

FREDERICO PESSOA¹

THE SOUNDS OF MELTING MOUNTAINS

A Sound Cartography of Mining in Minas Gerais, Brazil

ABSTRACT

This essay addresses the sounds of Brazilian mining, focusing on the State of Minas Gerais, where two recent catastrophes occurred as a result of the collapse of mining tailings dams: Mariana and Brumadinho. The purpose of this article is to develop a sound cartography that articulates different dimensions of the exploratory processes of extractivism, an economic model that has become central in Brazil since colonial times, and which establishes a relationship with the Earth as an inexhaustible supplier of natural resources. Mining structures complex relationships that range from endless perforations of the Earth and the opening of monstrous craters that ravage entire ecosystems to capital flows that enrich the stock market, but keep the

population's basic needs unmet. The path followed in this text crosses multiple aspects that make up the sounds of mining and that are symbols of the predatory action that humans have continually exerted on their surroundings. The human species has forgotten that it is ontologically a constitutive part of the environment and that its actions result in ever-increasing changes in the fine fabric that connects beings and forms the biosphere. Mining is one of these actions and a symbol of a way of life that has led us to the critical moment we are in.

KEY WORDS: mining, neo-extractivism, sound cartography, soundscape

¹ Frederico Pessoa has obtained his PhD in Arts from the Federal University of Minas Gerais, Brazil. He is a sound artist and a member of “ESCUTAS: Grupo de Pesquisa e Estudos em Sonoridades, Comunicação, Textualidades e Sociabilidade” (research group on sonorities, communication, textualities and sociability) at the Federal University of Minas Gerais, where he also works as sound engineer.

INTRODUCTION

The human project of continuous development, technological progress and “nature transformation” (as if there were a separate entity that we could call nature²) seems to signal that our species had no limits in its ingenious capacity to create worlds and expand its own mastery over the beings that inhabit the Earth with us. Despite the image of rational superiority, this perspective led us to the moment of radical crisis that we are experiencing, where our own existence is at stake.

Designing a sound cartography of this moment not only poses the challenge of trying to understand the complex articulations between the vibrations that touch different materials, including our bodies, and the ways of life that we have built for ourselves, but also the insertion of those sounds in the network of meaning that we build from our perceptions. John Cage,³ one of the most important composers and creative minds in the field of experimental music, draws our attention to the fact that every time we listen to sounds, our mind tends to search for reasons, meanings, connections that those sounds can suggest. While writing this text, I tried to open my mind to the network that could be woven with the vibrations that sounds carry and their resonance on me. I am a Brazilian musician and sound artist, as well as a member of “ESCUTAS: Grupo de Pesquisa e Estudos em Sonoridades, Comunicação, Textualidades e Sociabilidade” (a research group on sonorities, communication, textualities and sociability) at Federal University of Minas Gerais, and have been working in the field of sound for more than fifteen years.

From my experience, I learned that to listen is to give ourselves to the multiplicity that comes upon us and that integrates our perception and thinking, our history and the meanings that we build from our being together with things. Quoting the ethnomusicologist Henry Kingsbury, researcher Tia Denora reminds us that talking about a musical object (or, in our case, a sound object) means putting it in certain perspectives, making selections and filters that delineate particular ways of relating to and understanding that object: “the act of description thus *co-produces* itself and the meaning of its object.”⁴ In this essay, the sound cartography I wish to design is not a map that reproduces a given space, but is an actual construction of a space of thought where sounds connect different times, different places, different ways of living and could lead us to a different understanding of mining in Brazil.

I want to carry out a journey, proposing a more open and crossed perception of what would be the sounds of the Anthropocene in terms of neo-extractivism in the global

² As Alyne Costa summarizes: “It is as if the Anthropocene put an end to that division that, in a way, is the foundation of the way we saw the world: on the one hand, humans acting, making history, subjects of rights, subjects with intentions acting on an environment that would be the other side of this situation: nature, an inert environment, an environment given once and for all, merely a stage or a scenario for the performance of those agents who are on the other side.” Alyne Costa, “O Antropoceno é o Nosso Tempo,” in *Habitar O Antropoceno*, ed. Gabriela Moulin, Renata Marquez, Roberto Andrés and Wellington Cançado (Belo Horizonte: Cosmopolis, 2022), 44.

³ John Cage, *Silence: Lectures and Writings* (Hanover: Wesleyan University Press, 1973), 10.

⁴ Tia Denora, *Music in everyday life* (Cambridge: Cambridge University Press, 2000), 23.

south, and specifically of mining in Minas Gerais, Brazil, being aware that it is one possible route among many others. A map is not something finished, but it remains open to movements that resize and change it, to lines of flight that can configure new maps.

The multiplicity of sounds and themes that come together under the perspective of historical-spatial intersection through which Brazilian mining originates and that we want to address, allows us to have a broader understanding of the meaning of possible changes in the ways of thinking, being and living that we must seek to attain. Sustainability proposals are not enough, as these, for the most part, do not question the capitalist mode of production and its ramifications that, as Mark Fisher⁵ puts it, are rooted in and penetrate the various systems that structure our lives, even our psychic system.

Perhaps we need to listen to the difference, the modes of production of knowledge and the relationship between beings that are sewn in Amerindian otherness, for example, that are based on “cosmopolitics” where beings are balanced in non-excludable value systems. Perhaps the first step is to broaden, deepen and decolonize⁶ our listening, so that we are sensitive and can be affected by the different conformations of the world, different ways of coexistence between beings and, with that, abandon our deafening humanity.

LISTENING AS A METHOD TO DECOLONIZE THOUGHT

This essay is an art practice-led research where I would like to try and devise a sound cartography from my personal perspective, as a Brazilian sound artist, musician and researcher, establishing a listening territory. A listening territory⁷ is a concept that evolved from my doctoral research and can be understood as a multiplicity composed of sensations, experiences, memories, knowledge and senses that cross the listener—an epistemological place that we inhabit with our ears, but that surpasses them. This place that we build up from our perceptions, reflection, histories and previous experiences, together with the different encounters we have in the process of opening our ears to the world, reflects an entire personal journey and is in constant transformation under the action of those same forces.

Listening is not just a passive reception of vibrations in our ears, it is an intentional movement of immersion in sounds and the weaving of a network of sensations, memories and meanings that can be activated by that immersion. As Salomé Voegelin puts it: “listening is not a receptive mode but a method of exploration, a mode of ‘walking’ through

⁵ Mark Fisher, *Capitalist Realism: Is There No Alternative?* (Hampshire: Zer0 Books, 2009), 19.

⁶ Decolonize in the sense of getting distance from Western rational thought, as Viveiros de Castro tells us: getting distance “from the objectivist epistemology favored by Western modernity. In the latter, the category of the object provides the telos: to know is to ‘objectify.’ Our epistemological game is called objectification; that which has not been objectified remains unreal and abstract. The form of the Other is the thing.” Eduardo Viveiros de Castro, *Metafísicas Canibais: Elementos para uma Antropologia Pós-estrutural* (São Paulo: Cosac Naify, N-1 Edições, 2015), 50.

⁷ Frederico Pessoa, “Territórios de Escuta e Imagens em Movimento: Um Discreto Deslocamento Epistemológico” (Doctoral thesis, Federal University of Minas Gerais, 2017).

the soundscape/the sound work. What I hear is discovered not received, and this discovery is generative, a fantasy: always different and subjective and continually, presently now.”⁸

We could add to it the fact that there is no way of talking and writing about sound but through a certain move that conjoin reality and fiction,⁹ an epistemic mode that has to do with what Holger Schulze delineates as *sonic fiction*, based on the work of Kodwo Eshun. In his words: “The epistemic model of sonic fictions is a performatively radical constructivist one: it assumes that all verbal . . . representations of sonic experiences are highly idiosyncratic edifices fuelled by the imagination of a group of researchers, their projections, memories, objections and fears.”¹⁰

Therefore, our outline of a sound cartography might owe more to the general idea of psychogeography, from Guy Debord, than to a scientific cartography—it is a place where “geography and psychology collide,”¹¹ but not regarded as an instrument to face an urban environment and understand how we are affected by it (as it could be understood from Debord’s position), but as a mode of opening our ears and minds to what we hear when positioning ourselves in certain places and try to put in words how we are affected by that experience.

The sound is a dynamic entity, a constantly shifting object of experience, which puts ourselves into a state of alertness. At the same time, our perception of it is not separated from the sensory data that come from our other senses, from our experience of the unstable unit formed by the interaction of our body/mind and the world. This fluctuating experience makes us stay all the time open to the unexpected, ready to grasp what comes from the senses and the thoughts induced by it. As Hildegard Westerkamp affirms: “what is stable and not shifting is the commitment to listening.”¹²

In order to make sense of what takes hold of us when immersed into that experience, we assemble a string of words hoping they will make sense to whom might listen to them—we should not forget that words are sounds too. But, we are aware that “words are not limited to conveying meanings, words are flesh, they materialize life, they foster events,” as Luis Rufino states, a Brazilian author, professor and researcher who mixes together African knowledge he absorbs from the candomblé religion with philosophical thinking, trying to make our culturally built rational truths *undulate* and, thus, open a space for decolonized thought.

Following his thinking, I will inscribe his concept of *Encruzilhada* within the methodology of this essay, as it is in a direct dialogue with subjectivity, openness, complexity and fluidity that were proposed above as intrinsic aspects of listening—forming

⁸ Salomé Voegelin, *Listening to noise and silence: Towards a philosophy of sound art* (London: Continuum International Publishing Group, 2010), 4.

⁹ We think fiction in this context in the sense that human knowledge is a cluster of narratives that are always being rephrased, extended, reduced, altered, but constructed, even if partially, with a certain amount of subjectivity.

¹⁰ Holger Schulze, “Sound as theory 1863-2014: From Hermann von Helmholtz to Salomé Voegelin,” in *The Routledge Companion to Sound Studies*, ed. Michael Bull (Oxon: Routledge, 2019), 12.

¹¹ Merlin Coverley, *Psychogeography* (Harpenden: Pocket Essentials, 2010), 10.

¹² Hildegard Westerkamp, “The disruptive nature of listening: Today, yesterday, tomorrow,” in *Sound, Media, Ecology*, ed. Milena Droumeva and Randolph Jordan (Cham: Palgrave Macmillan, 2019), 46.

an epistemological starting point for this text. *Encruzilhada*, or crossroads, is a symbolic place where different worlds meet, where mortals contact supernatural entities that influence the world and its fluxes, according to candomblé. At the same time, *encruzilhada* is a place of openness and unpredictability, where anything can happen, where paths are not set, but open to become journeys. But not only that, as Rufino says, the *encruzilhada* “emerges as a horizon for us to give credibility to the ambivalences, the unpredictability, the contaminations, the folds, crossings, the unsaid, the multiple presences, wisdoms and languages, in other words, the possibilities.”¹³ Thus, we want to let our ears and minds open to different languages, perspectives, origins, modes of speech and ways of building realities, from dreams to statistics, from the continuous movement to the apparent steadiness, from a strait walk to a sinuous stroll.

Our path will be drawn based on a free dialogue with Don Ihde’s¹⁴ idea of auditory field. The auditory field encircles us and is limited by our listening horizon, enveloping everything we can hear. It expands itself when we listen to what is far away from us, and contracts when we listen to what is close to us, gradually reducing the sum of beings that we perceive as vibrating together with us. We will start from a horizon, a broad circle that engulfs humanity: technology or, more specifically, its embodiment as mining machines. From there, we narrow the circle down to listen briefly to what the global market and its geopolitical and economic implications resound. Then, we let the African diaspora to Brazil touch our ears, resonating a trajectory that connects space and time. Afterwards, we let the silent knowledge of the first inhabitants of the State of Minas Gerais brush our timpani with their culture, their way of life and their ethical relations towards other beings. We finish this journey in Belo Horizonte, the smallest circle, the city I live in, and the capital of Minas Gerais, where there is an intense mining activity and an unbelievable amount of mining sites in its southern limits.

The final circle is, at the same time, the starting point that made me write this essay. The sounds of the locomotives running on the tracks behind my building keep startling me during nights and early mornings, dragging me away from my dreams into a roaring reality—Vale S/A locomotives and their furious thunders reverberating the sound of the melting mountains around the city.

TIMELESSNESS VIBRATIONS

A legend says that the Incas already knew that there was silver in the hill where Potosi was later founded. When the Inca emperor tried to start exploring the hill, it expelled him with a thunderous explosion (from which the name ‘!P’utuqsi!’ derives), forbidding him to extract the silver, which would be reserved “for those who would come later.” Historians estimate that this variant of the legend includes a deliberate Spanish influence to justify

¹³ Luiz Rufino, *Pedagogia das Encruzilhadas* (Rio de Janeiro: Mórula Editorial, 2019), 18.

¹⁴ Don Ihde, *Listening and Voice: Phenomenologies of Sound* (Albany: State University of New York Press, 2007).

their work on the hill [of Potosi]¹⁵—the mining enterprise. The Spaniards would be “those who would come later.”

This mythological sound marks the beginning of the first major mineral extraction enterprise that the Western world has known: the Potosi mines, situated in a locality belonging to what we now call Bolivia. For Carlos Walter Porto-Gonçalves,¹⁶ geographer, researcher and professor at the Fluminense Federal University, Potosi was undoubtedly a milestone in the intense flow of silver and gold that played a decisive role in commercial development and in the constitution of modern capitalist society.¹⁷

Nowadays, 530 years after the arrival of the Spaniards in Abya Yala (the oldest known name used to refer to a territory in the Americas), the boom of the explosions is recurrent in numerous locations in South America. However, these are not warnings or prohibitions emanating from the gods, but signs of the apparently unstoppable search for profit and the continuous reproduction of the contemporary capitalist system.

Brazil has always favoured mining enterprises, both in governments on the left and right of the political spectrum, believing in its centrality for the production of wealth, financing the country and to reach the much dreamed and desired “development,” which has always resulted in little attention given to ecological issues. Currently, in the Bolsonaro government, which occupies the extreme right of that spectrum, several government actions seek to encourage mining in all its forms: from artisanal mining to exploration by large corporations. Some of those actions are: decrees created by government agencies to encourage mineral exploration; simplified concessions (without adequate environmental impact evaluation); artisanal mining authorization in sensitive areas in the Amazon; changes to the Mining Law (originally published in 1967) to benefit corporations and prospectors; and campaigns to try to change the population's perception of mining activity.¹⁸

It should be said that the State of Minas Gerais is aligned with Bolsonaro proposals, and Zema, our governor and Bolsonaro ally, plays a very important role as a representative of the mining companies' interests and the economic elite which profit from their excavations. It is worth mentioning that those actions are not designed by a single person, like Bolsonaro, but by a large group that includes politicians, lobbyists from Brazilian and foreign companies, the OECD (Organization for Economic Co-operation and

¹⁵ Fundación Legado de Las Cortes, “Ciudad: Potosí,” last modified December 3, 2016, <https://fundacionlegadodelascortes.wordpress.com/2016/12/03/documentacion-potosi/>.

¹⁶ Carlos Walter Porto-Gonçalves, preface to *Mineração, Genealogia do Desastre: O Extrativismo na América Como Origem da Modernidade*, Horacio Machado Araújo (São Paulo: Elefante, 2020), 10.

¹⁷ Marx stated the same in *The Capital*: “The discovery of gold and argentine lands in America, the extermination, excavation and burial of the native population in mines, the beginning of the conquest and looting of the East Indies, the transformation of Africa into a reserve for the commercial hunting of negroes characterizes the dawn of the era of capitalist production.” Karl Marx, “Primitive Accumulation,” in *Capital*, trans. Rubens Enderle (São Paulo: Boitempo, 2020), Kindle.

¹⁸ Since the tailing dams collapses that destroyed Bento Rodrigues, a district of Mariana, polluted the Doce and the Paraopeba rivers, and killed 300 people in Brumadinho, the government and the companies have been trying to change the bad image of mining and its enormous impact.

Development),¹⁹ foreign and national investors, and even individual Brazilian prospectors that want a share of what the soil could place in their hands, even if the dirt is thickened by destruction and, in some cases, with blood.

THE SOUNDS OF THE MINING MACHINE

The sounds, which passively invade our ears, arrived before the image. That night, in the darkness of the dream, I heard everything banging, it was the noise of giant old ironworks. Farther away, the creaking of cranes, bulldozers and explosions persisted. The rumble of the landslides remained unseen. I knew it was a pit. Everything was still in darkness. A big bang, a pause, and suddenly, like chewing stones, the excavators advanced, bringing the sound closer to the place where I was.”²⁰

This is a dream that Simone Cortezão, a professor at São João Del Rei Federal University and a filmmaker, narrates in a short essay she has published in the journal *Cadernos Benjaminianos*. Cortezão was born and raised in Coronel Fabriciano, one of the cities that are part of the Vale do Aço (steel valley), a region known nationally for its production of steel. Her films deal with the impact of mining on people and places, based on her memories and experiences, as well on what she sees, hears and feels nowadays regarding mining in Brazil. The mining machines invade her dreams, turning them into nightmares that disturb not only what is around her, but her most inner being.

The sounds of mining resonate in the bodies that work in it, whether they are more or less *machinic*; they resonate in the beings that inhabit the E(e)arth,²¹ in its surface and depths; spreading in continuous movement, expanding the field and the incidence of the disruptive action that mining means. In this essay I would like to use the word earth spelled as E(e)arth in order to combine two different and complementary meanings of that word: the planet where we live and the soil over which we live and from which we get different means of surviving. In this way, we keep in mind that mining affects at the same time the soil and the region where it is practiced, as well as the whole planet we cohabit with other beings. This spelling is by Wellington Cançado, architect, professor at the Federal University of Minas Gerais and editor of an extremely relevant Brazilian publication regarding contemporary political issues entitled *Piseagrama*.

¹⁹ Since there is no space here to detail the questions involved, I indicate the OECD Review of Regulatory Reform in Brazil, which analyze the situation of the country in different areas and indicate actions to be taken, or changes to be done, in order to improve its relation with the international market, that can be accessed here: <https://www.oecd-ilibrary.org/sites/d81c15d7-en/index.html?itemId=/content/publication/d81c15d7-en>.

The review uses the words “improve competition” and “best international practices” repeatedly in the text, but I believe we should start questioning those words if we want to think about other practices, like those we can find summarized in this book: *Pluriverse: A Post-development Dictionary* (New Delhi: Tulika Books and AuthorsUpFront, 2019).

²⁰ Simone Cortezão, “O som das Escavadeiras,” *Cadernos Benjaminianos* 13, no. 1 (2017): 169, doi: 10.17851/2179-8478.13.1

²¹ E(e)arth [T(t)erral], Wellington Cançado, *Sob o Pavimento, a Floresta: Cidade e Cosmopolítica* (Doctoral thesis, Universidade Federal de Minas Gerais, 2019), 21.

A wide range of capital and efforts are directed towards the production of new technologies and machines for drilling, excavating, processing and transporting ore, which add new sound spectrums, rhythms, pulsations and cadences to the process of tearing up the earth, subduing it, and turning it into a commodity. The vibration of matter, be it more or less compact, more or less shaped, moves and touches other forms and substances until it reaches the thin membrane of our eardrums or the soft layer of sensitive tissue that covers our entire body. I have made a playlist of videos in which one can check the enormous size of some of these machines and their respective sounds that can be found on YouTube.²²

Perhaps, in this context, we can hear those sounds as the rawest and most direct symbol of the hegemonic perspective of human's technological domination over the E(e)arth—a symbol, even if partial, of what led us to this critical moment we are living in. I have played a sound performance recently that made use of sounds from the mining machines (that was the reason I have searched for the mentioned videos). I have also used the sounds of probes that investigate space and are symbols of the limitless extension of the human arrogant attitude, as well as recordings of news and obnoxious pronouncements of our current president. This performance was called “Transmitting life from deep black holes,” and its audio recording is available at Bandcamp.²³

The machines produced by humanity are capable of subduing the sounds of other terrestrial beings both because of their intensity and the wide spectrum they often occupy. The machines compete with the immemorial (and often mythical) sounds like thunders and their transforming power over what they touch. But the machines are not part of the organic processes of change and balance of the systems that create and support life on E(e)arth, although they act directly and deeply on their modification. A mining pit is an enormous dead space in terms of beings other than machines. All the life that surrounded the area where it is excavated disappears and the ecological balance of the region is broken. Mining changes and pollutes water courses, destroys forests, and expels animals from where they were settled and kills forms of life that live under the surface. The only sounds we can hear around a mining pit is the roaring sounds of the excavations.

The E(e)arth became the object of interventions on a planetary scale and was inserted into the framework of this system of thought that institutes the human/natural dichotomy. This perspective assumes human as the being that eclipses the others in its ability to tame the natural and transform it according to its needs. In the case of mining, the E(e)arth becomes purely a source of resource to feed human desires that extend from the machinery of urban-technological culture, built with metals extracted from it, to the luxury of adornments made from the same origin and with elements from the same “family.” The E(e)arth is never seen as the basis of what we call life, as the origin and sustenance of multispecies beings that combine in multiplicities which design and

²² Fredericopessoa, “machines for turning, drilling and excavating the E(e)arth,” YouTube, April 27, 2022, video, <https://youtube.com/playlist?list=PLbeHEX7kM-NwoxxbwoDe7BykTmBnOlurX>.

²³ Frederico Pessoa, “Transmitting Life From Deep Black Holes,” released June 27, 2022, Bandcamp, digital release, <https://fredericopessoa.bandcamp.com/album/transmitting-life-from-deep-black-holes>.

redesign spaces, ways of life and interactions between differences: “If we agreed at some point to call all this Nature, it was largely so that we could maintain the ‘critical distance’ necessary to subjugate it to human purpose and, once the world became spiritless, to redesign it as a great repository of natural resources and an inexhaustible and benevolent supplier of raw materials.”²⁴

GEOPOLITICAL REVERBERATIONS

In 1949, the President of the United States Harry Truman, in the inaugural speech of his second term, known as *The Four Point Speech*, corroborated the universalization of the developmental discourse and pointed out the need for action in the “underdeveloped” nations: “Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. . . . Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas.”²⁵

The sound of the word ‘development’ still vibrates in the minds of congressmen and women, presidents and elites in Latin America, and acts as a determinant for many choices regarding how the economy of those countries should be conducted. In the 21st century, many years after Truman’s speech, the ideas of global north and south are not literally understood as geographical positions, but as geopolitical and economic positions. In this way, the global north can describe “both the historically dominant nations and the colonized but prosperous elites of the south.” Similarly, the global south can be taken as “a metaphor for exploited ethnic minorities, for women in rich countries, and for historically colonized or ‘poorer’ countries as a whole.”²⁶

Unfortunately, the threat that Truman felt hanging over his world is still present, and has been updated through a mixture of surveillance technology, intense armed vigilance, and political actions to mitigate illegal crossing of borders. The sound of sirens and police officers’ shouts can be heard even from a long distance, and they resonate in the watchmen’ shouts and their brutal actions against possible invaders at wealthy condominiums in the biggest cities of South America.

The sounds of industrialization and development carry with them the sounds of different languages, slang, colours, ethnicities and origins—often people who believe they have no perspective, no future, and dream of living in better places. Time and again they throw themselves to death in crossings by sea and land, leaving a trail of bodies in sandy deserts or floating on the waves of the sea. The sounds of industrialization and development include the sounds of shipwrecks, the sound of drying flesh, in the salt and in the sun, the sounds of dreams and despair and, mainly, of exclusion, barriers, walls,

²⁴ Wellington Cançado, *Sob o Pavimento, a Floresta: Cidade e Cosmopolítica*, 24.

²⁵ Harry Truman, “Inaugural Address” (Harry S. Truman Library, 1949), <https://www.trumanlibrary.gov/library/public-papers/19/inaugural-address>.

²⁶ Ashish Kothari, Ariel Salleh, Arturo Escobar, Federico Demaria and Alberto Acosta, *Pluriverso: um dicionário do pós-desenvolvimento*, trans. Isabella Victoria Eleonora (São Paulo: Elefante, 2021), 36.

refugee camps and prisons.

Since the colonial times, Latin American countries have been significant suppliers of raw material for developed economies and their industries. Discussing the theme, Araújo points out that our societies were shaped by extractive regimes: “extractivism is the perennial mark of our colonial origins . . . extractive regimes are, neither more nor less, the structural basis of the geosocial formations characteristic of colonial-peripheral-dependent capitalism, they express the specific modality of capitalism in the periphery.”²⁷

Even so, many leaders from all regions still believe that the idea of development and the practice of extractivism should not be off the agenda and that they still are the economic lifeline for many countries. They seem to forget the constitutive complexity of powers, exchanges, historical processes, institutions, negotiation instances, controlling agencies, financing structures, external interference, fierce disputes, confrontations, bargains and, time and again, unilateral impositions that are involved in the construction of what we call economy, and that there is no simple response to economic questions.

Thus, in our cartography of sounds of the Anthropocene with a focus on the mining industry, we could add as essential to the symbolic construction and maintenance of this era, the voices of power that design the world and distribute wealth, rights and duties, building political geographies far from the real integration between the global and the local. Voices that spread a hegemonic perspective, silencing alternatives, prescribing ways of doing and being justified by the God Market (or Market as God) and that are not bothered by the hunger that knocks at the back door.

THE PIERCING SOUNDS OF THE AFRICAN DIASPORA

Ouro Preto (Vila Rica), as it turned into a place of intense gold extraction, became the capital of Minas Gerais between 1720 and 1897, reaching a population of around 40 000 inhabitants. Nearby Mariana, the first city of the Captaincy of Minas Gerais, was also part of the Gold Cycle, as the period of intense exploitation of the mineral in the region during the 18th century came to be called. Like gold, the exploitation of diamond mines was a source of wealth for the Portuguese crown in the colonial period and the Arraial do Tejuco, latter renamed as Diamantina, was the center of its production. It is estimated that around 800 tons of gold were sent to Portugal and destined for different European economies through partnerships, treaties, debts and commercial demands between the countries.

The period that comprises the gold cycle in Brazil is part of a mercantilist mode of production, or the initial conformation of capitalism, in which colonialism and the exploitation of slave labor were central. Colonialism was based on an ideological construction that determined a hierarchy between origins, fictitiously inscribing a European superiority over African people that allowed all forms of inhuman treatment towards these populations and their disposition as things. Africans who were brought to Brazil faced the diaspora against which they strongly fought, counting deaths in Africa, on

²⁷ Horacio Machado Araújo, *Mineração, Genealogia do Desastre: o Extrativismo na América como Origem da Modernidade*, 275.

slave ships and on arrival in the new land. At the colony, they got to know the structures of captivity, control, repression, torture and barbaric punishment that annihilated part of their people, and deeply marked their bodies.

The structure of control, repression and slavery punishment authorized the “owner” and his foremen to lash the slaves, in private or public spaces, in order to subjugate their bodies and minds. In addition, slave owners could use various instruments of torture and even kill his slaves if they didn't follow their rules.²⁸ Obviously, although official history tends to obscure their value, numerous uprisings have taken place throughout this history, including the creation of “Quilombos,” settlements founded by black men and women who escaped slavery and fought for their freedom, permanence in new lands and maintenance of their way of life, social practices and beliefs in those localities.

In this way, as we “extend our ears” to the founding time of mining practices in Brazil, practices that developed, deepened, became more complex and resulted in contemporary mining corporations and in the mix between dependence on the productive system (under the national control) and dependence on the *enclave*²⁹ situations that they feed, the sounds that we will be able to hear will be those of whips, instruments of torture, the screams of pain and agony of enslaved populations. In addition to those, we will hear the screams of rebellion and the sounds of uprisings in opposition to slavery and the racism inherent to it, the sounds of songs and music, of the multiple languages of African origin that coexisted and mixed in this new territory that little by little Africans were entering, taking it for themselves and rebuilding it to make it theirs, disregarding their executioners.

However, even today the dispute for the recognition of rights, for access to tangible and non-tangible “goods,” for socio-cultural and educational insertion, by black Brazilians is difficult and object of continuous opposition. Hegemonic groups time and again appeal to a myth of racial integration and common origin of Brazilian people, to erase racism with a few words, but keeping it alive in their actions. I am a black man, although in Brazil, my skin colour is perceived as a little bit more favorable to the establishment and its structural

²⁸ It is important to emphasize that the dehumanization directed at the subjugated populations returns to the executioner, as Aimé Césaire showed us: “colonial action, the colonial enterprise, the colonial conquest founded on contempt for the native man and justified by this contempt, inevitably tends to modify the person who undertakes it; that the colonizer, by getting used to seeing the other as an animal, by training himself to treat him as an animal, objectively tends, in order to take the weight off his conscience, to transform himself, in animal.” Aimé Césaire, *Discurso Sobre o Colonialismo*, trans. Claudio Willer (São Paulo: Veneta, 2020), 23.

²⁹ “In enclave economies, foreign capital invested originates abroad, is incorporated into local production processes . . . Its value increases with the exploitation of local labor forces [and] when raw materials are sold on the external market. In economies controlled by the local bourgeoisie . . . The starting point for capital accumulation is therefore internal. . . . insofar as the commodity consists of raw materials and food products, the international market is necessary to carry out the final stages of the circuit of capital.” Fernando Henrique Cardoso and Enzo Faletto, “Repensando Dependência e Desenvolvimento na América Latina,” in *Economia e Movimentos Sociais na América Latina*, ed. Bernardo Sorj, Fernando Henrique Cardoso and Maurício Font (Rio de Janeiro: Centro Edelstein de Pesquisa Social, 2008), 14.

racism.³⁰

Quilombolas are direct descendants of the Africans that came to Brazil during colonization, fought for their freedom and created the Quilombos. Many communities of Quilombolas, at this very moment, are fighting for the ownership of their ancestral lands, and to have their way of life and their ancestral practices and knowledge recognized by the Brazilian government and population. In Minas Gerais, the N'Golo, Quilombola Federation of Minas Gerais, focused on the riverside communities of the Doce river, have been holding meetings, offering classes, promoting discussions, producing manifests, and participating in marches for the rights of their communities. Many of them are continuously threatened by mining and its consequences, as well as by farmers, prospectors and *grileiros*.³¹ At the same time, they are unceasingly fighting to be heard, have their rights recognized and be accepted as an important part of Brazilian population and an important voice regarding mining and environmental conservation.

THE EAR-SPLITTING SOUND OF SILENCE

Mineral extraction has become the focus of most economic projects in Brazil and the State of Minas Gerais, where I live: it is estimated that 67% of the country's mineral reserves are found in Minas Gerais and, in 2014, Minas was responsible for 47% of mineral extraction in the country. One of the two largest mining areas in Brazil, the so-called Quadrilátero Ferrífero,³² is located in Minas Gerais. About 44% (258,610 km²) of the area of the territory of my State has mining sites already authorized or awaiting authorization for their exploitation.³³ That is, about half of the entire territory of the State of Minas Gerais is currently being excavated by mining machinery or will be in the near future. When I read this, I feel like the ground is vanishing under my feet. It feels like a nightmare I cannot escape from. In that nightmare, I am sure that sooner than I can imagine there will be no E(e)arth, only dust, floating silently in space.

In 2015, the company Samarco (whose parent companies are Vale S/A and BHP Group Ltd) was responsible for one of the biggest ecological crimes in recent Brazilian

³⁰ Structural racism, according to what the professor, researcher and author of the book *What is Structural Racism*, Silvio Almeida said in an interview given for the website of the Central Unica dos Trabalhadores, "is a process in which the conditions of organization of society reproduce the subalternity of certain groups that are racially identified." The interview can be read, in Portuguese, here: <https://www.cut.org.br/noticias/saiba-o-que-e-racismo-estrutural-e-como-ele-se-organiza-no-brasil-0a7d>.

³¹ I could not find a proper translation for this word, but it means a relatively wealthy and powerful person who invades federal lands, takes hold of it, falsifies property titles and starts selling it.

³² Organisation for Economic Co-operation and Development, "Desempenho Recente do Setor de Mineração no Brasil," in *Governança Regulatória no Setor de Mineração no Brasil* (Paris: OECD Publishing, 2022), <https://doi.org/10.1787/df9252dc-pt>.

³³ Vanessa Leite Rezende, "A Mineração em Minas Gerais: Uma Análise de sua Expansão e os Impactos Ambientais e Sociais Causados por Décadas de Exploração," *Sociedade e Natureza* 28 (2016): 378, <https://doi.org/10.1590/1982-451320160304>.

history.³⁴ The collapse of a tailings dam in Mariana caused the destruction of extensive green areas and diverse ecosystems, covering the community of Bento Rodrigues with toxic mud, and killing the Doce river, whose basin extends from the center of the State of Minas Gerais to the north of the State of Espírito Santo, where its mouth is located. Countless communities and urban areas along its path had their livelihoods and water supply affected. Communities of indigenous peoples who inhabit the river basin, such as the Krenak, were enormously impacted, as the river was not only their source of water and food, but also occupied a sacred place in their way of life.

The collapse of the dams and the consequent leakage of tons of toxic mud could be heard in the distance. The explosive sound of the rupture and the rumblings caused by the movement of the toxic mud that flowed down the mountains was recorded by the unsuspecting people, surprised by the scale of what they were witnessing and who, luckily, were not directly in the path of the avalanches. Human devastating action reproduced, once again, a divine warning, but the sound was not interpreted as it had been in Potosi. The mining continues as strong as ever and the companies are increasingly working to maintain and expand their area of operation, assuming the role that was played by the Spanish conquerors in the history of the “Cerro de Potosi.”

The southern economies don't seem to have understood the complex dimension that neo-extractivism³⁵ constitutes in the networks of export of raw materials, circulation of capital, economic power, market control, insertion in the world economy, and thoughtless and unbalanced relationship between the local and the global (both in economic and political terms). They seem to nullify the pollution of rivers, contamination of water sources, destruction of fauna and flora, disruption of ways of life, subjugation, silencing and displacement of populations, and the disruptive and high-intensity sound production that are directly connected to that economic model.

But the sounds of mining are not just the explosive sounds caused by the sudden and destructive ruptures of the dams loaded with toxic material, nor are they limited to what their machines produce when drilling, excavating, upturning, collecting, sieving, moving, processing and refining the ore. The voices of the populations directly affected by the mining enterprises, who want to be heard and have their demands met, are one of the dimensions that make up the mining sound complexity.

Native populations, such as the Pataxó, the Krenak, the Xakriabá, who have inhabited Minas Gerais since time immemorial are continually affected by the disruptive actions of the mining corporations. Their traditional ways of life excel in the balance

³⁴ In 2019, the company Vale S/A was responsible for another catastrophe: the collapse of one of its dams killed about 300 people, mostly company workers, polluted one of the main rivers in the region, the Paraopeba, displaced countless people and affected ways of life associated with the river, such as the Pataxó and Pataxó Hãhãhães ethnic groups whose villages were located on its banks. Destruction and death flowed along with the immeasurable volume of polluted mud.

³⁵ BBC has published an illustrative, although short text about the recent boom of commodities and the role of Latin America as an exporter of natural resources. It can be read here: Cecilia Barría, “Maldição dos recursos naturais: por que o atual boom das matérias primas pode não beneficiar tanto América Latina como em outros tempos,” *BBC News Mundo*, July 30, 2022, <https://www.bbc.com/portuguese/internacional-62304530>.

between their action and the ecosystem to which they belong and their relationship with their surroundings is one of sensitive and broad listening to the beings that live around and with them.³⁶

In the context that we are now discussing, since the discovery of the first veins of gold in the Captaincy of Minas Gerais (in fact, since the Portuguese invasion of the coast of Pindorama³⁷), this population has been attacked, vilified, brutalized, enslaved, displaced, expelled from their lands, murdered, erased, silenced and made invisible. Their voices, their demands, their values and their vision of the E(e)arth are systematically nullified. Not only the Brazilian political class, but a good part of the country's population does not understand their culture and does not accept their way of life. Recently, the Brazilian government and the Chamber of Deputies have signaled their intention not to demarcate indigenous lands anymore and to allow the exploitation of prospecting and mining even in the lands previously recognized as areas of traditional occupation by those populations.

Paradoxically in this case, the sounds of the Anthropocene are also the sounds of silencing, distortion of speech and deafness—not listening to differences and trying to convert native populations to the western way of life is a constant practice of the Brazilian government. We could add to our cartography the sounds of violent killing, extermination of entire villages (adults, children, men and women alike), burning of houses, rapes, and countless ways of silencing, weakening, hurting, hunting and eliminating those populations.³⁸

Ailton Krenak, representative of the Krenak ethnic group, born in Minas Gerais, in the Doce River basin, environmentalist, philosopher, writer and forceful voice who has been representing his ethnicity and fighting to make the voices of native populations of Brazil heard, has been writing texts, participating in meetings, seminars, discussions and movements to disseminate their perspectives and demands. Krenak exhorts us:

We have to stop developing and start getting involved . . . I wonder how many lands these people need to consume before they understand that they are on the wrong path. . . . if we realize that we are undergoing a transformation, we must admit that our collective dream of the world and the insertion of humanity in the biosphere will have to happen in another way. . . . Life goes from the oceans to the mainland, crosses from north to south, like a breeze, in all directions. Life is this crossing of the living organism of the planet in an immaterial dimension. . . . Either you hear the voice of all the other beings that inhabit the planet along with you, or you wage war against life on Earth.³⁹

³⁶ “Numerous ethnic groups (perhaps all) of the New World share a conception according to which the world is composed of a multiplicity of points of view: all existents are potential centers of intentionality, which apprehend the other existents according to their own respective characteristics or powers.” Eduardo Viveiros de Castro, *Metafísicas Canibais: Elementos para uma Antropologia Pós-estrutural* (São Paulo: Cosac Naify, N-1 Edições, 2015), 42.

³⁷ A word from the Tupi-Guarani languages used by various indigenous ethnic groups to refer to the large region they inhabited at the time of the Portuguese invasion, the eastern regions of what we now call Brazil.

³⁸ Nowadays, Minas Gerais is not the site for the killings of environmentalists that we can see in the media as the Amazon is. In my State, the killing is silent: it happens through the destruction of localities, modes of surviving, expelling of populations, pollution, and governmental acts that benefit corporations instead of people.

³⁹ Ailton Krenak, “Sonhos para adiar o fim do mundo” e “A máquina de fazer coisas,” in *A vida não é útil* (São Paulo: Companhia das Letras, 2020), Kindle.

A few months ago, I have recorded a soundscape in the city of Ouro Preto, Minas Gerais, in a small forest flanked by an avenue and surrounded by houses, on a Sunday morning.⁴⁰ I have captured a myriad of birds singing their songs at dawn, but the “voices” of those birds were repeatedly overcome by the broad spectrum and high intensity sounds produced by those simple locomotion machines created by humans and built up from different metals, rubbers, plastics, fossil fuels and other substances extracted from the E(e)arth: automobiles. Therefore, through a simple act of displacement supported by our technology, we silence the voices of other beings, and remain deaf and encapsulated in our soundproof cocoons.

Another important leader is Celia Xakriabá, *poetry-woman*, part of the National Articulation of Indigenous Women, recently elected congresswoman, who holds a PhD in Anthropology from the Federal University of Minas Gerais. Celia says that her central fight is for territory, but territory means much more than land to her:

We can ask what territory is for us, indigenous peoples. You can't answer in a sentence, in a song, in a book, you can't answer in a single voice. Our body is earth, the earth is body, our body becomes earth. . . . we need to tame those brave people who are poisoning the earth, and we also need to *bichificar*⁴¹ people instead of civilize them. What civilization is this that allows mining in indigenous lands? What is this 21st century project that costs people their lives? An anti-environmental, anti-land, anti-life, anti-people, anti-humanitarian project? We don't want to be that kind of civilized human. Only those who know how to be a river, who know how to be land, who know how to be food, who have the ability to *bichificar*, know how to be human.⁴²

At the same time, we can listen to thousands of voices that fight to be heard but that, as native populations, are not waiting for the powers-that-be to do something for them. We can find a list of institutions, groups and movements that are fighting to keep the rivers of Minas Gerais free of pollution or depollute them, to preserve forests or replant them, to stop mining in certain localities, to produce pesticide-free food, as well as fighting for their rights and their way of life. The book *Seres-ríos*,⁴³ which is part of our bibliography, lists those initiatives located along the basin of the rivers Doce, Jequitinhonha and São Francisco, the biggest and most important rivers of the State of Minas Gerais.

⁴⁰ The recording can be heard through this link on Google Drive: https://drive.google.com/file/d/1yIqeEkRFLBBReRujQWLdKv_XMeXytMLW/view?usp=sharing.

⁴¹ Celia Xakriabá means we have to learn how to become animals and other beings, how to feel like them, how to relate to other beings like they do, how to relate to each other and to the environment like they do. She says that the indigenous people know how to understand other beings, listen to them and feel what they feel, which is one of the reasons they are really mingled with their territory.

⁴² Celia Xakriabá, “Corpo-Terra: como amansar Gaia?” in *Seres-ríos*, ed. Gabriela Moulin, Bernardo Esteves, Júnia Torres, Marcela Bertelli, Wellington Cançado, Felipe Carnevalli e Paula Lobato (Belo Horizonte: BDMG Cultural, 2021).

⁴³ An online version can be accessed through this link: https://drive.google.com/file/d/1tt-iVMEvtL8cpqZ6HXmoMM6I59wtXuT_/view?usp=drivesdk.

THE SOUNDS OF A MELTING MOUNTAIN

Belo Horizonte, the modern capital of the State, was designed and installed where Curral Del Rei used to be, a stopping point for travelers in transit through Minas Gerais. Although it is an urban center, it has not strayed from the mining history of the State: around the city, mainly to the south, we find immense craters, continuously upturned in search of iron ore (also manganese, aluminum, gold, silver, among others), which came to replace the gold and diamond deposits as the main suppliers of “wealth” and sign of “progress” for the State of Minas Gerais and for the country (in addition to those who trade with it, exert influence or even control its economic and political conduct).

Several companies and conglomerates have mining areas in the southern surroundings of the city, with dimensions that sometimes exceed the area occupied by an entire neighborhood.⁴⁴ Satellite images of the region allow a visualization of this reality and the comparison of the dimensions occupied by the mining areas and the surrounding villages.

The reverberation that mining induces is not limited to the immediate surroundings of its excavation sites. Day and night, countless locomotives loaded with ore travel through the center of Belo Horizonte, bound for the country’s ports and, from there, abroad, aboard huge vessels whose small crew is the antithesis of the tons of “raw material” they transport. The urban conformation, which makes intense use of raw material extracted from the E(e)arth to maintain its way of life, based on the generalized commodification of things and beings, on exclusion, and on a profound impact on the biosphere, imagines itself protected from the consequences of its actions. But the locomotives that transport the ore rumble on its doors to remind them of the origin of its “goods” and comfort:

I live on the bank of a river, if you look on the map it is the River Doce. The Krenak call it *Wātu*. It was shaped by mining mud to produce cities. We were on the path where the thing that produces cities passes, the body of the river was devastated to make way for the production of cities. It is the ore, that ore indispensable for the reproduction of the urban way of life. ‘Eat up to the mountain’, as Drummond said, the poet who spent his whole life saying that they were eating Pico do Cauê (Cauê summit) and other mountains. He also said that they were eating Serra do Curral⁴⁵

⁴⁴ Some of them are: Vale S/A (Aguas Claras mine, Mutuca mine, Capão Xavier mine, Mar Azul mine, Córrego do Feijão mine, Jangada mine, Capitão do Mato mine, Tamanduá mine, do Pico); Mineração Santa Paulina Ltda; Itaminas Comércio de Minérios S/A (represented by Bernardo Paz, founder of the Inhotim Museum); Mineral do Brasil Ltda; Tejuçana Mineração S/A; Empresa de Mineração Esperança S/A-Ferrous Emesa; Mineração Usiminas Mina Central S/A; Extractive Mineral Ltda; Vallourec (Pau Branco mine); Herculano Mineração; Gerdau (Varzea do Lopes mine), AngloGold Ashanti (Lamego mine), Cedro Mineração (do Gama mine); Pedras Congonhas Extraction Art Ind. Ltda; Anex Mineração S/A; SAFM Mineração).

⁴⁵ At this very moment a popular movement entitled “Tira o Pé da Minha Serra” (take your foot off my mountain) is taking actions, together with congressmen and women to stop mining at the Serra do Curral. But the fight faces the barrier built by the recently re-elected

(Cural mountain range) in Belo Horizonte. If you want to see what happened to Serra do Cural, go look on the other side of the Serra, on the Nova Lima side, in Raposos. Look at the hole in the back of the Serra.⁴⁶

The sounds that the locomotives produce are caused both by their diesel engines, powered by fossil fuel also extracted from the core of the E(e)arth, and by the friction of the wagons against the rails, amplified by the weight they carry and which presses them against the ground. Nearby houses and apartments are often within a walking distance from the tracks (my apartment is one of those) and not only listen to the noise of the machines but also feel the intense vibrations they produce: the physical structures of the residences vibrate in consonance with the locomotives, conducting low-frequency waves, sometimes inaudible, to the bodies that inhabit those spaces and, with that, actually altering even their internal systems.⁴⁷

After being continuously affected by their sounds, I've decided to make a composition based on recordings of those locomotives in their transit on the tracks close to my window. It was played in a few radio shows and sound art events, like Monteaudio 2021-Derivación (Uruguay), As If Radio transmission during the 26th United Nations Climate Change conference in Glasgow (Scotland), and a reduced version at SoundPedro Festival, in Los Angeles (USA).⁴⁸

The frequency of circulation of locomotives through the city center demonstrates the intensity of the mineral extraction that the company Vale S/A is undertaking at this very moment. Over the years that I have lived at this address and in nearby streets, I have noticed the sharp increase in its traffic on the tracks, indicating the voracity of neo-extractivism, which is endorsed by the increasing profits that the company announces in its half-yearly balance sheets, continuously counted in the tens of billions of reais, and in the large distribution of dividends to its main shareholders: Mitsui & Co. Ltd, Capital Research Global Investors, Previ (Brazilian), Blackrock Inc, Capital World Investors, Capital International Investors. Mining revenue grew 118% in Minas Gerais in the first three months of 2020, generating a total of 28 billion reais, with the extraction of 227 million tons of ores, of which iron accounted for 70%.

Along with the sounds of locomotives, we can add to our sound cartography the sounds of trading floors, the stock exchanges, the silent online transactions that raise and

governor, Zema, who fosters mining as the most important economic enterprise for the State.

⁴⁶ Ailton Krenak, "Saíam Desses Pesadelos de Concreto!" in *Habitar O Antropoceno*, ed. Gabriela Moulin, Renata Marquez, Roberto Andrés and Wellington Cançado (Belo Horizonte: Cosmopolis, 2022), 218.

⁴⁷ When discussing the effects of sound vibrations on our bodies, Cowan, in his book *The effects of sound on People*, highlights how low-frequency sounds, even at moderate intensity, affect our physiology, increase the levels of hormones such as cortisol circulating in our system, and provoke feelings of stress, even if we do not associate them with the sounds that vibrate in our surroundings. James P. Cowan, *The Effects of Sound on People* (Chichester: John Wiley & Son, 2016), 85-86.

⁴⁸ Frederico Pessoa, "the sounds of a melting mountain, or neo extractivism in the global south," released March 28, 2022, Bandcamp, digital release, <https://fredericopessoa.bandcamp.com/album/the-sounds-of-a-melting-mountain-or-neo-extractivism-in-the-global-south>.

erase economies in the blink of an eye, the jingle of coins and the voices that sound on cell phones and that govern the world economy, without worrying about peoples and nations.

THE INAUDIBLE SOUND OF A MOVING BODY

Our journey ends where it started, our own selves, in a spiral that keeps expanding and contracting, broadening our listening horizon, and taking us back to our bodies and the resonance that those vibrations produced in us. More than conclusions or findings, it is about whether we let ourselves be affected and open our ears and minds to understand a bit more the complexity of sounds, ways of living, ways of thinking, memories, speeches, bodies, cultures, movements, rights, preconceptions, battles, and power that are involved when we hear the word “mining.” In other words, how we shaped our listening territory as we walked the path proposed in this essay. It is not about answers, for there is no easy and prompt answers available. It is about experiencing other listening places and, maybe, rethinking our own positions.

In this way, maybe it wouldn't be right to try to summarize what can be extracted from that journey, because each reader will make his or her own connections. A text is a net of words that make sense to those who can entwine with it, which means one should let himself or herself be carried by and at the same time move together with those words and let them mingle with other webbings they have already woven throughout their lives.

We listened to sounds connected to the way we are choosing to live, which depends on the extraction of tons of minerals, and that we know has no future. We tried to remind ourselves that there are lifestyles more attuned to the other beings that inhabit our planet and that we have to listen to the voices of those people and their singing, because through their singing they can connect forces that surpasses our feeble humanity.

Maybe, as Ailton Krenak says in his text *Dreams to Postpone the End of the World*, we should learn to consider what the world of dreams can tell us about the world we call reality. Since most of us are having nightmares about the end of our world, we should start choosing what other dreams we can have about our reality, or what sort of reality we want to dream about. Dreams are not only dreams for the Krenak, they are “an institution that prepares people to relate to their daily lives. . . . To dream is a practice that can be understood as a cultural regime . . . a place for the transmission of affections, with a broad meaning, [which refers to] the way dreams affect the world of the senses.”⁴⁹ Maybe, instead of having my dreams torn by Vale's locomotives roaring sounds, I should start dreaming a world without them and then maybe I can envision a way to not need them anymore. ▣

⁴⁹ Ailton Krenak, “Sonhos para adiar o fim do mundo,” in *A vida não é útil* (São Paulo: Companhia das Letras, 2020), Kindle.

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