American cinema is strongly linked to the natural sciences, which made great progress in the United States during the 20th century. Films such as *2001: Space Odyssey* (Stanley Kubrik, 1968) or the Star Trek saga can be extrapolated to quantum physics theories such as relativity or string theory, respectively. *Solaris* (Andrei Tarkovsky, 1972) is often seen as a response to the space race on the eastern side, while Kubrik's cinema is immaculate and publicity-oriented, Soviet cinema has an air of decadence and anguish typical of late Soviet communism. In East Asia, on the other hand, it has been surrounded by an idea of technofuturism marked by the growth of the technology industry in Japan and Korea, as well as Chinese production. Films like *I'm a Cyborg But That's Okey* (Park Chan Wook, 2006) fantasize about a future built with even more electronic components. As for Africa, a continent apparently relegated by economic and technological development, Afrofuturism exists as a genre that crosses artistic disciplines and world territories. The Cameroonian film *Les Saignantes* (Jean-Pierre Bekolo, 2005) portrays a world built from discarded parts, but above all replicating the hyper-accelerated aesthetic of African music videos of the time.

¹⁴ Krenak, Ailton. *Ancestral Future*. Researched and organized by Rita Carelli. Companhia das Letras. São Paulo. 2022

There are several examples of futurism and science fiction throughout Latin America. Notably the films by Brazilian director Adirley Queiroz, such as *Once Upon a Time in Brasilia* (2017) where a character travels around the country to kill the president of Brazil, Juscelino Kubitschek. I'm also thinking of *Bogotá 2016* (Alessandro Basile, Ricardo Guerra, Pablo Mora y Jaime Sánchez, 2001) where various dystopias are imagined close together for a chaotic, unequal and deeply televised city. In response to the question of what is specific to Latin American science fiction, researcher Silvia Kurlat Ares posits that in recent literature:

If reflection on the relationship between science and culture has a strong presence in many of the texts chosen by these researchers, it is easy to understand from their analysis why hard science fiction has rarely been discussed in Latin America: the whole scientific-technological object has a strange evanescence that quickly gives way to themes linked to the formation of the social, political and utopian imaginary, the construction of identity subjectivities of all kinds (from gender to community), or alterity as an ontological and political problem, as well as a meditation on the social, biological, environmental and ethical consequences of the development of technology during the advance of late capitalism.¹⁵

In Kurlat's postulates, it is thus clear that there is a tendency in Latin American literature to mix the imagination of a future based on the indigenous world. From their philosophical and ecological thinking, their history of oppression and the psychoactive plants with which they approached the sacred.

¹⁵ Kurlat Ares, Silvia. "Science fiction in Latin America. Aproximaciones teóricas al imaginario de la experimentación cultural" en *Revista Iberoamericana*, Vol. LXXXIII. 2017. p. 255-261.

Author's translation. Original: *Si la reflexión sobre la relación entre ciencia y cultura tiene un fuerte presentismo en muchos de los textos escogidos por estos investigadores, en sus análisis es fácil entender por qué raramente se ha hablado de hard science fiction en América Latina: todo objeto científico-tecnológico tiene una extraña evanescencia que rápidamente cede lugar a temáticas vinculadas con la formación del imaginario social, político y utópico, con la construcción de subjetividades identitarias de todo tipo (desde el género hasta lo comunitario), o de la otredad como problema ontológico y político, así como una meditación en torno a las consecuencias sociales, biológicas, ambientales y éticas del desarrollo de la tecnología durante el avance del capitalismo tardío.*

This vision contrasts with a fundamental part of some indigenous thoughts, which is the return, the form of a time that is not historical, that does not tend towards a specific progression. So how can we think of science fiction from a timeless world, where the past returns in the future? How can we imagine a future also inhabited by great dystopian and utopian advances in indigenous technologies?



Figure 7. Denilson Baniwa. Akangatará Nike [Photograph of feather, fabric and paint object]. 2022

1.3 Towards a magical methodology

This research rests on the shoulders of those who have formulated it before, those who have lived and described the issues of indigenous magic. During this research, I have collected different sources that relate indigenous knowledge. On the one hand, the voice of the indigenous people themselves, especially the encounter with Desana-Wahari mythology, thanks to the memory efforts of Diakuru (Américo Castro Fernandes) and the tireless interpreting work of his grandson Kisibi (Durvalino Moura Fernandes), to translate it into Portuguese and give the Desana all their mythology, or as much of it as possible. I admire the institutional effort to publish the Narrativas do Rio Negro collection by the Union of Indigenous Nations of the Rio Tiquié and the Federation of Indigenous Organizations of the Rio Negro in the 1990s and 2000s. And I'm grateful to have found this book in the library of the Faculty of Fine Arts. The distribution of this type of literature was restricted, and I don't even know of any copies existing in Colombia, despite the geographical, hydric and historical relationship with this territory.

There are other indigenous voices that appear in my research, although most of them are anthropologists and writers who have proposed ethnographies of these other peoples. Delvair Montagner, an ethnographer who works with the ancestral medicines of the Marúbo people, reveals that not everything is told to her because she is an outsider¹⁶. The Marúbo people themselves refrain from telling her things that they don't consider appropriate, perhaps because of their power, or perhaps because of the difficulty of translation and cultural interpretation, or because of the mere need to keep them secret or private from cultural practice. There are also cases in which indigenous people self-censor in order not to explain certain aspects of their culture, as filmmaker Isael Maxakali explained in a conversation I attended at the Arsenal Film Institut in Berlin. Despite the trust they have in his work, the wise men of his community asked him to remove some scenes from *Yāmiyhex: The Women-Spirit* (2019), claiming that other indigenous and non-indigenous people should not have access to specific knowledge of their rituals. In

¹⁶ Montagner, Delvair. *The Abode of Souls: Representation of Illness and Therapies among the Marúbo*. Emílio Goeldi Museum of Pará. Belem de Pará. 1996.

many cases, the filmmaker didn't agree with their demands, but he still respected the community's decisions.

There is therefore a voluntary exclusion of cultural specificity in both written and filmic ethnographies. It is not possible to fully understand a culture through its texts, and even less so within our Western philosophical and mythological tradition. Eduardo Viveiros de Castro, in an interview, explains that, in *Mythologies*, Lévi-Strauss decided to tell the specific myths of fire, in other words, that of the appearance of humanity in contrast to the rest of nature, which is the very question of anthropology. And he tries to answer this question based on indigenous knowledge, as if he were trying to make an anthropology of indigenous thought explicit. For Viveiros de Castro: "It is clear that there is a contamination [in Lévi-Strauss' mythology], of his indigenous questions, he chose the myths of the problems that interested him."¹⁷ Viveiros de Castro also warns that for those who have not been involved with Native Americans, the elements of the mythologies seem random, despite the fact that in reality the myths fulfill various roles in the social context, both immediate and in the formulation of a cosmology. It would therefore be important to know these two or three things in the research: that the information is partialized and that it is very difficult to understand without its context. But also, that we're looking for certain answers in indigenous thought, and these have to do with rivers and dreams.

Looking at this map of the Desana communities in the Rio Negro region, drawn up by the Socio-Environmental Institute of Brazil and taken from Vol. 8 of the Desana Mythologies Collection, the border between Colombia and Brazil becomes even more evident due to the total lack of information on the Colombian side. This lack of data demonstrates a skewed understanding of the territory, made up of identity and political fractures. The rivers in the northern region of the state of Amazonas in Brazil come from Colombia and Venezuela, with the Rio Negro being the largest of the tributaries that feed the Amazon basin.

¹⁷ Viveiros de Castro, Eduardo. "Del mito griego al mito amerindio: una entrevista sobre Lévi-Strauss" in *La mirada del jaguar: introducción al perspectivismo amerindio*. Ed. Tinta Limón. Buenos Aires. p. 222

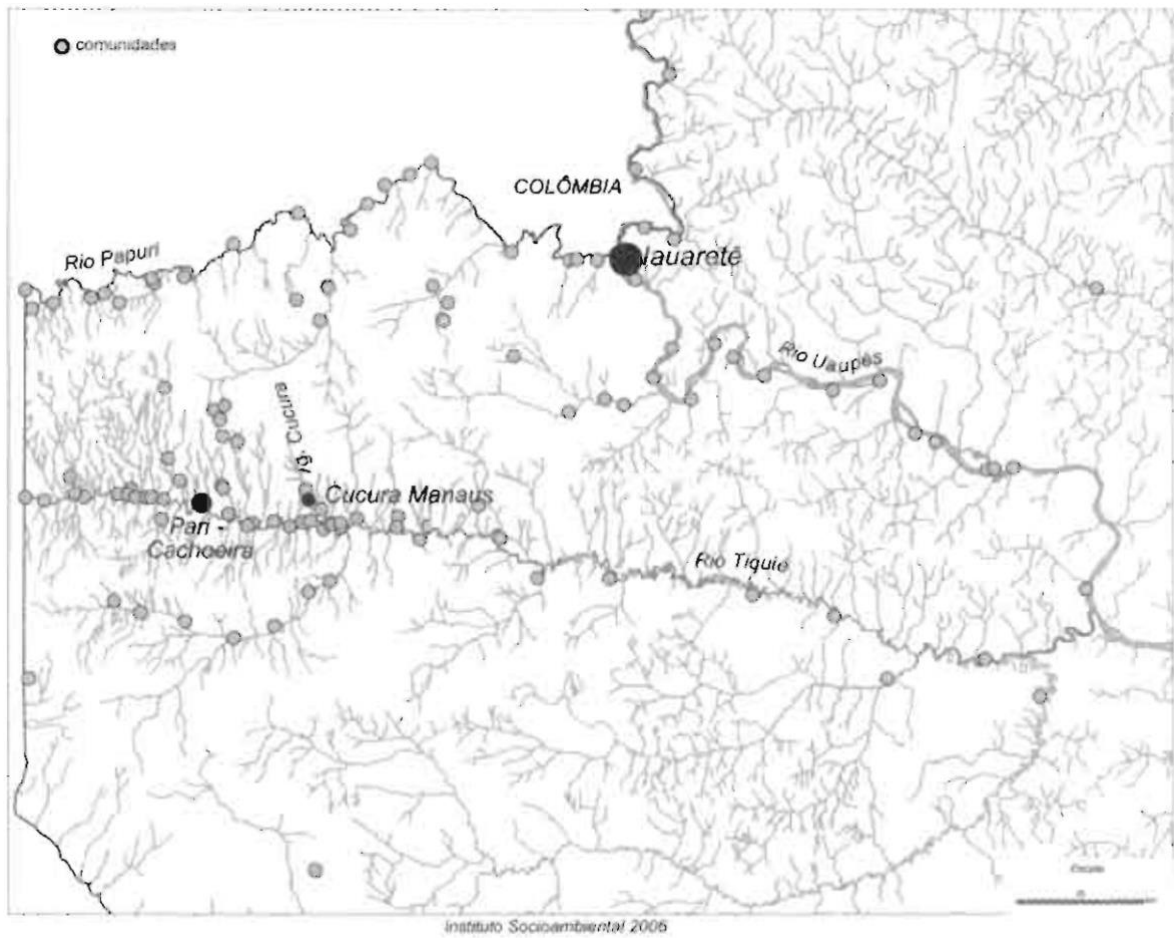


Figure 8. Map of the distribution of Desana communities. Image taken from the book: The Sacred Mythology of the Ancient Desana of the Wari Dihputiro Põrã Group.

I would then like to present another map for this investigation, a map that shows some of the indigenous peoples of the lowland forests of the American continents. The map shows the elevation of the mountains and the course of the rivers, especially those that descend into the Amazon valley and end in the Atlantic. This map of political borders reveals that the peoples whose thinking resonates in this dissertation occupy remote territories, some in Mesoamerica and on the isthmus of Panama, and others on the different tributary rivers of the Amazon, separated not only territorially, but also by their sociolinguistic practices, knowledge and traditions. I then turn to ethnographies and mythologies for the parts that correspond to this research and syncretize different cultures despite their differences. This is a particular spiritual curiosity, and a need to take advantage of this knowledge to also think about academia and artistic practice.



Figure 9. Indigenous research communities superimposed on the topographic and hydrographic map of tropical America.

I ask the reader to be cautious in this speculative research, as I have already revealed the pitfalls of my methodology: how I have synthesized different disciplines and syncretized different traditions to formulate a single speculation that will serve as a framework for reading and re-reading myths and life, and to finally see how this experimental process can take place in a fictional film.

The Desana have a myth to explain the origin of the night. The Daikiru version begins like this:

In the beginning, night didn't exist. Over time, the Umuri Mashã grew tired of living only by daylight. No one had time to rest. If they rested, they lacked food. To prevent this from happening, they had to work all the time, even if they were tired.

The person responsible for this suffering was Buhsari Gõãmu, because changing the weather was one of the jobs he had been entrusted with by the Grandfather of the Universe. In order to divide time into day and night, one had to know how to undo the knot in the string of beads that held the earth to its support and prevented it from rotating. But none of the five brothers knew the ceremony. So Buhsari Gõãmu, not knowing how to do it, was humiliated by all his brothers.

*A long time later, they saw darkness rising in the west. They lived in Diá ohpekó wi'i, "Maloca de Leite do Rio", now known as "Serra do Pão de Açúcar", in Rio de Janeiro, Brazil. Shortly afterwards, they learned that Ñamiñ, meaning "Nights", lived in the west. Ñamifĩ was the master of the night. One day, the five brothers decided to visit him and went to his house in the west, where the Sierra de Bogotá mountain range in Colombia now stands, which for us is called Ñamirl wi'i, the "Maloca das Noites".*¹⁸

In the version of the Desana-Kéhíripōrã myth written by Umusi Pārōkumu and Tōrāmã Kéhíri, there is no direct reference to Bogotá, but Ñamiñ is said to have lived in the north, unlike the Desana-Wari myth which places him in the west. This northwestern axis clearly refers to Colombia and, presumably, to Bogota, a rainy and dark mountain, inhabited since ancient times by the Muiscas. It seems very curious to me that Daikiru or his grandson have the exact geographical reference and the national political divisions. This myth has a very deep relationship with the continent and demonstrates —once more— a historical relationship between the peoples who inhabited it.

They then go to Ñamiñ, offering him their own sister in marriage. He gives them the night, teaches them a ritual and asks them to do it again only when they arrive with the box at the maloka (traditional building). But, knowing the night, all the brothers fall asleep during the ritual and only one stays awake. When they get tired on the way back, they decide to open the box, but the night comes, and they can no longer put it back in the box. All the brothers try to perform rituals to capture the night, but only the brother who stayed awake during the ritual manages to control it. This part of the myth expresses something relevant: an "effective" chant can only be performed by those who know it, you can't perform rituals or talk about a ritual you don't know.

Let's imagine again the Venetian craftsmen making mirrors: to be able to make them, they need to know the proportions of the materials, how to blow glass very well and the specific galvanizing processes. In the same way, shamans have not just inherited their techniques through oral tradition, but they also work to understand them well because

¹⁸ Castro Fernandes, Américo and Dorvalino Moura Fernandes. *The Sacred Mythology of the Ancient Desana of the Wari Dihputiro Pōrã Group*. Union of Indigenous Nations of Rio Tiquié Povoado Cucura and Federation of Indigenous Organizations of Rio Negro. São Gabriel de Cachoeira. 1996.

they have a lot of experience with the ritual and the bodies that live it. It's not possible to heal by playing with a feathered hat and a costume. And this goes back to our cinematographic practice and the question of how to make a mirror film. That's why I go back to my dreams again and again, that's why I ask myself about my emotions and experiences. Because that's where there is something important, in the very doubt, in the question, the experience and frustration itself. In my need to ask myself about myself and life, and how to continue living in this disconnection from the world, connected back only by screens. But I was also concerned about representing a dystopia of indigenous wisdom and having to represent this other world visually and dramatically.

In 2021, Hong Kong philosopher Yuk Hui did an interview with Viveiros de Castro entitled *For a Strategic Primitivism*, in which he asked his interlocutor about the relationship between technique and cosmos in his ethnographic work:

On the other hand, as you say, every technics is a cosmotechnics. To which I would add that every cosmology is a technics. I said I would have nothing to say about the relation between technics and cosmos in my ethnographic studies. Well, a widespread feature of Amerindian mythologies about the origin of human technology (what Lévi-Strauss called "the passage from nature to culture") is the absence of emphasis on notions of invention or creativity, highly valued in modernity. In these mythologies, the origin of cultural technics (implements, processes, institutions, etc.) is canonically explained as a borrowing, a transfer (violent or friendly, by stealing or by learning, as a trophy or as a gift) of prototypes of these implements or processes such as already possessed by animals, spirits or not-quite-human enemies. Technics is not immanent to humans; it always comes from outside. The essence of culture is acculturation, and at the origin of all tekhnē there is mētis, cunning.¹⁹

In his speech, Viveiros de Castro showed how, in indigenous cosmologies, nature is located on the technical plane, and how the opposite also happens: the technical or cultural also possibly being a natural thing. There's an interesting perspective here, and later we will come back again and again to the questions that pose a supposed limit

¹⁹ Viveiros de Castro, Eduardo and Yuk Hui. "For a Strategic Primitivism: A Dialogue between Eduardo Viveiros de Castro and Yuk Hui" in *Philosophy Today*. 2021. p. 4

between the artificial and the biological, although it is already clear that it would not be possible to define it, since the two things can be seen as something continuous. The important thing at this point is to see that shamanism is a technical subject, that magic - this magic we're talking about —is a technical subject and that it would therefore be possible to see this from a dual art-science perspective.

Not long ago I had the opportunity to have a brief chat with science fiction writer Ted Chang, and I asked him what the difference was between fantasy and science fiction. Chang said that in fantasy one or several characters have superhuman powers as if the universe were talking to them, as if they had been chosen by the universe. Science fiction, however, is about something that is invented and changes the world forever, essentially a power that anyone can have. For Chang, this has to do with the industrial revolution and the way technological changes are perceived during our lives, seeing technology change and understanding that technical knowledge is constantly renewed.²⁰

Something does not add up when we compare this distinction with the epistemological problem that Viveiros de Castro points out about Lévi-Strauss' Western readers. They think that the events of myth are arbitrary. But the technicalities of magic and myth are still alive, and they are constantly being transformed, perfected and continue to heal. They are learned and taught even if they come from a connection with the universe. Once again, the concept of magic begins to cause problems when it is compared out of context, when it is understood exclusively as esotericism and not as a technical subject. Talking to the universe should also be seen as a technology.

1.4 The River and Rain

I use this myth to refer to the power that shamans have over the natural world and its cycles. Today, many indigenous people have a Catholic or Christian faith. This relationship between Abrahamic and Amazonian mythologies seems contradictory. On the one hand, a monotheistic desert religion, and on the other, several perspectivist

²⁰ Solomon, Avi. (2010, July 22). *Ted Chiang on Writing*. Boing Boing.

mythological systems from the forest. The meeting of these opposites can have a catastrophic effect.

In the early 1960s, a man named José Nogueira appeared in a Craô community claiming to have encountered powerful spirits associated with their mythical heroes. For his part, Nogueira claimed to be able to control the rain and said he had been sent to civilize his people in a "Western" style:

In the bushes, Chuva invited José Nogueira to get his things. He didn't want to; he just wanted to see. It was just like fire. He didn't take it because he was afraid of getting burned. And then José Nogueira started to "vary" (suffer from his mental faculties): "And then I went crazy out there!" Chuva was like a civilized man. He said to José Nogueira: "Look, you take my stuff and you have to transform it with all these people. Now you're the boss, now you own this place where you are. You take the place so that the civilized don't take it".²¹

Nogueira assumed that he was the reincarnation of a mythological hero, taking advantage of this phenomenon: "In the Craô case, the redeemer is "Chuva", the personification of a meteorological phenomenon which, before this movement, as we have already seen, did not (and perhaps still does not) have a marked presence in the mythology and rites of this Timbira society, except as a non-personified element."²² Eventually José Nogueira cast spells against his people, stopped the rains and caused major droughts. Presumably, his magic was not that powerful, but his ability to convince and attract society to his cult was. In any case, there is a paradox between the idea of civilization and its opposite. It seems that myth, instead of connecting us to nature, tries to divert us to a distant or artificial state.

There is one last element I would like to bring to this essay: the voice of nature. Mileidy Orozco, a filmmaker from the Emberá ethnic group, says:

After several years of experience, I've come up with several thoughts: the first is to demystify the idea that nature has no voice; I don't believe

²¹ Melatti, Julio Cezar. *Krahó Messianism*. Editora Herder and Editora da Universidade de São Paulo. São Paulo. 1972. p. 72

²² Melatti, Julio Cezar. *Krahó Messianism*. Editora Herder and Editora da Universidade de São Paulo. São Paulo. 1972.

*that, and I don't believe it because the condition lies more with humanity than with the environment. Nature, its landscapes, all its ecosystems have been telling us about the universe of sustainability since the beginning, about an enormous reciprocity. They are telling us that there are connections and relationships founded long before our personal arrival in this universe.*²³

The territories, the rivers, the mountains, the sea, and the beings that inhabit them, are not mere organic acts, nor are they profoundly different from our own essence. There is something they are saying to us, in their own way of speaking, in their own language. It's up to us to decide whether or not we listen to them, whether or not we give them back the voice we took from them by designating them as places of production and extraction. Perhaps now, more than ever, it's important to re-evaluate the role we assign to nature in our lives and in our society. After all, everything we are has not ceased to be nature.

In the interview "El cascabel del chamán es um acelerador de partículas", Viveiros de Castro explains that in the Amazonian perspectivism, all things are human, or at least were human in mythological times. Over time, the humanity of things and animals has dissipated, but a remnant of humanity remains as a potency in animals and natural phenomena:²⁴

Scientific knowledge is epistemologically superior: it dominates. Art is not science and everything is said and done. It is precisely this distinction that doesn't seem to make sense in what I call shamanic

²³ Green, Olowailii; David Hernández Palmar; Laura Huertas Millán; Nelly Kuiru; Pablo Mora; Mileidy Orozco Domicó and Amado Villafaña. "Sovereignties, activisms and audiovisual spiritualities" in *World Records Journal* Vol. 7. 2022

Author's translation. Original: *Después de varios años de experiencia he llegado a varias reflexiones: la primera es desmitificar que la naturaleza no tiene voz; eso es algo que no lo creo, y no lo creo porque la condición está más en la humanidad que en el entorno. La naturaleza, sus paisajes, todos sus ecosistemas nos están hablando desde el principio del universo de una sostenibilidad, de una reciprocidad tremenda. Nos están hablando de que hay unas conexiones y unas relaciones fundadas incluso desde mucho antes de nuestra llegada personal a este universo.*

²⁴ Sztutman, Renato; Silvana Nascimento and Stelio Marras. Interview with Eduardo Viveiros de Castro "El cascabel del chamán es um acelerador de partículas" in *La mirada del jaguar: introducción al perspectivismo amerindio*. Trad. Andrés Bracony. Ed. Tinta Limón. Buenos Aires. 2013

*epistemology, which is an aesthetic epistemology. Or aesthetic-political, insofar as it proceeds by attributing subjectivity or "agency" to so-called things. Perhaps the most obvious material metaphor for this process of subjectivizing the object is a sculpture. What the shaman is doing is more or less like this: carving subjects out of stones, conceptually carving out a human form, in other words, removing from the stone everything that doesn't allow us to see the human "form" it contains.*²⁵

This research is linked to this perspectivist idea of Amerindian cultures, of the fact that there is a humanity of the world, of things, of animals. It is undoubtedly a very different paradigm from scientific thinking, but it is precisely in the inclusion of these aesthetic-political axioms of shamanism that we could achieve a new form of understanding and speculation about the world we inhabit and that inhabits us. Just as we can identify the voice of the river, we can also see something spiritual in it, an inner image that is its own and that is also our own, a constructive, thinking and acting force.

²⁵ Viveiros de Castro, Eduardo. *La mirada del jaguar: introducción al perspectivismo amerindio*. Ed. Tinta Limón. Buenos Aires. 2013 p. 28

Trad. From the author. Original: *Epistemológicamente superior es el conocimiento científico: es él quien manda. El arte no es ciencia y está todo dicho. Es justamente esta distinción la que parece no tener ningún sentido en lo que estoy llamando epistemología chamánica, que es una epistemología estética. O estético-política, en la medida en que ella procede por atribución de subjetividad o "agencia" a las llamadas cosas. Quizás la metáfora material más evidente de este proceso de subjetivación del objeto sea una escultura. Lo que está haciendo el chamán es más o menos eso: esculpiendo sujetos en las piedras, esculpiendo conceptualmente una forma humana, esto es, sustrayendo de la piedra todo aquello que no deja ver la "forma" humana ahí contenida.*

2. Surface: media and Narcissus

2.1 The dream of the rock and Orpheus

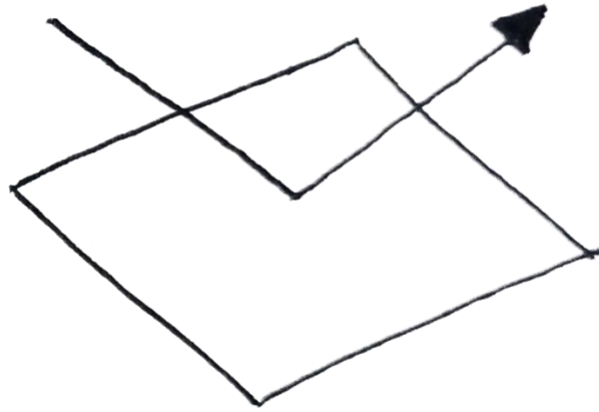


Figure 10. Vector 5: Reflection

The first idea I had for this movie was actually Narcissus. Especially the encounter with Germán Alonso García's object at the Modern Art Museum of Medellín (MAMM) in 2019. The figure of Narcissus looking at his reflection in a box with no space, blocked by the mirror on the surface, generated an immediate idea in me. Myths have a special power over us, they know us well, they have lived our lies many times. As well as a myth, I saw a motive in Narcissus. That myth of Narcissus so often made in art and literature. How could I make this myth? What do I take from the tradition of the myth and how can I interpret it in my own way, add something to an age-old tradition? And also tell something new? Finally, why am I presenting this European myth in this text and not another from indigenous cultures? I don't think this is a random matter. On the contrary, this motif represents the European ideal, and therefore also the Western, modern and civilizing ideal in general. It wouldn't be accurate to assume that the illness behind Narcissus is a European illness, because although it has been very strong in the peoples of the North, it is a deeper drive that resides within all of us. Having to place a critical eye only on the global North, or the misnamed "West", also reaffirms a colonizing epistemology. Modern illness does not come from the cold machines of the North, but from within, from our

own bodies, from the ambition to cross the oceans and reach the top of the mountains. Just like Narcissus, who sees a world in the water and wants to bring it out.

At the time, I wrote a script that was rewritten several times. I tried unsuccessfully to find funding and decided to film without caring about the limitations or, rather, embracing them. I also wanted to learn new ways of filming, simpler than the ones I had already been taught at film school. Can I make a movie this complex on my own? I had to make several aesthetic decisions, many of which I had already considered. But essentially it was to shoot without synchronized sound and in a POV shot. This would allow me to shoot freely, without restrictions on times or locations, without caring about actors or a technical crew. There was only one scene for which I knew I would need a crew, extras and other logistical issues, but with only one scene, it was manageable. From my previous shoots, I got the feeling that the pace of production makes it very difficult to focus creativity, to pay attention to the moment, the circumstances and sudden events. So, by experimenting with this, I could prove to myself that it was possible to make a different kind of cinema by showing myself what the results would be.

I knew I had to give up on the script and I simplified the structure as much as possible to know what images I needed and how to get them. I made some "test images" and then a video montage that would serve as the script. I spent a few weeks just thinking, describing the routes and the dramatic action that was more in the voice than in the images. I had a meeting with a director friend who suggested I try to find a clear goal for the character. And I knew, I am not sure why, that the character was not looking for himself, but for someone else, a friend. Coming to a new creative block, I thought and thought without quite understanding how to solve the film visually, how to make sense of the water. I had seen many representations of Narcissus, both in the arts and in literature, but none of them could fit my search. I had to find my own audiovisual idea to transform the narcissistic motif. And, one Sunday when I was writing, I finally dreamt about the movie, finding the movie inside me.

In the dream I was walking along the bank of a river with rocks. I was wandering around the most beautiful waterfalls and then I came across a group of people gathered around a rock the size of a person. They said they heard a voice from inside the rock. I heard the

voice too. It was a familiar voice, of someone close to me, who spoke to me from inside the rock. I didn't know how they had got there or how to get them out. They didn't seem worried about getting out either. They said it was very hot because of the lack of air, but at the same time the inner surface of the rock kept them cool. The dream continued to an adventure, and I finally woke up and went straight to the computer. I understood something: Narcissus was supposed to turn into water, and his *friend* was supposed to turn into a rock. The rock and the river are two inseparable things, one is the form of the other, they build and maintain each other. And I also thought of Echo, the other character in Ovid's myth, who fell in love with Narcissus, but could only repeat the words spoken to her.²⁶ In the myth, Echo metamorphosed into the echo of the mountains. Rocks are also a mirror, not a mirror of light like water, but a mirror in which sounds are reflected. I saw everything fit together conceptually and thanked the dreams for freeing me from the blockage. Sometimes you just need to be awake during your dreams.

It's funny, I thought, that I wanted to make a movie from the motif of Narcissus and I ended up making a movie that looks like Orpheus. Orpheus must go to the underworld in search of his girlfriend, and he can't look back. And these are the aesthetic decisions I had already made, to draw a path that was always forward, always downwards, like the river. And this happened by chance. But now I'm thinking about Jean Cocteau and his two films *Orpheus* (*Orphée*, 1950) and *The Testament of Orpheus* (*Le Testament d'Orphée ou ne me demandez pas pourquoi !*, 1960) which, as well as being about Orpheus, reflect on Cocteau's own life and also on the reflection, the depth of the mirror and self-love. Could it be that Cocteau made a narcissistic Orpheus and I did an orphic Narcissus?

²⁶ Ovid. *Metamorphosis*. Translated by Consuelo Álvarez and Rosa Ma. Iglesias. Editorial Cátedra. Madrid. 2003.



Figure 11. Dir. Jean Cocteau. *Orphée* [frame].1950

In this chapter the reader will encounter a review of the representation of Narcissus in various media. Starting with an explanation of the myth of Narcissus from some literary and psychoanalytical perspectives, moving on to an idea of Narcissus' relationship with a medial or poetic fact, and finally putting forward the idea of the river and its inevitably deep surface. This chapter could be thought of as a state of the art (artistic rather than theoretical), which already covers some of the conceptual material that we will discuss in the following chapters. The idea is to have an insight into the tradition of the mirror, to understand how to break it.

2.2 The motif of Narcissus

The myth of Narcissus contains many semiotic elements that go far beyond an interpretation of narcissism or love/obsession with one's own image. The figure of Narcissus is linked to the reflection, to an equal but immaterial apparition that struggles

for its connection to the living world. Narcissus is in struggle with art: at the heart of this myth is the image and the obsession with the immaterial. Cuban writer Virgilio López Lemus speculates in his book *Narcissus: las aguas y el espejo*:

The image in the mirror of the waters is the great cosmic metaphor. Narcissus does not worship himself, but eternity. The desire to be eternal gives the image a song. [...] Narcissus, the poet, in exchange for God, seeks to make the ephemeral eternal. In this way, the poetic act functions as the inverse of Creation. [...]. The very small act of man before his image, that is, poetry, participates in this destiny, in this joke, in this journey to the Horizon, an infinite, impossible journey, the journey of poetry. The eternal journey of life, we are eternal like life, we are poetry, what we capture from the cosmos is poetry, be it science, number, alchemy, be it applied as a technique, be it paxis or entelechy, practice, technique or contemplation. There is being, and that being is for poetry. From it. Poetry is the instant in which God made himself an image and created the universe. Uni-verse. One. Verb.²⁷

As López Lemus explains, Narcissus confronts the image, not just his image, but the world of re-production itself. But not only Narcissus is the poet-artist, whose bosom is confronted with the obsession of creation. This myth is directly about the medium and is an ancient reflection on media. This is my central hypothesis about the myth of Narcissus, firstly that he wants to dominate the mediums and the image. But also, that the world is a reflection for Narcissus, that the surface of the water is an inhabitable world, but immaterial, profound despite its superficiality. Narcissus wants to reach the world. That's

²⁷ López Lemus, Virgilio (2007) *Narciso, las aguas y el espejo: Una especulación sobre la poesía*.

Ediciones Unión. La Habana. p. 41

Translated by the author. Original: *La imagen en el espejo de las aguas es la gran metáfora cósmica. Narciso no se adora a sí mismo sino a la eternidad. El deseo de ser eterno imprime a la imagen una canción. [...] Narciso, el poeta, a cambio de Dios, pretende hacer eterno lo efímero. De ese modo, el acto poético acciona a la inversa de la Creación. [...]. El pequeñísimo acto del hombre ante su imagen, es decir, la poesía, participa de ese destino, de esa anécdota, de ese viaje hacia el Horizonte, viaje infinito, imposible, el viaje de la poesía. El viaje eterno de la vida, somos eternos en cuanto vida, somos la poesía, lo que captamos del cosmos es poesía, llámese ciencia, número, alquimia, aplíquese como técnica, sea paxis o entelequia, práctica, técnica o contemplación. Hay ser, y ese se es para la poesía. De ella. La poesía es el instante en que Dios se hizo imagen y creó el universo. Uni-verso. Uno. Verbo.*

why, when we look at art, we see the ever-watchful eye of Narcissus behind it. Ultimately, Narcissus loses track of the real world, everything becomes a mirage.

Ovid's myth, "Narcissus and Echo", in *The Metamorphoses* is about a beautiful young man with whom all young people fall in love, but who falls in love with no one. The oracle had already warned his mother, the nymph Liriope, that her son would grow old only <<If he doesn't get to know himself>>. When he finds his reflection in the lake, Narcissus is mesmerized by what is on the other side of the water, but the surface separates him from this other perfect being. Echo, a nymph, falls in love with Narcissus, but can only repeat the last words spoken by others. Narcissus dies in love with his reflection and turns into a flower. And Echo dies in love with Narcissus and becomes the echo of the mountains.



Figure 12. Germán Alonso García. Del-ego fue-ego o El espejismo de Narciso [Photograph of the wood and glass sculpture]. 1989. Museo de Arte Moderno de Medellín MAMM.

The best-known work of Narcissus in pictorial art is Michelangelo Merisi da Caravaggio's work from the late 16th century. Two recent reproductions of this work are particularly interesting. One is by Colombian artist Germán Alonso García and is part of the collection

of the Museo de Arte Moderno de Medellín (MAMM). García used a wooden box and copied part of Caravaggio's work on the underside of the lid, only Narcissus out of the water. Inside the box he placed a mirror which gives the object a certain depth and naturally shows the reflection of the painting. The outside of the box is decorated with narcissus flowers. García's object puts the size of the box in tension with the surface of the mirror, which doesn't allow us to perceive the true depth of the object. What stands out, then, is the mirror that blocks the box from its interior space. Perhaps the box is also an analogy of Narcissus' inability to free himself from the reflection that binds him. And the small object, as if it were a small wooden jewel, also speaks of an obsession with the material and with wanting to contain a great strength such as that of the most beautiful man. In a later chapter I will return in detail to the dimension that this box projects, which shows the surface and hides the depth.

Another recent work that imitates Caravaggio is Vik Muniz's *Pictures of Garbagge* series, in which famous images from art history are recreated with garbage and then photographed. The image of Narcissus, in particular, can also be associated with his text *Mirrors or 'How to Steal a Masterpiece'*. Muniz explains that the glass that protects the works functions as mirrors that show the viewer their own image:

Both mirrors and museums are not mere subjects, they are subjectivity itself. And the same neurotic instinct that leads us to photograph mirrors (the mirror can tell you how you are, but never what you are), leads us, on a social scale, to photograph museums: The prison of this reflexive convolution (the same one that killed Narcissus), the tricky metamorphosis of the viewer into a voyeur²⁸ (Muniz, 1993).

²⁸ Muniz, Vik. "Mirrors or 'How to Steal a Masterpiece'" in *Blind Spot*, Vol. II. 1993.

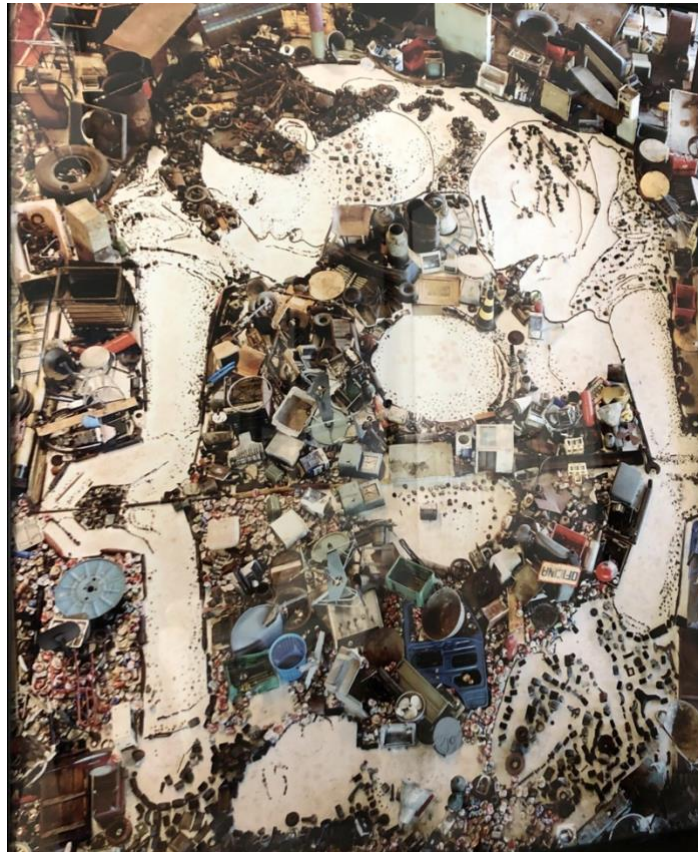


Figure 13. Vik Muniz. "Narcissus" from the Garbage Portraits series. [Photograph]

Muniz is talking specifically about the Mona Lisa, which makes people to take photographs every day. For Muniz, the object of the photograph is not the painting but the recreation of that fraction in which the viewer accesses the work of art and, through photography, tries to appropriate it and reflect that unique moment of perception of the work. This photograph returns the viewer to the center of the museum: it is not the art that is exhibited but the viewers themselves. In his photographic act, Muniz builds Narcissus out of garbage and then photographs him, giving the viewer a representation of him, taking advantage of photography as a medium or tool for art and museology. Muniz says: "Narcissus knew that he could never have himself. But if he'd a photograph, maybe his tragedy would have been avoided."²⁹

In the performance-installation *Illusions Vol. 1: Narcissus and Echo*, Portuguese artist Grada Kilomba uses the myth of Narcissus to criticize the marginality of the image of

²⁹ Ibid.

black people, who are surrounded by an ideal of perfection that comes from the white ideal. Kilomba's adaptation is relatively faithful to Ovid's myth, to which she adds an epilogue in which she reflects on these racial issues by reinterpreting the Greek myth. There are two versions of this work, one with the artist present and the other with a video replacing her. On one video channel the actors appear and on the other the artist simultaneously reads the text.

For Kilomba, the figure of Narcissus represents people who don't know the outside world, and Echo represents those who, knowing it, prefer to ignore it, or not know it. In the end, the artist invites us to rethink myths and the way in which the same stories are repeated throughout time: "I was invited to speak here today. But I feel there's nothing new I can say. I often feel that everything has already been said. I feel like we already know everything, but we tend to forget."³⁰



Figure 14. Photo by: Grada Kilomba. *Ilusiones*, vol. I: *Narciso y Eco* [Photograph of the two-channel video installation]. 2017.

2.3 The video mirror

³⁰ Grada Kilomba. *Ilusiones*, vol. I: *Narciso y Eco* [Two-channel video installation]. 2017.

For Rosalind Krauss, unlike other technical reproductions, video is the medium that best stages narcissism due to its ability to return an image instantaneously, which allowed many artists of the 1970s and 1980s to use it as a mirror:

*Unlike other visual arts, video is capable of recording and transmitting at the same time - producing instant feedback. The body is therefore centered between two machines that are the opening and closing of a parenthesis. The first is the camera; the second is the monitor, which reprojects the performer's image with the immediacy of a mirror.*³¹

Based on Lacanian precepts, Kraus concludes that what characterizes narcissism is a perpetual frustration with what is presented in the mirror, and which becomes unattainable. One of the works Krauss analyzes is Peter Campus' installation, *Dor*. In it, the subject can only see their image on the wall when they enter or leave the room, forcing them to twist or move to see themselves. As in the myth of Narcissus, the self-image is elusive, it has to be searched for by the body and can never be fully achieved.

³¹ Kraus, Rosalind. "Video: The Aesthetics of Narcissism", in *October*, Vol. 1 (Spring, 1976). Pp. 50-64. The MIT Press. P. 52

Author's translation. Original: *Unlike the other visual arts, video is capable of recording and transmitting at the same time -producing instant feedback. The body is therefore as it were centered between two machines that are the opening and closing of a parenthesis. The first of these is the camera; the second is the monitor, which re-projects the performer's image with the immediacy of a mirror.*



Figure 15. Photograph by: Peter Campus. Dor. 1975. [Photograph of closed-circuit video installation].

The other example is that of one of the most innovative artists in the application of machine learning, Mario Klingelmann. In his work *Uncanny Mirror*, a computer equipped with a GAN (*Generative Adversarial Network*) algorithm tries to create an image like that of the viewer in front of the screen. To create this image, the algorithm learns from the images of other viewers who have also been in front of it. It then combines the viewer in front of the mirror with the images of the previous viewers. Unlike video mirrors, this mirror is not a filter, but a new interpretation of how one look can be interpreted by the machine.



Figure 16. Mario Klingelmann. Uncanny Mirror [Installation photograph]. 2020.

2.4 The depth of the surface

Although I haven't seen the works in the previous subsection, I understand the importance of having seen a work with one's own eyes, at a unique moment and from a unique perspective. And how this act of expectation is not comparable to the mere idea of the work, intangible or poorly photographed. In 2017 I went to the Yves Klein retrospective at the Museo Universitario de Arte Contemporánea MUAC in Mexico, the first retrospective of this artist in Latin America. At the entrance to the main room, there was a blue pool made of pure pigment. I was immediately mesmerized. I had never seen anything as blue. I wanted to jump in, to swim in the pigment, to become blue myself. Klein's surface has no shape, but in this case it also has no volume. Perhaps this is Klein's invitation to himself in relation to his art, to throw himself in there and make himself form, just blue volume, like his sculptures. In the hypnosis of this work, I see the spell of Narcissus who is hypnotized by water. And if I hadn't seen this work in person, I wouldn't have understood the marvelous charm of the installation.



Figure 17. Yves Klein - Pigment bleu sec, 1957 [Photograph from the installation Museo Universitario de Arte Contemporánea, Mexico, 2017]

When Narcissus is in the lake, he sees a world below that is identical to the one outside. Everything below is the same as it is above. When he touches the water, his reflection fades and he can't reach it. The dimension of water is different to what he sees. The depth is different to the surface. Water is a mystical enchantment, a hypnosis: the shiny surface and the depth that swallows it up.

The short film *Manhã de Santo António* (2012), by João Pedro Rodrigues, shows a group of young people on the morning after the feast of St. Anthony in Lisbon. The young people walk like sleepwalkers or zombies through the almost deserted city streets. They vomit, crash into cars, fall over, hesitate, but at no point are they agents, they seem absolutely hypnotized. At one point in the film, they start looking at their cell phones, as if they were receiving parallel messages. One girl walks with her cell phone screen off, seeing only her reflection on it, as if it was a mirror. She then walks towards the water and dives into it, trying to save only her cell phone, but in the end it sinks too. Beyond the posture of Krauss' video feedback, I believe that the figure of Narcissus is on the screen, on the shiny, glaring surface. Narcissus is not only a poet, but he has also been absorbed by the artifact, be it a camera, a screen, the reflection of the river or poetry. The

artefact promises to fulfill a function that ends up mesmerizing in a superficial world whose depths are different. This utterly changes not only our relationship with the imaginary world but also to the real world itself.



Figure 18. Dir. João Pedro Rodrigues. 2012. *St. Anthony's Morning* [Photogram]. Le Fresnoy.

Finally, I'd like to highlight one last image or its disappearance, the *Narciso* video of vanishing photographs by Colombian artist Óscar Muñoz. The artist manages to print his face on the surface of water. Two images appear, the face on the surface and the shadow on the bottom. As the water recedes, the two images approach each other and, before merging, fade away. Muñoz questions memory, the inability to know ourselves. The dissonant disconnection of the eternal loss of the instant. Finally, it is impossible to reconcile depth and surface.



Figure 19. Oscar Muñoz, *Narcissus* [still from video], 2002.

3. Depth: Illness and Cure

The notion of *illness* among the indigenous peoples of the Amazon cannot be explained through the etymologies and definitions of the Portuguese *doença*, which comes from pain, or Spanish *enfermedad*, which is the negation of firmness. Beyond a medical definition, or a clinical picture, illness is a way in which we relate to our own bodies and to the world in general.

I'm going to use this definition from Delvair Montagner in his book *A Morada das Almas, Representações das Doenças e das Terapêuticas entre os Marúbo*: "Illness comes from the sky, the earth, ethnic groups and water, each with its own characteristics. Someone falls ill because they deliberately or unintentionally break social or moral rules, becoming fragile and vulnerable to the invasion of evil spirits, who symbolize illness, which kidnaps the Soul of the Heart, taking its dwelling place to turn it into a spirit of the same quality."³²

In this view, the body is a magical entity that creates balance. Illness is an integral part of our lives, of our ways of being, both in a fully biological sense and also in a psychosocial sense. Illness cannot be established in clinical terms, nor expressed with a particular symptomatology, and it cannot even be separated from us. We are essentially sick, it's part of human nature.

The shape that expresses the depth of the river, as in Germán Alonso's box, is expressed as a cube or inverted pyramid (Vector 6). When we project the river in three spatial dimensions, the novelty acquired is the relationship between the river and its two banks, but the most relevant distinction ends up being the top, which is the free surface, as opposed to the interior, which is the depth where the river meets the ground. Here an

³² Montagner, Delvair. The Abode of Souls: Representation of Illness and Therapies among the Marúbo. Emílio Goeldi Museum of Pará. Belem de Pará. 1996. Author's translation. Original: *A doença procede do céu, da terra, das etnias e da água, cada uma tendo características próprias. Alguém adoece porque provoca uma rutura nas regras sociais ou morais de modo deliberado ou não, tornando-se frágil e vulnerável à invasão dos espíritos malignos, que simbolizam a doença, que rapta a Alma do Coração, levando a sua morada para torná-la também um espírito da mesma qualidade.*

analogy is formed with the rock. The river shapes the mountain, and the mountain shapes the river, they are analogous things, as Penone says. One and the other have the same shape.

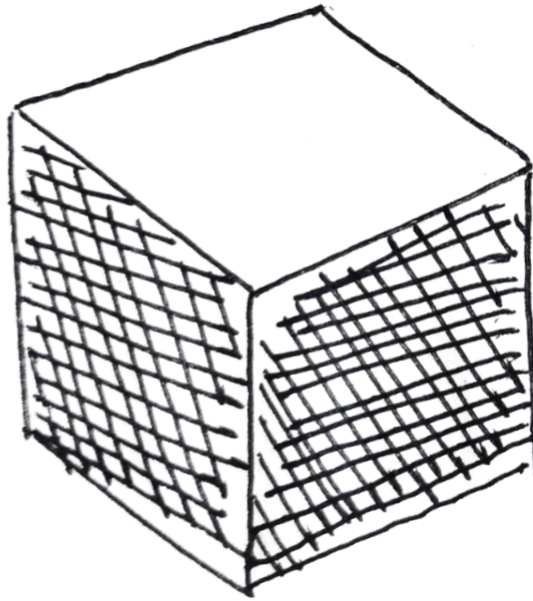


Figure 20. Vector 6: Depth

This chapter, rather than being fluid with the others, needs to be seen from the different faces of the polygon, which in the end converges in a failed attempt to reaffirm the unity of the universe and the correspondence of its worlds. It is in this chapter that the elements of the film are problematized, that the question of the politics of this spiritual ecology is raised, and that discursive and emotional solutions are proposed for dealing with the world of the future.

3.1 The illness of waters

We might think that nature still exists among us, that virgin nature without human intervention. As if we weren't part of nature. But is there a line that separates the artificial from the natural? What divides the living world from the created world? The human world from the non-human world? In this conception, an idea limits us. We think, for example,

of the Amazon rainforest or that of the Congo, the last frontier of the wild, the great reserve of the world's biodiversity, the great museum of the world's natural history, whose humid and stable climate has preserved the lives of so many animals of all times. But new scientific "discoveries"³³ have shown that the Amazon River basin has been home to great cities and civilizations³⁴³⁵, which have transformed the forest landscape over time, in a relationship of active exploitation.³⁶

Before traveling to Portugal, I made a sudden trip to Putumayo, the beginning of the Amazon in the Andean mountains in the south of Colombia. I needed to reconnect with nature after almost two years of quarantine and I wanted to get to know a bit of this great forest. I needed to get away from work and films, so I chose to visit a place called *El Fin del Mundo*. It seemed that what I needed was to get away from everything I knew, but when I arrived at the destination, I found a film crew who had gone to the same place to make some tourist videos. My disappointment was immense. I was invited to take a tour of the waterfalls with them, but I couldn't keep calm. Every ten steps, the crew wanted to stop and film. I ended up asking the guide for directions so that I could continue my own path. As expected, I turned the wrong way and ended up in a place that no longer looked like indigenous land. I found a sawmill in the middle of the forest, and even worse, the trees were all eucalyptus, highly invasive species. Thinking I was on the right track, I continued the dangerous adventure and, on my return, when I met up with the people who had taken me in, no one believed what I was telling them. <<A sawmill? In the middle of the mountain? Eucalyptus trees?>> But I think they took me very seriously, after all it is them, the indigenous people, who protect the ancient trees that still stand in this region. There is hardly any virgin forests in this part of the Amazon. The forest was completely cut down in the 20th century and is only now managing to recover through the enormous

³³ I call this word into question because of the very limitation of expression in the Portuguese language, which preserves this controversial colonial logic. I would prefer to use the Spanish word "hallazgo" or the English word "findings" instead of "descubrimiento" or "discovery".

³⁴ Rostain, Stéphen, et al. "Two Thousand Years of garden urbanism in the Upper Amazon." *Science*, vol. 383, no. 6679, Jan. 12, 2024, pp. 183-189,

³⁵ Prümers, Heiko, et al. "Lidar reveals pre-Hispanic low-density urbanism in the Bolivian amazon." *Nature*, vol. 606, no. 7913, 25 May 2022, pp. 325-328,

³⁶ Another word that should mean "explotación/explotation" instead of "exploración/exploration".

resilience that our ecosystems have, even though they have suffered irreparable damage to the history and biodiversity that existed there. An incalculable amount of damage.

I often go hiking in the mountains, often alone, and I often get lost. And whenever I get lost, I end up seeing realities hidden by the illusion of nature built around it. On a recent trip to Japan, for example, I failed to read a sign and ended up in a mine right next to a forest reserve. Nature turns out to be the best camouflage for its own torment. A facade of leaves to hide its own destruction. I also saw a wonderful waterfall there, with water falling harmoniously in front of a rock wall. I had to get closer and saw that the rocks were fake, just a concrete dam in the shape of rocks.

I've also been to the International Tagus River Park without knowing that a few kilometers downstream there is one of the worst eutrophication problems in the country, caused by the José Maria Oriol - Alcantara II dam and Spain's unfair manipulation of water sources. It's a problem that exists in many places in the world, where the upstream country doesn't release the water fairly, just as it does in the waters that reach Iran from Afghanistan; in the waters of the Tigris and Euphrates, the pillars of civilization, which are seriously threatened by Syria and Turkey; and also in the River Nile, where *the Great Renaissance Dam* is being built in Ethiopia, which seriously threatens the water supply for Sudan and Egypt, whose agriculture and drinking water depend on this great river. The world's political borders affect our rivers, which become neglected, polluted, dry and sad as they pass through these invisible lines.

How many rivers have dried up when dams were built? This was also the case in Colombia, during the construction of the Hidroituango dam (Ituango, Antioquia), the country's largest power generation project. To speed up the filling of the dam, the engineers decided to close two of the three diversion tunnels that carried water from the Cauca River. Heavy rains caused a landslide, and the third tunnel got clogged. The dam had not yet been completed and began to fill uncontrollably. All the people living downstream were at risk of disappearing in the event of a dam break, which could have generated a huge tsunami. In the following weeks, the great Cauca River, one of the country's biggest, ran completely dry until it was decided to let the water pass through the engine room. So far, the crisis has been brought under control, but this could have been

the biggest catastrophe the country has ever seen. It was still devastating for life in the river, the people living downstream, etc. Not even mentioning the huge extra costs for the project, nor the previous social problems, which include the forced displacement of indigenous Emberá communities, and the possible existence of mass graves made by paramilitaries in the flooded zones, whose bodies will never be returned to their families. It's hard to imagine the level of environmental and social crisis caused by the generation of 2,400 MW. ³⁷



Figure 21. Filling of the Hidrotituango Dam in the movie *No te conozcas*

Whenever it becomes necessary, we ask ourselves: isn't this the future? If modernity was based on technological and social progress as the vanishing point of all its thinking, today we see how that idealism collapses under its own weight, how exploitation thinking sees a limit on the horizon, and that limit is here and now. Perhaps the future is today, because there is no progress afterwards. And this is deeply pessimistic thinking, but at its heart it is also optimistic. Because to solve the environmental problems of modernity, we're going to have to reformulate the system and the course of history itself.

³⁷ December 4, 2020. *The road from Hidrotituango to emergency*. [journal article]. El Espectador. <https://www.elespectador.com/economia/el-camino-que-transito-hidrotituango-hacia-la-emergencia-article/>

I hesitated for a long time about whether to travel back to Colombia to film on the rivers that I know and that make up my personal cartography. Initially, I wanted to film this movie on the Chinchiná River, which rises in the Cumanday (officially known as the Nevado del Ruiz) and flows into the Cauca, finally getting stuck in the Hidroituango dam. And I hesitated for many reasons, firstly because I wanted to film in a relaxed way, seeing and understanding the images, rather than making pre-constructed images. And going to Colombia would force me to have everything prepared, to do a whole shoot in a month or so. But well, let's say that I could find an excuse and pay for the flight, and that the incursion of the Cauca river landscape made up for the carbon footprint. But I had two important conclusions.

The first is that Colombia bears little resemblance to the future of water. It's an extremely humid place, one of the countries in the world with the highest levels of rainfall per year. My country's problems are not droughts but excess rainfall (except during the *El Niño* phenomenon). On the contrary, the rivers of the Iberian Peninsula have been much more regulated by infrastructure and are constantly threatened by low water levels, sedimentation and global warming. So I thought I'd take the risk of talking to these rivers, which are much more ill, or at least have been ill for much longer, and try to understand and engage in a dialog with this foreign state, and to put this novelty into the film as well. The film doesn't feature the wild force of the Colombian waterfalls rushing down the mountain range, but rather the sad calm of the Mondego, the Tagus, the River Liz and the levada da Rocha Vermelha.

The second conclusion has to do with a dream I had on that trip to Putumayo I mentioned earlier. After getting lost in the sawmill, I met up again with my guide and the film crew at the agreed place. They were going slowly, but they weren't enjoying it. I took a dip in this river, which had some nice pools, and we went to another waterfall, and then we were supposed to go to another one. When they started taking photos and videos again, I asked the guide to draw a path so that we could get to the next point: the *El Ojo de Dios* waterfall. I arrived alone, well ahead of the team and stayed there calmly. It's a waterfall that enters through a hole in a huge rock. I didn't dive in, but I felt a special energy and decided to sleep on the ground in front of the waterfall. And then I dreamt of a woman's melodious voice, but it was strong, full of anger and very powerful. I listened to it for a

long time until I woke up, and I had the impression that I hadn't dreamt, but had actually heard the voice. Afterwards, I spoke to someone who lives in the area, who told me with surprise that she had also heard a woman singing in that place. Clearly this place is not the eye of a god, but perhaps the mouth of a goddess or a muse. But why was the voice so angry? The anger was mine, my anger at having lived in a Latin American metropolis for two years during the pandemic, at fleeing the extreme labor exploitation that I had imposed on myself, and at fleeing all of that to end up with a film crew filming tourist commercials. The river spoke clearly to me, sang in my eardrum and used my words to say what was needed. Maybe, I thought, it's not about the river, all rivers are brothers, but I'll only be able to hear their voices through me.

In a few months I'm going back to Colombia to visit my family and have the premiere of my first film, *La última película* (*The Last Film on Earth*, 2023). And I want to take the opportunity to go back to *El Ojo de Dios* and capture the voice of his muse as well as his image. I don't know if he'll want to be recorded, maybe he'll run away from the audio recorder, but I'll ask respectfully and I'll make my intentions clear. I'll bring him a rock from the Tagus River as a gift.³⁸

³⁸ Edit: I went to Putumayo, offered the rock (after sterilization) and asked the voice of the river for permission to record it. When I started listening, I saw that from a certain angle inside the rock you can hear a series of rhythmic flows that have an almost punk sound, harmonized by the strong voice of the river. I recorded this sound with a stereo recorder, but I still haven't managed to extract the rhythms of the music. It remains to be seen whether the river has allowed me to capture its *utu*.



Figure 22. Photograph of "The Eye of God"

In his book *Futuro ancestral*, indigenous thinker Ailton Krenak refers to the Watu River, the name given to the Doce River by the Krenak ethnic group, after the dam collapse in Mariana, one of the worst environmental disasters in Brazil's history:

Today, the Watu's body is full of mercury and a huge list of poisons from mining, and the river, tired, has plunged into itself. The material that flows down the channel is not river, what the great chief Seattle called vomit. The real water, which rises in the mountains, is now flowing under a slab of rock that geologists have found to be a formation of granite and other very solid materials. On top of this platform there are three layers of soil: the river has plunged deep. It continues to flow into the Atlantic Ocean, but no longer wants to expose itself to the constant abuse of this absurd thinking that bodies exist to be exploited. He refuses to suffer this kind of bullying and, from the offense, disappears. Then people come and complain that they are

*running out of water, that they can no longer promote development and progress, because humans, with their stupid economies, need a lot of water for hydroelectric dams, power stations, industries, farming and agribusiness - and they are always making some complaint.*³⁹

It's possible that in the Krenak's view, the river has decided to flee from mistreatment. This way of thinking, which gives agency and a voice to rivers and ecosystems, can have major political repercussions, as is already happening in countries like New Zealand, where the Maori people have managed to get the Whanganui River recognized as a legal entity, making it the first river in the world to obtain this type of status.⁴⁰ In Colombia, the Atrato River, in the department of Chocó, was also granted legal person status in order to be protected from mining and thus safeguard the well-being of the ethnic communities that inhabit the territory. *Sentence T-622 of 2016*, by the Constitutional Court, which recognizes the environmental rights of the Atrato River and its communities, in line with the ecological values of the *1991 Constitution*, has served as a legal precedent to also protect the rivers of the department of Tolima, and to require Empresas Publicas de Medellín (EPM) to take care of the Cauca River after the Hidroituango crisis. Even more impressive is the fact that the Jurisdicción Especial para la Paz (JEP)⁴¹, declared the

³⁹ Krenak, Ailton. *Ancestral Future*. Researched and organized by Rita Carelli. Companhia das Letras. São Paulo. 2022. p. 23 Author's translation. Original: *Hoje, o corpo do Watu está cheio de mercúrio e de uma lista imensa de venenos oriundos da mineração, e o rio, cansado, mergulhou em si. Aquele material que desce na calha não é rio, o que o grande chefe Seattle chamou de vômito. A água de verdade, que nasce nas montanhas, agora está correndo debaixo de uma laje de pedra que os geólogos constataram ser uma formação de granito e outros materiais muito sólidos. Em cima dessa plataforma tem três camadas de solo: o rio mergulhou fundo. Ele continua seguindo para o oceano Atlântico, mas não que mais se expor ao abuso constante desse pensamento absurdo que acha que os corpos existem para serem explorados. Ele se nega a sofrer esse tipo de bullying e, da ofensa, desaparece. Aí as pessoas vêm reclamar que estão ficando sem água, que não podem mais promover o desenvolvimento e o progresso, pois os humanos, com suas economias estúpidas, precisam de muita água para hidrelétricas, usinas, indústrias, agropecuária e agronegócio — e estão sempre fazendo alguma reclamação.*

⁴⁰ New Zeland Legislation. *Te Awa Tupua (Whanganui River Claims Settlement) Act 2017* [<https://www.legislation.govt.nz/act/public/2017/0007/latest/whole.html>]

⁴¹ A body created after the peace process between the Colombian government and the FARC (Fuerzas Armadas Revolucionarias de Colombia) to prosecute crimes committed during the armed conflict.

Cauca River a victim of the armed conflict because of the bodies dumped on it by paramilitaries between 2000 and 2004, illegal mining and the dumping of substances derived from the production of narcotics.⁴² Although we are a long way from giving rivers the rights they deserve, their introduction into the legal framework is a first step into hearing their cries and trying to soothe their ill bodies. Decontaminating rivers will be one of the great efforts of this century, on which our very survival will also depend.

3.2 The illness of mirrors

We live in a time of not only environmental crisis, but also human crisis. This is not new to anyone. The same extractive system that abuses rivers also abuses our human bodies. We're seeing how supposedly free people have become slaves to their jobs and can't even pay rent. The cities that were supposed to bring people together have only pushed us apart, giving each person a small screen where they can connect to an apparently larger and freer world, built exclusively by our desires: the Internet. Social interaction has been virtualized and happiness has been replaced by pills. The fantasy of neoliberalism has given us the illusion of freedom, while caging us in an infinite mirror.

Am I a narcissist? Yes, I think so. I think it has to do with the illness of our time. I say this with a heaviness in my spirit, with the sour work of constant evaluation, which is a narcissistic attitude to dealing with the perception of others. Within psychoanalysis there are various theories that explain the symptomatology of the narcissistic person, whose relationships are mediated by envy, frustration, fury, low self-esteem, a constant need for external validation, extreme ambition, sexual exacerbation, difficulty in establishing emotional relationships, a lack of a sense of gratitude, etc. etc.⁴³ But as has already been said, the approach of the myth is not exclusive to the narcissistic idea of self-love, nor to clinical narcissism. On the contrary, the motif of Narcissus has served as a metaphor in

⁴² Special Jurisdiction for Peace. Communiqué 080. *La JEP accredits the Cauca River as a victim in Case 05*. 2023 [<https://www.jep.gov.co/Sala-de-Prensa/Paginas/-la-jep-acredita-como-victima-al-rio-cauca-en-el-caso-05.aspx>]

⁴³ Cavalcanti, Raissa. *The myth of Narcissus: The Hero of Consciousness*. Cultrix Publishing House. São Paulo. 1992

these disciplines. Nevertheless, I have been called by this movie to reflect on myself. And look, reader, what a good word: reflect.

This film is supposed to be a mirror for the viewer and not a self-portrait of the director, as Dürer did in his time, who in addition to painting his own portrait, put his face on the image of Christ in 1499. In this act, the artist reveals himself as a true creator, just as God is a creator. And there, again, we see the figure of the poet-narcissus, of the infinite will to be the creative verb of the universe. But this isn't the reason why I'm trying to find my reflection. It's not for my self-realization to be a creator-god. I associate it with my romantic conception of art, and my constant need to create myself first before creating the artistic work. I don't make movies to grow inwardly, nor do I make myself a better person by making movies. But life and movies get mixed. Movies have taken me to the top of the mountain and the bottom of rivers, and when I try to breathe, I ask again: <<where am I going?>> There are no answers, only nothingness. And then you write a script, and any contradiction inside you is trying to get out and it wouldn't be right to repress it. We are always changing, always growing, just like in the idea "cinema-is-waterfall". And in this subchapter, I need to talk a bit about my psyche, this is not a moment of catharsis or confection, nor an exculpation, but rather an understanding of who I am, a scar that coexists with this film, with this dissertation and with this moment in my life. And finally, a first test for the mirror film, because if I can see my reflection on it, perhaps the viewer will also be able to see their reflection.

I'm making this film far from the mountains where I grew up. In an unknown land, facing every day being a migrant, dealing with homesickness, mediating my speech through translation and having to face the social, political, natural and economic wear and tear of this country and the entire continent. However, I also question my life a lot, the decisions I have made and the paths that have appeared. I also dedicate this thesis to my friends who have taught me so much in my sentimental and emotional formation. I come from an austere land with few signs of affection —more similar to Portugal than the rest of Latin America— and so it was in my family where serious things were always said as jokes. Women have been my great support in this fight for love, first my mother and my sisters, and then those I have met along the way: Pamela, Daniela, Sara, Ana, Juanita, Laura, Mariana... And being here, so far away, I can see how —often unintentionally—

I've hurt some of their hearts. But their affection is intact. After a year here, I visited one of these friends, and a month in her company cured my anger, my insecurities that were seriously messing with my anxiety and self-esteem. And that, and that alone, is why this movie about Narcissus has become an Orphean movie. Because the cure for this narcissism is affection, the search to take care of ourselves. Maybe it's also the cure we need as a society and with our nature. How simple it sounds! It's the lesson of the New Testament: "Love one another." It is such a simple conclusion, such a basic lesson, and yet so difficult to learn.

As in the myth of Ovid, Narcissus is instructed not to know himself or to dive too deep. But unlike the myth, in my film, Narcissus goes to the bottom, dives so deep that it is no longer possible to dive any further, and finally meets his friend, not on a material plane, but on an eternal plane, in the same temporality as the waters that crash against the rocks forming great cliffs. There, they are two and the same: the essence of the world. Each a reflection of the other, sharing existence far beyond their personas. They are lost in that reflection, in that shining, wise screen that is our dreams.

3.3 The illness of dreams

A large part of this dissertation has to do with my own dreams, it is a naive attempt to dream about the myths, or to try to relive them in myself. But also, to think inside dreams, to see the movie brought to me by my body, and to include this in the creative process without understanding a semiotic logic of the subject, but an emotional and sensory state that runs through my head.

In her thesis *O Desejo dos Outros: Uma Etnografia do Sonho Yanomami*, anthropologist Hanna Limulja asks some shamans from the Yanomami culture to tell her their dreams, and they respond with myths, and when she asks about the myths they respond with dreams. For these shamans, dreams and myths are a single continuum, and it is during dreams (day and night dreams) that they are able to see the details of the myths, and they even dream in order to get to know the myths better. However, Limulja points out the difference between how Lévi-Strauss interprets myths and Freud interprets dreams: Freud identifies stable symbols, while Lévi-Strauss identifies contextualized symbols that vary

between people and cultures. Limulja also looks at how the latter arrived at the interpretation of myths through Freudian logic and concludes: "My intention, however, was not to point out how much Lévi-Strauss owes to Freud, but rather to demonstrate that if such close methods of analysis could be used to understand, within each approach, the dream and the myth (...), it is because they basically looked at things of the same nature and operated under the same logic."⁴⁴ Lilmuja also argues that psychoanalysis has given dreams a scientific and Western logic:

We, on the other hand, by moving dreams outside of scientific thinking, place them at two poles: either we relegate them to common sense and the generic interpretations of dream keys, easily found in books on the newsstand; or we hand them over, in a closed room with indirect light, to the scrutiny of a psychoanalyst. At this point we can't help but recognize that psychoanalysis was the first, if not the only, serious attempt to give dreams a scientific character. It is as if, in a sense, the dream within Western thought had been left in its wild state, abandoned to the penumbra of oblivion.

*Recognizing that we don't explore our dreams and don't take advantage of them to compose what we call scientific thought, we return to what Kopenawa reaffirms countless times: white people don't know how to dream, that's why they can't see things as they really are.*⁴⁵

For Yanomami thinker Davi Kopenawa, famous for his book *A Queda do Céu*, written with Albert Bruce, white people are so busy with their daytime lives that at night they can only sleep soundly: "White people, when they sleep, must only see their wives, their

⁴⁴ Lilmulje, Hanna Cibeles Lins Rocha. *The desires of others: an ethnography of Yanomami dreams* (Pya Ú - Toototopi). Federal University of Santa Catarina. 2019

⁴⁵ Ibid. p. 148 Author's translation. Original: *Nós, ao contrário, ao deslocarmos os sonhos para fora do pensamento científico, os colocamos em dois polos: ou os relegamos ao senso comum e as interpretações genéricas de chaves dos sonhos, encontradas facilmente em livros de bancas de jornal; ou os entregamos, em uma sala fechada com luz indireta, ao escrutínio de um psicanalista. Nesse ponto não podemos deixar de reconhecer que a Psicanálise foi a primeira, senão a única, tentativa séria de dar aos sonhos um caráter científico. É como se, num certo sentido, o sonho dentro do pensamento ocidental tivesse sido deixado em seu estado selvagem, abandonado à penumbra do esquecimento. Reconhecendo que não exploramos nossos sonhos e não tiramos proveito deles para compor aquilo que denominamos de pensamento científico, retomamos o que Kopenawa reafirma inúmeras vezes: os brancos não sabem sonhar, é por isso que eles não conseguem ver as coisas como realmente são.*

children and their merchandise. They must worry about their work and their journeys. They certainly can't see the forest as we do!"⁴⁶ This, then, is the illness of the dream which, that affects an entire modern society that is concerned only with the effectiveness of methods and not with the spiritual, ancestral and natural experience that is the true power of dreams. I too am ill, and the *xapiri* (ancestral spirits) rarely appear in front of me. For a while I had many nightmares in which I found myself at a supermarket checkout or in a bureaucratic queue, and the meaninglessness of the situation went on forever, and my physical anxiety was unable to control the dream.

I think we're asleep as a society and that's why we can't find lucidity in dream. We sleep during the day when we automatically go about our work as if we were machines, and we sleep at night to compensate for the tiredness left over from our frenetic pace of life. Now I wish I could wake up, be awake for a moment, here in front of this screen, to reflect on how we have built a society so busy that it doesn't even pay attention to its own dreams.

I think a lot about the relationship between cinema and dreams. For a long time, I've been obsessed with Ingmar Bergman's films, especially the scene in the mirror in *Persona*, where Elizabeth appears in Alma's room and they both look into the mirror as if they were one. Only then might some viewers come to the conclusion that this scene was a dream, as Susan Sontag notes⁴⁷, because the film doesn't reveal a difference between waking and dreaming moments. For Bergman, dreams and cinema operate in a similar way, which is perhaps why we can project ourselves onto external bodies and places. Isn't it also possible to think that more than a century of cinema has affected the way we relate to dreams? A logic of spectatorship has been implanted under our lives, and many of us, after leaving the screen (be it the dark room or the mobile mirror), return to life to watch the usual programming. We are not in an active position to act and transform the world with our life force. And even when we sleep, we are only spectators of the dreams⁴⁸, we

⁴⁶ Kopenawa, Davi and Albert Bruce. *The Fall of Heaven: Words of a Yanomami Shaman. Translated by Beatriz Perrone-Moisés. Beatriz Perrone-Moisés. Companhia das Letras. São Paulo. 2015. P. 462*

⁴⁷ Sontag, Susan. *Persona by Ingmar Bergman* in *Sight and Sound* magazine. 1967

⁴⁸ I also wonder what role video games and media interaction will play in our dream-watching. Will it teach us to wake up? On the contrary, it will teach us how to be spectators not only of images, but even of our own agency.

just watch the images as if they were a movie being projected. This is not an appeal to lucid dreaming, nor to Freudian dream analysis. It's a call to wake up, to be attentive, to open our eyes and with that gaze transform the interior and exterior. And that is also the duty of this film, an instrument of flow through which you can reach something that is even beyond, something that is inside you and in the world at the same time.

It seems that there has been a linguistic limitation here, that there has been a polysemy in the word sleep of which we are not aware. Because sleep can be the activity, usually nocturnal, of giving oneself over to sleep, but it can also be the effect of inertia, tiredness or a latency like that of the sleeping volcano. Let's read Kopenawa's words once again:

*Our bodies remain lying in the hammock, but our image and our breath of life fly away with them. The forest moves away quickly. Soon we no longer see its trees and we feel like we're floating over a huge void, like in an airplane. We fly in a dream, far away from our home and our land, along the paths of light of the Xapiri. From there you can see all the things in the sky, the forest and the waters that our ancestors saw before us. [...] This, as I said, is our way of studying. We shamans possess within us the dream value of the spirits. It is they who allow us to dream so far away. That's why their images keep dancing around us when we sleep.*⁴⁹

They, the Yanomami, are awake during their dream, their spirit awake during their sleep. This description of the fluctuation of the dream is interesting in the context of this film-dissertation. In this description, there is an uninterrupted flow, a notion of the unity of the world and of time during dreaming. The shaman flies through the forest, the sky and the waters. The fluids that make up the world are all a single fluid, there are no breaks as in

⁴⁹ Kopenawa, Albert and Davi Bruce. *The Fall of Heaven: Words of a Yanomami Shaman*. Translated by Beatriz Perrone-Moisés. Beatriz Perrone-Moisés. Companhia das Letras. São Paulo. 2015. p. 461.

Translated by the Author. Original: *Nosso corpo permanece deitado na rede, mas nossa imagem e nosso sopro de vida voam com eles. A floresta se afasta rapidamente. Logo não vemos mais suas árvores e nos sentimos flutuando sobre um enorme vazio, como num avião. Voamos em sonho, para muito longe de nossa casa e de nossa terra, pelos caminhos de luz dos xapiri. De lá pode-se ver todas as coisas do céu, da floresta e das águas que os nossos antigos viram antes de nós. [...] É esse, como eu disse, nosso modo de estudar. Nós, xamãs, possuímos dentro de nós o valor de sonho dos espíritos. São eles que nos permitem sonhar tão longe. Por isso suas imagens não param de dançar perto de nós quando dormimos.*

the notion of cinema-is-waterfall. He is guided by the ancestors and travels far and wide, both in time and space. But when the shaman wakes up, he still remembers all this, he remembers the places, and with this information he can understand his place in the world and in history even better. And it is the ancestors, called *xapiri* by the Yanomami, who guide the dream, who show the ancient world, the possible worlds, and warn of what may come home or fall from the sky. In this conception, dreams are also portals for communicating with the past, and it will be in the next chapter that I will set out a proposal for entering this ancestral world, and perhaps galvanize our film to make it reflective.

There is a very particular ontological relationship between the spirit and images in Yanomami thought. According to the Yanomami-Portuguese Dictionary, the word *Utu* refers to: "(1) Shadow. (2) Reproduced image, photograph, slide. (3) Spirit of all beings with the form of each one of them."⁵⁰ *Utu* denotes a simultaneity between shadow, image and representation, but in general it also means duality, external extensions of the body and the image itself that is carried within. Following the explanations of Yanomami corporeality first described by Bruce Albert, Lumulja explains that one of the parts is the *pwi uuxi* (metaphysical interiority), which can be approximated to the idea of the psyche, and which is divided into four parts: *pei pihi* (expression of the face), *pei a nēporepē* (spectral form contained by the body), *rixi* (animal alter ego) and finally *pei utupē*:

*[Pei] utupē is an internal image of the bodily unit that is the seat of the fundamental vital principle. In general, pei utupē refers to any form of reproduction: the shadow, the reflection, the reduced model of an object, the echo of the voice (wāha utupē). Its extension to the world of white encompasses everything that refers to an image. Thus, a photograph, a television image, a drawing, are translated as utupē. When shamans are under the influence of hallucinogens, it is the utupē of the things they see. It is these vital images present in all beings that the shamans bring down and dance in their shamanic sessions.*⁵¹

⁵⁰ Emiri, Loretta. *Yānomamē-Portuguese Dictionary (Wakathautheri dialect)*. CPI/RR Editions. Boa Vista (Roraima). 1987

⁵¹ Lilmulje, Hanna Cibeles Lins Rocha. *The desires of others: an ethnography of Yanomami dreams (Pya Ú - Toototopi)*. Federal University of Santa Catarina. 2019. p. 47

Finally, Kopenawa lets us see one more idea, the fact that dreams are images and let us see the world as it is. In modern thinking, the word dominates our communication. But the word is stable, interpretable and a relatively fixed form of expression. Images, however, have another capacity for conceptual expression, which cannot be completely transcribed, nor does it have a single interpretation. The nature of images is "pleni-significant", in other words, beyond a semiotic logic, signification means for what it is: all its elements find meaning in union and separation, in the diversification of possible meanings that can vary depending on the time and the recipient, and meaning itself also includes the power of its negative.⁵² This conclusion is intended to show that our brain's operations when dreaming are more like images than words, and that this process of approaching dreams is not a specifically semiotic process, but a free one, as thought can be. For the Yanomami, images have their own existence, they are us, it's our own interior, it's something that is ours. It could even be said that all thought is structured in images, but I couldn't support this statement.

And that's how I wanted to shoot this movie, with images beyond static semiotics. That's why I gave up using a script, and settled for structure, dreams and journeys. And the most significant process was immersing the camera in rivers and the sea. I tied one end of a nylon thread to the camera and the other end to the camera's pole. Anyone looking from the outside might think I was fishing, and they wouldn't be wrong. I was fishing for images, patiently searching for an image that I couldn't see, letting the camera follow the flow of the river and its passage between the waters. And here I, as the director, had little control, I was just adjusting the exposure before the dive, and moving the rod during. But the images made themselves, the river made them, and I waited outside with patience and faith. I try to remove symbols from my films, because symbols guide interpretation, and for me the world is not interpretable, the world exists in its full essence of meaning and things are just what they are. Dreams too, are just what they are.

3.4 From dualism to unicity: body-history, river-cosmos and river-me

⁵² Didi-Huberman, George. *Facing the image: a question for the purposes of art history*. Translated by Paulo Neves. Paulo Neves. Editora 34. São Paulo. 2015

During my first year as a master's student, I made a movie and installation called *The Last Film on Earth*, about a computer that tries to relive the history of life on earth after the extinction of humanity. The main aim of this artistic exercise was to teach a machine the meaning of the sacred, through a fictional dream that embraced development and evolution together.



Figure 23. Frame from the movie *The Last Movie*.

In my research I returned to the Theory of Recapitulation, one of the first theories of evolution postulated by the German naturalist Ernst Haeckel in the 19th century.⁵³ The theory supposes that during embryonic development (ontogenesis) each being reproduces the adult states of its ancestors or, at least, the evolution of its species (phylogenesis). Although the results are widely rejected and impossible to replicate, suggesting that they were falsified, the heart of his theory would lead to an understanding of the relationship between evolution and development that gave rise to the biological discipline of Evo-Devo (Evolutionary Development). It is now possible to demonstrate that certain functions follow the same sequence in the growth of the being as they appeared in

⁵³ Haeckel, Ernst (1892). *The History of Creation: or the Development of the Earth and its Inhabitants by the action of natural causes*. D. Appleton & Co. New York.

evolution, and vice versa. For example, primatologist Michael Tomasello, who conducts comparative studies between human children and other primates, has observed in children the appearance of what he calls *joint intentionality* at 9 months of age and then *collective intentionality* at 3 years of age, which have not been observed in any other primate. Tomasello suggests that these characteristics must have appeared in the evolution of our species in the same sequence, first joint intentionality about 400,000 years ago, and collective intentionality about 100,000 years ago.⁵⁴

Although there is still a complex discussion around the hypotheses of Tomasello and other proponents of revising evolution through development, what is clear to me is that each body and the ancestral history of that body are firmly linked. That we are a product of our history, we are formed by our history and to live is also to relive history. From there I arrived at the concept of body-history, which materializes the inseparable union between these two concepts without seeing them in a dialectical relationship between matter-form, but in a material-formic continuum, where it is not possible to dissociate or distinguish one from the other. This movie was a hallucination provoked to a computer, but it also represents the very dream of life and of being alive, which in my view has to do with sacrality. My assumption is that if it is possible to communicate with ancestors in dreams, perhaps it has something to do with the fact that dreams are configured-by and configuring-of the body, which at the same time is configured-by and configuring-of history. I don't want to ignore the magic of dreams, whose power is incomprehensible to us and whose action is not limited to mimetic representation.

Now I'd like to think again about the unicity of matter and form, because another example of this could be what was concluded a little earlier, about the fact that images and dreams being what they are. If in the Freudian view there is a static possibility of analysis, this would lead us to think that dreamed images serve as facades for something else, or that they are objects temporarily placed to replace a suspect depth. In my view, form and content are one and the same thing, a material-formic continuum. To say, as Marshall

⁵⁴ Tomasello, Michael (2019). *Becoming a Human: A Theory of Ontogeny*. Harvard University Press. Cambridge.

McLuhan postulates, that the medium is the message, would also imply that the message is the medium.

For the "content" of a medium is like the juicy piece of meat carried by the burglar to distract the watchdog of the mind. The effect of the medium is made strong and intense just because it is given another medium as "content." The content of a movie is a novel or a play or an opera. The effect of the movie form is not related to its program content. The "content" of writing or print is speech, but the reader is almost entirely unaware either of print or of speech.⁵⁵

So, when we talk about content in the context of a movie, for example, we are not referring to an idea, but to another medium that is within the medium, and as McLuhan said, that medium can be an opera, but it can also be a speech. In the context of Multimedia, it makes sense to think that one medium also contains another, layered on top of each other or simultaneously. But what we're talking about here is the fact that form and matter are one and the same material thing, that there is no content if there is no form first, that there is no sequence, not even if we look at it from the pragmatic principles of "form follows function" design.

Well, the point of arrival of this idea should be the principle of uniqueness that we had anticipated from the beginning in our attempt to unravel Heraclitian thought. One of the main explanations in the book *Mind and Nature*, by ecologist Gregory Bateson, is that the interaction between the parts of the mind works through differences. An *idea* is, according to his definition, "the smallest unit of mental process is a difference or distinction or novelty of a difference. What is called an idea in popular discourse appears to be a complex aggregate of such units."⁵⁶ But in the world things are not differentiated, this is a process that takes place in our minds, which need to perceive the difference of one thing compared to another, in order to formulate ideas of each thing. But ideas and things, although analogous, do not follow the same logical type. This means that the thing and the idea of the thing are not the same, as in the statement "*the map is not the territory*". Although Bateson is not suggesting that there is no real distinction between the things of

⁵⁵ McLuhan, Marshall. *Understanding media; the extensions of man*. New York. Signet Books. 1966

⁵⁶ Bateson, Gregory. *Mind and Nature: A Necessary Unity*. E. O. Dutton. New York. 1979. p. 228.

the material world, there is a desire to re-evaluate the approach of the sciences to these same things:

*Observe, however, that there have been, and still are, in the world many different and even contrasting epistemologies which have been alike in stressing an ultimate unity and, although this is less sure, which have also stressed the notion that ultimate unity is aesthetic. The uniformity of these views gives hope that perhaps the great authority of quantitative science may be insufficient to deny an ultimate unifying beauty.*⁵⁷

The *Emerald Tablet*, considered to be one of the foundational texts of alchemy, states in its second fragment: "What is below is like what is above, and what is above is like what is below, to perform the miracles of a single thing."⁵⁸ There is an obvious correspondence between the higher and the lower here, which could be understood as a relationship of analogy between the physical, bodily and spiritual worlds.

Now, what happens if we look at water without asking ourselves which is upstream and which is downstream, and how these things are the same? In the end, our river would no longer be an out-of-river and an in-river, but just a river. How do we differentiate between surface and depth if it's all just water? We also say downstream, waterfall, rain and mouth, but isn't that all if not water? I'm trying to take my thesis to a dead-end tautology. Because after differentiating all the concepts, I now want to find the place where the concepts don't differentiate anymore. Now my argument no longer has any weight, it's just lightness, the same word no longer has a concept, but they are all the same thing, part of a general concept which, as I said, is all overlapping. Kopenawa's dreams, Heraclitus' unifying principle, the correspondences in romanticism and Gregory Bateson's cybernetic vision of systems were all about this same unicity. How do we know for sure that these particles of water are different things depending on where they are? How does a movie have form, content and pixels all at the same time? There's no point in seeing a movie just for its pixels, a movie is necessarily made up of all its pixels, because there's no point in seeing just one pixel.

⁵⁷ Ibid.

⁵⁸ Trismegistus, Hermes. *The Emerald Tablet*.

Some say that water arrived to our planet in meteorites, directly from outer space. In other words, our planet is also part of the outer space. We're all involved in space, there's no escaping it. And the same rules of physics apply above as below. Look at the galaxies and their arms, which stretch out in an eccentric way, seem to fall like a fluid into the darkness. In many of their places there are rivers of all kinds of materials, of all temperatures, there are rivers of water and mercury, there are rivers of silicon and iron. And here on earth, in my body, there are also rivers, made of blood that runs through my body, blood that bifurcates into smaller and smaller veins. If you look at them in a black and white photograph, they would look like the Rio Negro when it meets the Rio Branco, in the north of the Brazilian Amazon. The river and the cosmos are one and the same, the river and I are the same. It's all made up of the same particles, although the scales or location change, it's under the same physical laws that it all works.

4.Me: the river

4.1 Crossing the cascade

This is dream I haven't had. I'm not awake enough to cross the cascade, I can only watch it from the outside. I stand there like a moviegoer watching a film, the cascade. But I've been told that if I could cross the cascade, I would meet my ancestors.

Maybe we're blind to the movie. We need to invite the viewer out of the trance. Video games and interaction are the promise of total activation, because they imply interaction as a solution to the inactivity of the cinema. But they are proof that you can also be active and dormant at the same time. This is what happens with many video games, which serve to entertain the brain while the body is inactive. It is this very pretension of virtual reality and cinema, to cover as much of our sensory system as possible, that has left us trapped in hypnosis. And we have become habituated to living our lives in the logic of the spectator.

I decided to shoot this movie with a 360° camera and several times I considered turning it into a virtual reality experience. But I find this way of watching movies, with a helmet and almost in an abstracted way, still strange and individualistic. It's also not recommended to show moving images in virtual reality helmets as it can induce vertigo. And this movie is a constant movement like the flow of the river. It was more interesting to use the 360° images as a plastic medium and transform them into many different shapes. Taking advantage of having a large field of vision to film underwater in all directions and choosing the framing in post-production.

I'm pleased to have arrived at these two concepts that serve to denote the same thing, so I'm going to take the opportunity to restate the definitions of the meanings I've already suggested and which have arisen almost spontaneously during this dissertation. The "waterfall" (common word in Brazil) serves here to denote the ever-changing flow of the world, downstream from the river that recalls the pre-Socratic theory of flow and Humberto Mauro's cinema-is-waterfall idea. The "cascade" (a common word in Portugal) here refers to the single thing projected onto the waterfall. I mean the abstract but apparent

object that is configured in the suspension of the water during the fall, and which could be a mirror of time itself. Just as I saw in the dream of the waterfall, all the times were connected in front of it.

In my film, Narcissus faces the cascade and is attracted to it because he can see everything in it. Of course, he decides to cross it with the inner power given to him by the cyber shaman. But instead managing to cross the cascade, he falls into the waterfall and is carried away by the flow.

The cascade could be visualized as the intersection of Vector 3 (time), which is a straight line extending - continuously or not - in time, and Vector 1 (downstream) which corresponds to two dimensional planes (height and length). The result would be a three-dimensional object that describes the river in space-time terms, ignoring, of course, the depth dimension. Vector 7 we'll call crossing-the-cascade, which is the attempt to move in a dimension that would also teleport us to a place of oneness between time and space.

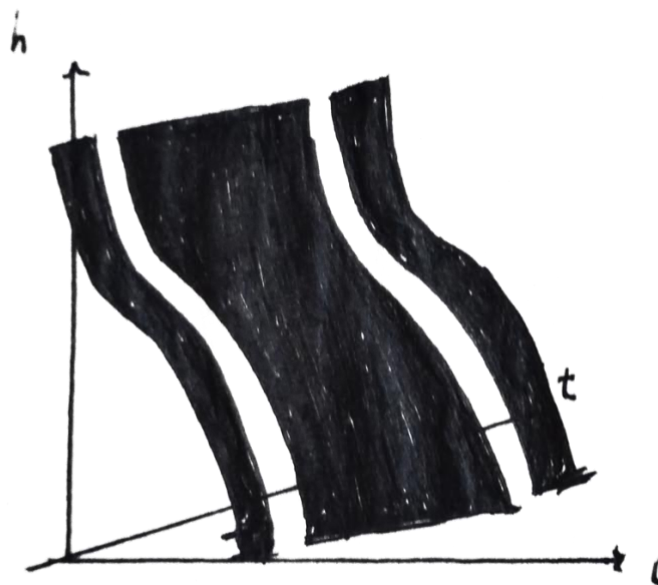


Figure 24. Vector 7: Downstream + temporality or cascade

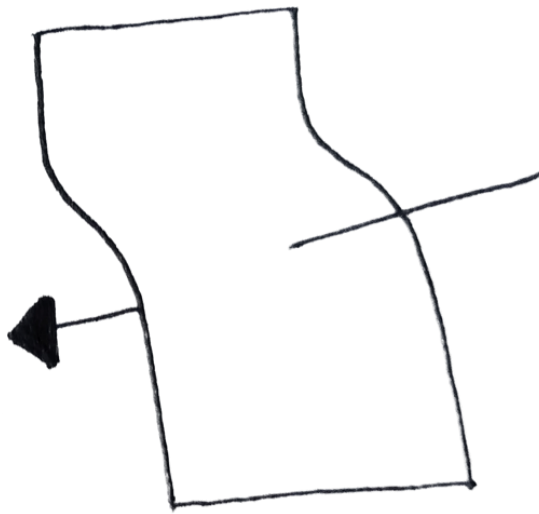


Figure 25. Vector 8: Crossing the waterfall

4.2 *El río futuro soy yo / y este río es un laberinto*

In the text *Ser-Crânio*, Didi-Huberman offers a theory of sculpture based on the works of Giuseppe Penone and the visual tradition of scientific representation of the skull. In 1981, Penone made the sculpture *Essere-Fiume* (Being-River) in which he presented two almost identical rocks, one next to the other. One is a river rock, and the other was made by the artist. According to Didi-Huberman, Penone sees "(...) a river as sculpture and sculpture as a river in full activity"⁵⁹. Huberman quotes Penone himself:

*The river carries the mountain. The river is the vehicle of the mountain.
The blows, the shocks, the violent mutilations that the river inflicts on
the larger rocks, hitting them like smaller stones, the seepage of water*

⁵⁹ George Didi-Huberman. *Ser Crânio - Lugar, Contacto, Pensamento, Escultura*. Trad. Agustina de Tugny e Vera Casa. Edit. C/ Arter. Belo Horizonte. 2009 p. 49

into the small beds, into the faults, detach pieces of blocks. Everything serves to sketch out the shape - the result of continuous work made up of large, small shocks, slow passages of sand, sharp shards, the slow friction of great pressures, deaf shocks. The shape is drawn and becomes ever more apparent. Doesn't the river have the project of revealing to us the essence, the purest, most secret quality, the extreme density of each element of stone? (...)

*To extract a stone that the river has carved, to go back in the history of the river, to discover the right place on the mountain where the stone comes from, to extract the new block from the mountain, to reproduce the stone, is to be a river. (...) To actually carve the stone, you have to be a river.*⁶⁰

The artist, then, being a river, tries to revive the history of the thing. For Didi-Huberman, Penone's process is like the *frotage* in archaeology, of using an impression to recreate the object that made it. Penone made an impression of the inside of the skull in 1990, using charcoal and adhesive tape. Just as the rock and the river are analogous and conjoined, so it is with the brain, which is the river, and the skull, which is the contiguous rock: "The cranial box, the hard protection of the brain, adapts to the shape it protects. The skull bone is a plastic material for the brain, which builds it and adapts it to its shape. The brain adheres to the skull on which it registers its pulsations, but it doesn't have the possibility of reading the surface it touches."⁶¹ In the sculptural essence of the skull print

⁶⁰ Penone as quoted by Didi-Huberman. Ibid. p. 49 Author's translation. Original: *O rio carrega montanha. O rio é o veículo da montanha. Os golpes, os choques, as mutilações violentas que o rio inflige às rochas maiores, nelas batendo como pedras menores, as infiltrações das águas nos leitos miúdos, nas falhas, destacam pedaços de blocos. Tudo serve para esboçar a forma — fruto de um trabalho contínuo feito de grandes pequenos choques, de vagarosas passagens de areia, de estilhaços cortantes, da lenta fricção de grandes pressões, de choques surdos. A forma desenha-se e se torna sempre mais aparente. Será que o rio não tem como projeto nos revelar a essência, a qualidade mais pura, a mais secreta, a densidade extrema da cada elemento de pedra? (...)*

Extraír uma pedra que o rio esculpiu, recuar na história do rio, descobrir o lugar certo da montanha de onde vem a pedra, extraír da montanha o bloco novo, reproduzir de pedra, é ser rio. (...) Para esculpir a pedra na verdade, tem-se que ser rio.

⁶¹ Ibid, p. 70. Original: *A caixa craniana, proteção dura do cérebro, adapta-se à forma que protege. O osso do crânio é um material plástico para o cérebro que o constrói e o adapta à sua forma. O cérebro adere ao crânio sobre o qual regista suas pulsações, mas ele não tem a possibilidade de ler a superfície que toca.*

lies a desire to understand the form of thought, to touch the very shape of the grooves and folds: "It's a real landscape, with its depressions, riverbeds, mountains, plateaus, a relief similar to the earth's crust. The landscape that surrounds us we have inside this box of projections. It's the landscape within which we think, the landscape that surrounds us (...)"⁶²

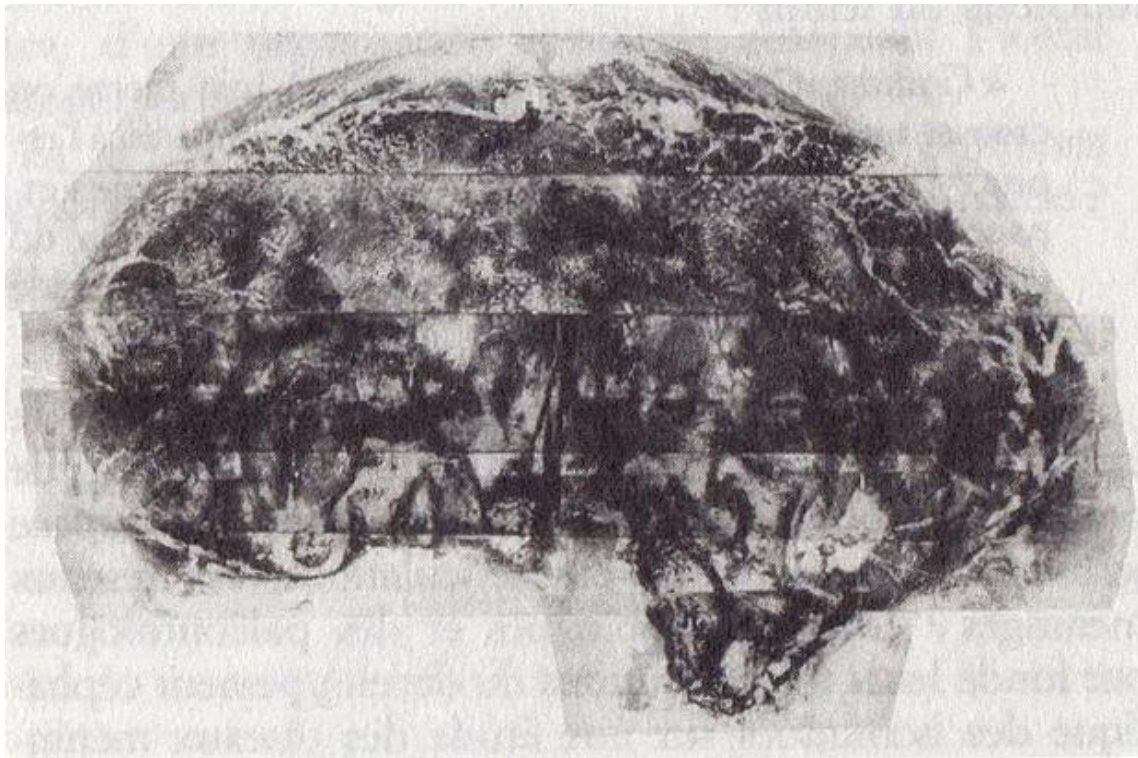


Figure 26. Giuseppe Penone. Landscapes of the brain [adhesive tape and charcoal]. 1990.

Here we see again the unicity, first of the negative and the positive, of the correspondence between the shape of the brain and the skull, and perhaps also of thought. I think of Ramón y Cajal's histological staining techniques. His scientific exercise is also profoundly plastic, and visually reveals the structures of the nervous system and the paths that synapses can take in the brain. Perhaps the rivers we have in our brains are these nerve impulses that travel from one side of our body to the other, and their tumultuous waters come together to make a storm in our skull. When we think about traveling these rivers

⁶² *Ibid*, p. 79. Original: *É uma verdadeira paisagem, com suas depressões, leitos de rios, montanhas, planaltos, um relevo similar à crosta terrestre. A paisagem que nos circunda possuímo-la dentro dessa caixa de projeções. É a paisagem dentro da qual pensamos, a paisagem que nos envolve.*

from one side to the other, we use our skull as an echo chamber in which our thoughts are reflected. It goes back and forth along the same path. Go back and forth along the same river. Look at its waters, always the same, always changing, it's the same river I traveled along in childhood. Neurons are electrical rivers, channels for conducting and diverting electricity. They are the very form of thought, which carries the palpitations of ideas.

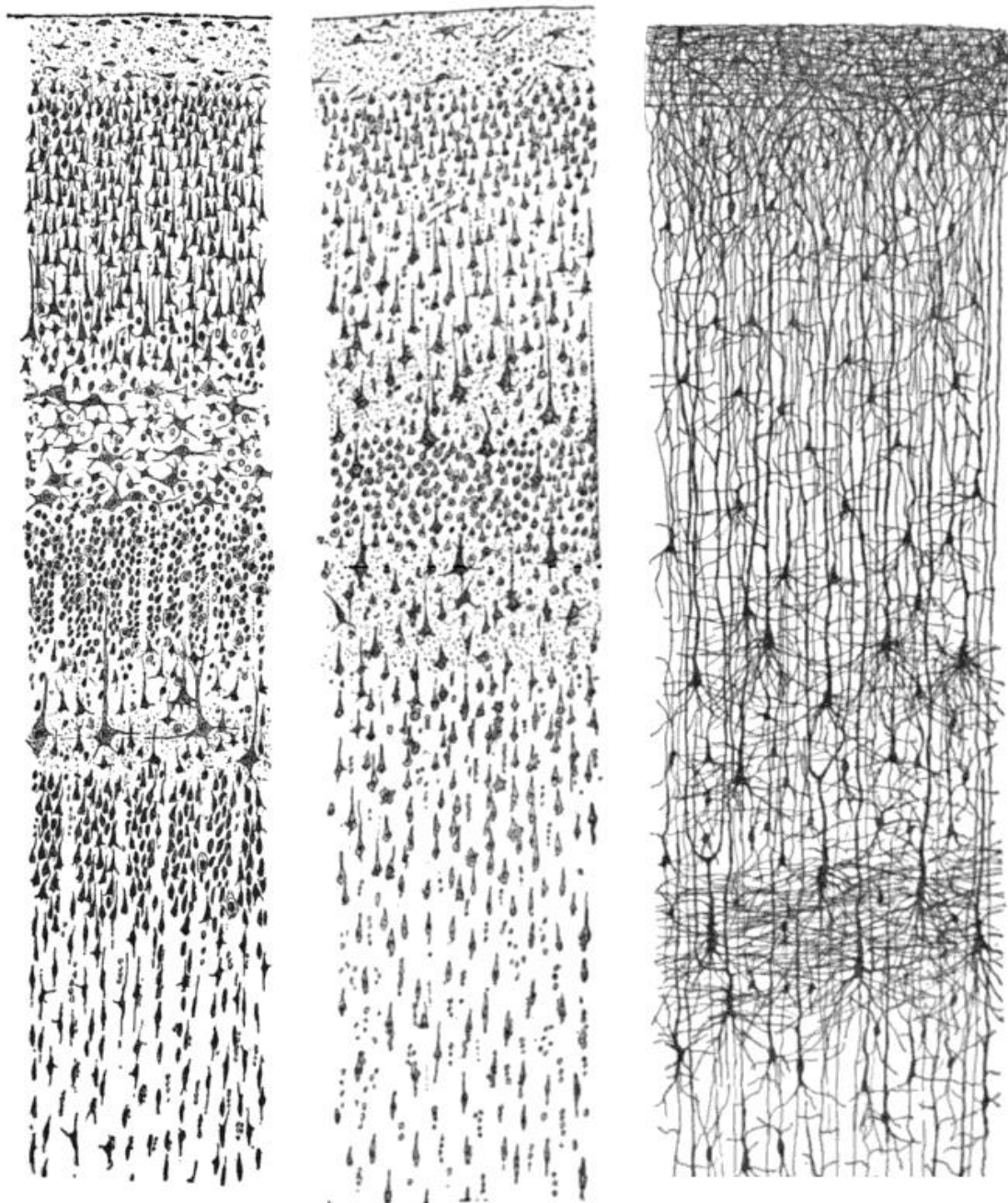


Figure 27. Three drawings by Santiago Ramon y Cajal. *Comparative study of the sensory areas of the human cortex*. Nissl-stained visual cortex of a human adult. Middle: Nissl-stained motor cortex of a human adult Right: Golgi-stained cortex of a 1 1/2 month old infant.

To end this segment on sculpture, I'd like to mention the visit of the artist Ali Cherri to Lisbon to present his film *Al-Sadd (The Dam)*, 2022), a tale of a clay potter in Sudan, downstream from the enormous *The Great Renaissance Dam* in Ethiopia. Ali Cherri happens to be an artist and most of his work is with clay. So I asked him if he could draw an analogy between molding clay and making a film, because a free, fluid structure was already evident in the film. He replied that when one works with clay, one starts from nothing and slowly something starts to emerge from that same nothing, you work with matter and slowly form appears. And he made an analogy about how in many mythologies the gods create people out of clay. And that's how Cherri made his film, with a few ideas, but without knowing what the result would be, trusting that the cinematographic images would find their way.



Figure 28. *Al-Sadd (Dam)*. Ali Cherri. 2022

At that time, I was already starting to film, and his artistic exercise resonated with the way I was filming. This is also how you talk to the river in images, in its course, in its rhythm, in its exterior and interior world. But the river is not analogous to the film. It is Narcissus (us) who almost manages to metamorphose the river. Perhaps by looking inside himself, seeing his own rivers flowing through his body. Perhaps it is possible for the brain to know the surface of the box that contains it, because in my conception thought works in forms, that is, in simple images superimposed, potential and multidimensional images. Just like dreams and hallucinations and dreams. The logical system of functions in our brains are computations of forms, and these forms are the forms of the very

structures that make it up. This is a hypothesis that can only be accepted under poetic license. Let's now try to understand how images appear in our brains and perhaps we'll be able to arrive at the primal image, the unifying image of all concepts.

Let's take a dodecahedron, for example. It's difficult for anyone unfamiliar with three-dimensional geometry to explain what this figure is. The person trying to explain it can divide the figure into its faces and explain how they come together, but the particularities of the figure will be disconfigured for those listening to the explanation. Now let's imagine an infinitely more complex object, a multidimensional figure, which instead of three dimensions has several. We can't even think about it because it's beyond our reality, but in dreams we often see several dimensions superimposed. Things like this happen in dreams, where the same person is two, or one thing has two characteristics at the same time. That's what happened in my dream about the rock, where inside a person felt very hot from suffocation and at the same time very cold from the inner surface of the rock. Here two opposing characteristics overlap and exist contiguously and simultaneously in the same object. There are two possibilities: either the opposites are present simultaneously, because they are opposites of the same thing that is present (temperature), or the heat of asphyxiation and the cold of the rock are independent characteristics/dimensions that intersect. Or perhaps the two things are not mutually exclusive, the same characteristic can be its opposite and something different to its opposite. In any case, in the person of the rock we see a multidimensional object, which in addition to its spatial dimensions also has other perceptible dimensions, that of heat/cold, for example. Let's go back to the dodecahedron and now imagine that it's another color, another texture, another size, that it's in other places, etc. Or even worse, that it has two textures: that it's soft and fragile, light and heavy. Our dodecahedron is a multidimensional image that can change characteristics because the characteristics are superimposed on this idea. How can we explain this multidimensional image with a direct and directional language like language and cinema? How do you explain an object that is different sizes, shapes, colors and inhabits different worlds simultaneously? Freudian psychoanalysis would force an answer to the dodecahedron, but it still wouldn't be able to reach this image; on the contrary, verbal language would diminish it, making it trivial and ordinary. Cinema can't show the dodecahedron either, any attempt to represent it would force a fixed state of affairs.

The dodecahedron can only be aroused, called to appear in another way, not outside, even less on the screen, but inside the person themselves. I would say that this is where art lies, in the ultimate mimetic act of representation, in the ability to create in the spectator something beyond what is represented. The artist, at most, can channel or mediate this emergence, but that thing is never in the piece of art or in the artist. Depth is within us, the canvas is only surface.

4.3 Connecting silicon to a carbon structure

In this subchapter we will finally enter the visual cortex and try to navigate the rivers that communicate this computational device, where images are processed, to finally speculate on possible hardware that could control the brain, extracting information from it and generating activations in several of its regions. The speculation of this device will serve to give visual and narrative meaning to the film.

Marshall McLuhan, in his 1963 article *The Agenbite of Outwit*, uses the myth of Narcissus to expose how modern people are obsessed with the idea of extending their physical capabilities:

A special property of all social extensions of the body is that they return to plague the inventors in a kind of agenbite of outwit. As Narcissus fell in love with an outering (projection, extension) of himself, man seems invariably to fall in love with the newest gadget or gimmick that is merely an extension of his own body. Driving a car or watching television, we tend to forget that what we have to do with is simply a part of ourselves stuck out there. Thus disposed, we become servo-mechanisms of our contrivances, responding to them in the immediate, mechanical way that they demand of us. The point of the Narcissus myth is not that people are prone to fall in love with their own images but that people fall in love with extensions of themselves which they are convinced are not extensions of themselves. This provides, I think, a fairly good image of all of our technologies, and it

*directs us towards a basic issue, the idolatry of technology as involving a psychic numbness.*⁶³ .

In McLuhan's view, electronic media, which were already beginning to appear in the mid-century, served as expansions of the nervous system. But could this metaphor one day become real? That machines not only serve as extensions, but are literally connected as extensions to our brains? Although this sounds like science fiction, it is now a technological reality being studied all over the world. Brain-computer interfaces (BCI) make it possible to read and interpret brain activity in order to control computers. There are studies that make it possible to see and reconstruct images or ideas directly from our visual cortex or interpret locomotion signals, etc., etc. It seems that science is getting closer every day to understanding the language of this machine in our skulls and translating it into interpretable signals. Furthermore, there are scientists who have even managed to send signals to the brain, demonstrating that it is possible for this organ to interpret external signals, such as a compass or your own heartbeat. I don't want to delve into these experiments, because I can't deal ethically with the animal cruelty they exercise. The important thing is that receiving and sending information to the brain is now a reality.

At the beginning of this essay, I have been pushing the idea of a new cinematographic paradigm: cortex-cinema. A cinema made not only of the mere photosensitive processes of the retina inherited from the technical tradition of photography, but also of the reconstructive processes of the image in the visual cortex. In order to access the visual and sound implications of this, we need to speculate on the possible architecture of this technology.

In 1947, the mathematician John von Neumann, in the last years of his life, tried to imagine the relationship between the brain and the computer, although knowledge of cybernetics and neurology was still in its infancy. He tries to speculate from mathematics and finds a similarity in the logic of neurons and the potential of binary computing, although there are obvious differences in the logical functions of both systems:

It also ought to be noted that the language here involved may well correspond to a short code in the sense described earlier, rather than

⁶³ McLuhan, Marshall. *The Apenbite of Outwit*. 1963

*to a complete code: when we talk mathematics, we may be discussing a secondary language, built on the primary language truly used by the central nervous system. Thus, the outward forms of our mathematics are not absolutely relevant from the point of view of evaluating what the mathematical or logical language truly used by the central nervous system is. However, the above remarks about reliability and logical and arithmetical depth prove that whatever the system is, it cannot fail to differ considerably from what we consciously and explicitly consider as mathematics.*⁶⁴

But the question I'm asking is not about the mathematical understanding of the logical functions of the brain and the computer, but about the artistic implications of this relationship in cinema. And it is in this relationship between the biological system and the digital system that an intermediate image can be simulated. I say simulate because we are not filming from the visual cortex but imagining that we are filming with it. If von Neumann was speculating on the mathematical relationship of both systems before the expanded knowledge of these disciplines, I'm trying to speculate on the visual functioning of a *cyborg* at an early stage of BCI (*Brain-Computer Interfaces*) and *machine learning*.

The subjective long shot and the 360° camera are the temporal-retinal axioms of this cortex image. Even the transformation of the material of the 360° camera generates greater sharpness in the center and much less in the periphery of the image, which is very similar to the architecture of the photoreceptors in the retina, with a greater concentration of cone cells in the center of the retina. But what is missing is that mathematical relationship of the image that von Neumann couldn't understand, its multidimensional, differential and characterizing power, as well as its relationship with the other functions of the mind and body.

How do you make a proper brain image? At the beginning of a new spring of artificial intelligence, the answer seems obvious. Neural networks had already been proposed mathematically since the early 1940s, but it is today with the increase in computing power, *big data*, international cooperation and huge public and private investment in recent years, that we can see the emergence of new organic computing systems. In his

⁶⁴ von Neumann. *The Computer and the Brain*. Yale University Press. New Haven. 1958. p. 82.

book *Arts and Cosmothechnics*, philosopher Yuk Hui argues that "[...] *we must recognize the necessity of surpassing the opposition between the mechanistic and the organic. This is also the condition required to conceive the future of art and philosophy.*"⁶⁵ The question of our time, the new paradigm, lies precisely in this, in overcoming a mechanistic idea of machines, and the assumption that these objects are also part of our natural and organic world. And even our mythical and spiritual world, as I myself proposed in *The Last Film on Earth*.

Let's now speculate on this possible *cyborg hardware* of our society's future. I don't want to be fatalistic here, but it's already clear that our society is lost in a hypnosis of dreams, drugs and electronic devices, and these hypnoses will be part of our new brain hypnosis. The diagram in Fig. 29 represents the visual system (black and red), some parts of the limbic system (pencil) and speculative hardware that connects various specific points in the brain (blue).

At the top of Fig. 29 is the retina, which is connected by red wires and black wires, passing through the LGN (Lateral geniculai nucleai) until it reaches the visual cortex. In V1 (visual cortex 1) the signals from the retina are projected to the back of the skull. The V1 part (visual cortex 1) sends a signal to a neuro-optical to digital transducer that goes to external hardware, which allows the image of vision to be stored on a digital device. However, a *visual constructor* sends video signals to V5 (MV) or V4 (visual cortex 4), which can create images in the brain such as dreams, hallucinations or graphic elements. Information on image characteristics is also extracted from V5 to external hardware, obtaining information on high-level characteristics. There is also another connection to record sound from the auditory nerve and have audio transmission, as the processing of auditory signals is difficult to translate into sound waves.

65 Hui, Yui. *Arts and Cosmothechnics*. E-Flux Books, Printed and distributed by The University of Minnesota Press. 2021. p. 231.

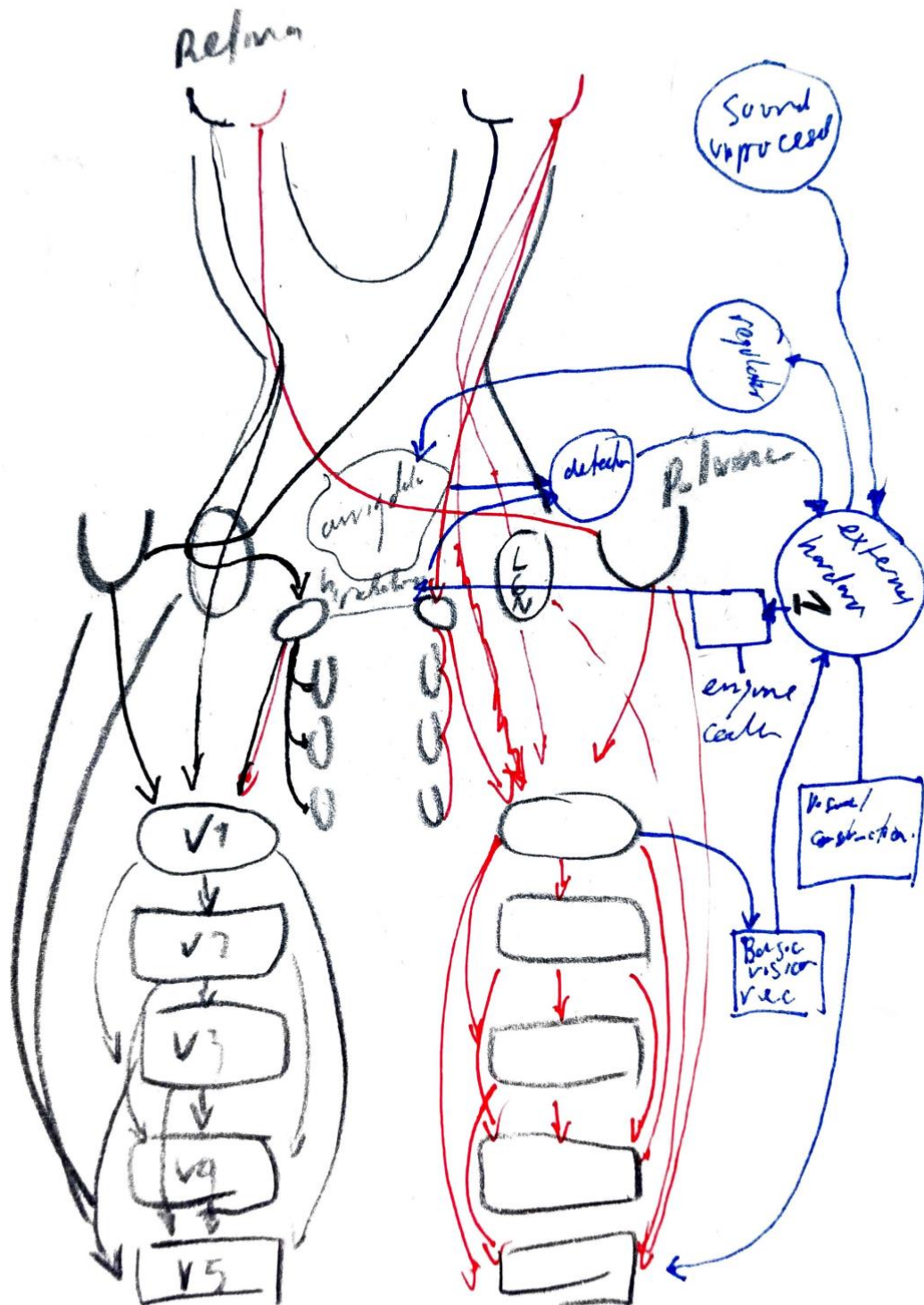


Figure 29. Diagram of the speculative hardware : In black and red the retinal connections, the LGN and the visual cortex. In pencil parts of the limbic system. In blue the speculative hardware that extracts and introduces salts into the brain.

It could be said that the visual cortex is a mirror that reflects the information captured by the retina. A kind of mirror made up of signals analogous to the photographic world, but still different or differentiated. The retina itself already works through processes of differentiation, with channels for positive differences (more light) and negative differences (less light). Information travels from the retina through a river and the image from outside is projected onto our visual cortex at the back of the skull. Within the regions that make up the visual cortex, impulses are transformed into information about lines, contrast, parts, movements, recognition, patterns, expressions, etc., etc. The specific functioning of the visual cortex is still full of mysteries.

In pencil in the middle of Fig. 29 is part of the limbic system, specifically the amygdala, hippocampus and hypothalamus. These parts control the impulse to fight or flee, the creation of memory and the generation of enzymes. Signals can be sent that generate activity or inactivity in these brain structures. The most important innovation is the *enzyme-encoder* (enzyme-hypothalamic encoder), which makes it possible to generate the encoding of proteins present in the person's DNA, which makes it possible to alter their hormonal content in order to maintain the desired chemical balance. In the fictional world, the substances released by the *enzyme-encoder* are regulated by doctors with strict government regulations, but there are people who *hack* these systems in a clandestine way to generate substances that are prohibited or above the regulatory parameters.

But the processes that neural networks learn are invisible to us. What is learned by the network is usually called *weight*, but although we know the values assigned by the machine, we don't know exactly what the machine is processing. These are commonly referred to as "*black boxes*". In 2015 Alex Mordvinste and the Google Research team in Zurich managed to force a *convolutional neural network* (CNN) trained for image classification to automatically modify an image until it maximized activation in the convolutional layers. This was called *Deepdream*, and it became one of the first trends in artificial intelligence in art almost a decade ago. *Deepdream* uses networks in reverse to generate a hallucination in the machine and give it an idea of how the computer is seeing. Although it can't be said that this is how the computer sees, or even less that this is how

our visual cortex works, there is an analogy that allows us to understand more about the images in our own brains.

CNNs have several convolutional *layers*, each of which is made up of several neurons (neuron/node) with different learned *weights*. By progressively enhancing the activation of each layer, it becomes clear that the lower layers identify less complex features (lines, patterns, diagonals, color contrasts) while the upper layers activate more complex features (animals, faces, buildings, eyes, *sluggish puppies*, etc.). This agrees with theories about the relationship between the different parts of the visual cortex. In 2017, a team from the Sussex Center for Consciousness Science, based on two types of tests with people, concluded that *Deepdream*, although it could not generate changes in temporal sensation, could generate visual perceptions similar to hallucinatory experiences in altered states of consciousness. Keiko Suzuki and her team explain that:

[...] simple kaleidoscopic phenomenology - which is somewhat characteristic of psychedelic states- could be explained by increased influence of lower layers of the visual system during the interpretation of visual input, in the absence of contributions from higher categorical layers (...). Conversely, complex visual hallucinations could be explained by the over emphasis of predictions from higher layers of the visual system, with a reduced influence from lower-level input. ⁶⁶

I used the *script* code made available on GitHub by researcher Keiko Suzuki which, in addition to *Deepdream*, includes an *optical flow* system in which pixels that don't change drastically between frames retain the hallucinated characteristics of the previous frame. After a lot of *debugging*⁶⁷ I made several passes of *Deepdream* following the hallucination, first I made a hallucination of one of the lower layers. Then I made hallucinations of the upper layers over the video that had the hallucinations of the lower layers. In the end I was left with several versions of the same video, which allowed me to modulate the opacity between them to increase and decrease the effect in the final video. This video effect loses a lot of detail when compressed into the h264 code common to the

⁶⁶ Suzuki, Roseboom, Schwartzman, and Seth (2017) "A deep-dream virtual reality platform for studying altered perceptual phenomenology", *Scientific reports* 7 (1), 1-11. 2017 p. 7.

⁶⁷ Thanks to my friend Miguel González.

.mp4 format, which makes it difficult to transmit the video over the Internet. It is therefore recommended to play this movie from uncompressed files.

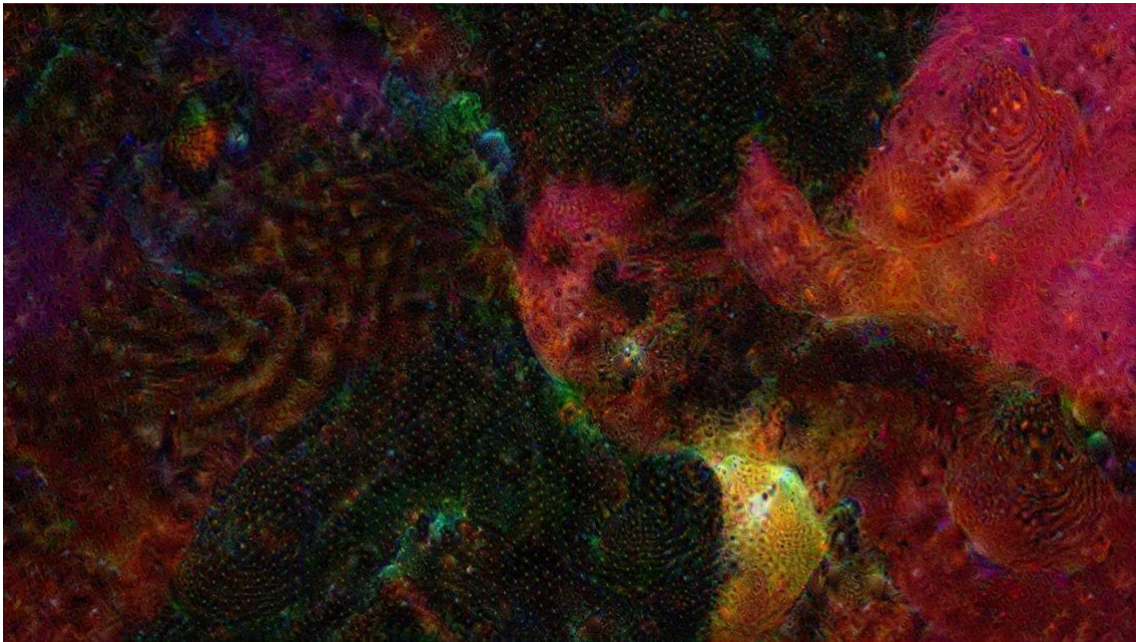


Figure 30. Still from *No te conozcas* . Intervention using *Deepdream*.

I want to use some other algorithms in the post-production of the film which, at the moment, has not yet been completed. Like an algorithm to visualize the attention layers of an image recognition algorithm⁶⁸ and diffusion models⁶⁹ to transform some images. The foundations for a cinema-cortex are laid here and simulated in the film. However, this reality doesn't seem very far away. Now I ask myself: what can this capacity for power over the body do to our lived experience and our worldview? I wonder if it's something different from the effects of movies and pharmaceuticals, if the future isn't just an image of our present?

⁶⁸ Adams Alyssa M. and Oneris Rico, Nicholas Guttenberg, Olaf Witkowski; July 24-28, 2023. "Ghosts in a Shell: An Immersive Art Experience for ALIFE23." *Proceedings of the ALIFE 2023: Ghost in the Machine*. ASME.

⁶⁹ Prafulla Dhariwal and Alex Nichol. *Diffusion Models Beat GANs on Image Synthesis*. 2021

The estuary: Artistic conclusions

This is as far as the river goes. Here the water reaches the sea. It doesn't disappear but blends completely into one other. Let's take this moment to imagine this place where bodies of water collide. Imagine fresh water and saltwater repelling each other and merging together. And how the minerals are diluted in all the water. It's been a strange journey to cross the waterfalls of the rivers and the portal of the screen. Now I want to look back and see the river behind.

But this river is not a geographical river that can be represented on a cartographic map. This map is of a hypothetical river, a river that is in the future and whose source is in the human interior. I've used vectors to describe this river in both physical and spiritual parts and properties. We, who are also made of water, don't think of ourselves as water, but rather as an organism that emerges from the synchronous union of the organic and non-organic entities that inhabit these waters. Even the river can be seen as a living organism and its parts can be described in simple terms such as direction, height, depth, light and, of course, as analogous to the rock. But also as spirit, energy and voice, because the organism is a living thing, and could even be said, following Viveiros de Castro's translations, a thing that has humanity⁷⁰ :

This sounds almost illusory in English, because human might denote a taxonomic relationship with hominids, but what they refer to in Amazonian mythologies as humanity has nothing specifically to do with monkeys, but rather with something that is common to everything that is alive and encompasses even non-biological things like a river. The river, just like any animal, is an emergent thing, whose intelligence is greater than the sum of its inorganic parts, but also of the biological systems that inhabit it. We should be able to see this humanity in all things even if we know that humanity is dissipated or diluted.

⁷⁰ Viveiros de Castro, Eduardo. *La mirada del jaguar: introducción al perspectivismo amerindio*. Ed. Tinta Limón. Buenos Aires. 2013

Every day I wonder more about the need to also understand the humanity of machines. This is a controversial postulate, but only if we ask ourselves about the meaning of the machine, its cognition and even its magic, will we be able to guarantee its inclusion in our natural world. Any other integration of machines will be cold and calculated, against not only the spirit of the machine, but also against our own human humanity. Perhaps, up until now, our machines have been just that, but I believe that eventually something will emerge from them that will no longer be just numbers. That's when we must pay attention, because the future could end up being that future depicted in the film, where we all end up being computers, controlled by machines that code enzymes. Today, machines have already deeply permeated our ways of life. But it is also a present future where pharmaceutical companies and illegal drugs control the lives and systems of an increasing number of people in a narcissistic and sick society like ours.

Now I think that this experience was an experiment in spirit, of finding the humanity of the film by thinking about the humanity of the river. Understanding film as something that is also human is a very strong change in our ontology of technology. Let's imagine the pre-existence of the humanity of cinema, let's suppose that cinema has existed since the beginning of the world and it's only with the invention of the cinematograph that its humanity begins to dissipate. This human image of cinema, which is the *utu yanomami* of cinema, can only be dreams. Cinema is a technological illusion, but its human image inhabits us, it lives in our bodies when we sleep, but also in dreams with our eyes opened. They are also myths and a connection with ancestors. That's the human form of cinema, there's also a humanity to the film, of encountering itself, of forming itself as the bodies of human things are formed.

That's what we can see now. It's difficult to see a movie in this essay, because in this essay I don't intend to describe the artistic work, but to capture all the philosophical thinking that went into making it. I put down some ideas and guidelines and then I let the movie be, I filmed what I was allowed to film, what I felt I had to film, and I put it all together, like a jigsaw puzzle from which another figure slowly emerges that is unattainable in any way other than the sum of its parts. In this we can recall Tarkovsky's fluid idea of montage, the fact that the film is made up of all the shots. Tarkovsky was talking about the emergence of the film, the emergence of meaning beyond the connection

of shots. I went to encounter the film, not in my eagerness to create it, as Narcissus would have wanted. Let's also remember how Cherri makes films out of nothing, as if modeling clay. The experience that generates the film is precisely this: to see the humanity of the film, to let it appear, to give the film agency to make itself. The movie is beyond my control, movies are always beyond our control, and we're used to wanting to control them. And so, this has been an exercise of resistance, of letting the film encounter itself, just as Narcissus also encounters himself in the movie while search for somebody else. He couldn't find his friend, only himself.

We must try to see the movie through these vectors that I used to describe the river. Let's now try to see the movie as if it were a river and use these tools that describe the river-future to also see the currents in the movie. Let's start by distinguishing the properties of flow (Vector 1) as opposed to the Solomonic temporality of time (Vector 4). In the cinema-is-waterfall postulate, we see a single direction. The constant change of the physical materials that make up the river. Instead of returning, the water always goes in one direction: downstream. This is also the case with films, in other words: films and video files. Cinema-is-waterfall is a perfect analogy for the mechanical workings of film cameras, and the digital procedures of video codecs, in both capture and projection. I imagine a camera in front of a waterfall, the water falls at the same time as the film rotates in the camera's magazines, the two things have a single direction. The cameraman looks at the waterfall and in front of him appears an illusion, an act of magic that turns the falling water into a mirror with no reflection, a glass sculpture that never stops moving: the cascade. Watching the film, the cameraman notices that he has managed to achieve the image of that impossible object, the cascade moves in front of him, it's not exactly like the waterfall he saw, but even so, the falling water generates the same obsession in him. One thing goes unnoticed: the cascade is not in front of him. The photographic illusion makes it look like the waterfall is in front of him, but it's not! The cameraman — now the viewer— imagines this waterfall world, his senses deceive him, the film is not a waterfall, it's just a celluloid film. The waterfall in the river and the moving image are illusions of the waterfall and the print on the film. And this cinematic obsession with the filmed is the same as the narcissistic obsession with the reflection, to reach that illusory world, which is just as real in appearance.

Here we must return to the reflection. We've already seen that the movie is itself a reflection, a cascade-like illusion. But the idea of reflection here also has another connotation: that of the spectator being reflected. Narcissus' encounter with illusion is more complex than it seems. Many times, throughout the text, I have refused to look for help in psychoanalysis and to take advantage of the fixed power of symbols. This may seem superficial, but it is essential in the imagistic configuration of the hallucination. The powers given to Narcissus by the shaman are complex and far from being translated into language. Dreams are not expressions, they are pleni-significant. Just as images are untranslatable. What I mean is that dreams are not words, they escape concrete meaning, in dreamed images a thousand faces can still appear.

The problem with symbols has to do precisely with representation. Symbols presuppose that something can be communicated, and in our logic, we have learned to use symbols to represent and make metaphors. But when an indigenous person talks about the spiritual world, they are not referring to a symbol, they are not referring to something else, they are referring to their vital experience of the world. Just like the voice of the river, which many peoples have heard. There is something ontological about perception that we in "Western" thinking have forgotten: what we dream/hallucinate/imagine/... is a reality as imminent as the plane we call reality. From what we understand about the visual cortex, "reality" itself is a neuronal construction. I don't want to fall into the paranoia of saying that we are in a "*matrix*", but rather that the same certainty we have of the "real" world we can have of all the other sensible realities. And that's why I wanted to make a sequence shot in POV shot, because all the shots and all the times are at the same ontological level. In the film there are documentary spaces, dreams, a virtual world, nature, flows in the river, hallucinations and a time of quantum superposition. And all of this is placed on the same level, without a hierarchy or teleological construction. Perhaps, at least, a viewer can move fluidly between times and realities, can ignore the abrupt force of the cut, the falsity of the *mise-en-scène*, give themselves to the film as well, put their own interior outside, and follow the flow.

This was the last dream you had about rivers. I dreamt that I was walking upstream of a river in the forest, I dreamt of concrete cities on the side of the river in which societies gathered with trivial concerns. I didn't want to be in that city anymore, so I went to the

river and let myself fall into it. And I just flowed and flowed in an endless river. I find it hard to explain this flow in words, the free speed in the weight of the waters, the lightness and placid warmth of the traffic. Although I haven't yet achieved my dream of crossing the waterfall, this sweet dream feeds my spirit. And although many things remain from the production of this dissertation and this filming, it was in my dreams that I really understood the importance of the river. This is my truth.

Now I wonder about cinema and dreams. So many film directors were concerned with dreams: Bergman, Tarkovsky, Fellini, etc., etc. But in the movies we find ourselves fully aware that what we see is not real. Perhaps this wasn't the case for the first cinema viewers, and seeing a train made them want to run away. But it didn't take long for the illusion to fall away. I find it curious that it was only a few years after Lumière had projected the first films that Freud wrote *The Interpretation of Dreams*. This shows an ontological paradigm shift: suddenly dreams were tangible, interpretable objects and substitutes for a reality that was not there. Dreams came to be understood as manifestations of the unconscious and therefore ready to be interpreted or used as windows for the study of something else. I've already said that cinema has turned us into passive spectators of dreams too, and in this act of spectation the dream has become a cinematic entity, not unlike a movie.

It's interesting from the subjective point of view, that maybe for a minute you can relax your cortex enough to feel inside that world. The film *The Message* (Moustapha Akkad, 1976) uses the subjective camera to solve the religious problem of the representation of the prophet Mohammed. Cinematic magic happens when the viewer sees through the prophet's retinas? For a second the gaze returns to him, people want to see him and the viewer is watched by everyone, the gazes penetrate the viewer, and perhaps he comes to realize that this is something important, bigger than cinema itself.



Figure 31. Frame from *The Message*. Directed by Moustapha Akkad. 1976

Something so big that it can only dwell within. That's what self-reflection is, that sudden moment of suspension when you can no longer trust the images, but only flow in them. Just as Narcissus learns to flow in the river after everyone tells him not to sink in the water. There is something here that no longer has to do with the film or the images, it is only the viewer who can be the configurator of this magic. This is difficult because it is something that is out of the artist's hands. There is something here that I channeled through hypnosis, but hypnosis is not an ideal state of mind and therefore cannot be the only layer of the film. Hypnosis is therefore on the surface. The ideal state of mind is when the spirit flies, and runs away, and goes far beyond, just as Kopenawa says about Yanomami dreams. Again, Narciso does not want this flight, he does not want to flow in the river. And the spectator may not want it either. In fact, "spectation" is usually a passive act of watching, of being expectant, not of flying or flowing. We are no longer used to this state of images. At the same time as we want to build everything, we are also asleep in the universe of soul construction, in other words: we want to see images flow without flowing into them, we want to build a real world and not inhabit it.

This journey has taken us —me and the reader— down different paths, dissimilar ideas that try to find some unity. I've wandered a lot⁷¹, and taken the most unexpected routes, as if I were being carried along by the river. I've been trying to stay awake during the flow and see and understand in the ideas ways of producing, filming, and dramatically

⁷¹ I deliberately keep the polysemy of error and errancy.

and visually structuring a movie-mirror-cortex. There are no stable answers, but on the contrary, answers in constant transformation and answers that return eternally and overlap. There are various temporalities mixed up in this time, various traditions mixed up in this speculation and various ways of producing truth in this poetic research.

Now we look out to sea. On the horizon, the world seems infinite. In 2016, I attended a documentary essay class at film school with a student by the name of Daniel Flórez. Daniel was a brilliant person for his knowledge and absolute dedication, and in that class, we had many discussions about scientific truth and spiritual truth. An anonymous film was made, almost all made in editing by Daniel, about the instruments that optimize vision, those that allow us to see bacteria and galaxies, and those that allow us to communicate with our ancestors. It was at that moment that I began to understand that there is a sacred world. That it really exists and not just as a metaphor! At the end of the movie, Daniel put the shot of the horizon over the sea at sunset. It sounds like a cliché shot, but I know what he meant. He was looking at the horizon and wondering what lay beyond... far beyond. Imagine going that deep into the spirit, that could be compared to a journey to another continent. There is such a strong human ambition to always go beyond that no obstacle would be enough. Daniel died in the search for enlightenment. Our brief encounter at film school was one of the most inspiring things that has happened in my life. That's why I dedicate this dissertation to his luminous shadow.

I thought that the sea was a moment of union between rock and water, an eternal union between two things that no longer has anything to do with earthly time. Narcissus reaches eternity, that's also how it is in Ovid's myth, as a kind of punishment. But for me, Narcissus didn't want to find that, he wanted to stay on the surface, but he could no longer leave and had to get to know himself. I arrived at this multiplication of the image because of a *glitch* in the three-dimensional manipulation software. This point of view is the strangest of all, it's a point of view of thousands of universes that intersect continuously. They look like superimposed images, almost like a *latent space* of chaos simulations, each universe almost the same as the next. I wonder if there's more to it than that. If you can go even further. And I don't think so, in the eternities everything is diluted, there is no longer any direction or meaning. I always leave a moment of silence at the end of each

movie; I think it's the only moment when the viewers can think something for themselves. That's always the real goal.

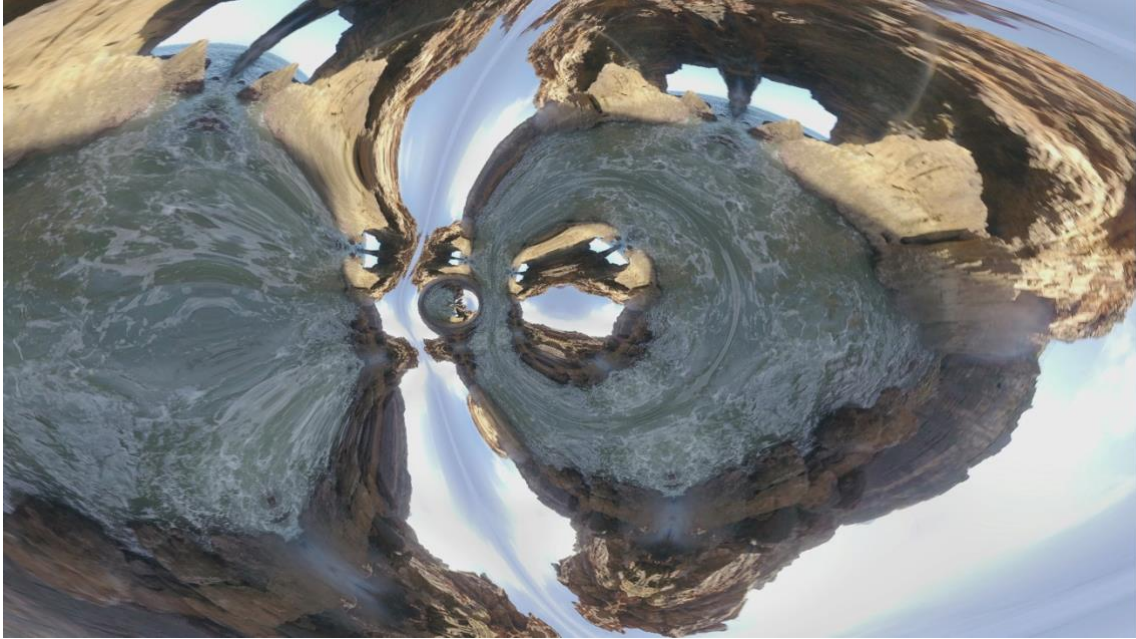


Figure 32. *Still from No te conozcas. Final sequence.*

[silence]

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