


Ontological Techno-Extractivism, the Amazon NFT Case: “Buy NFTs to Save the NFT,” said Leviathan 5.0

Tecnoextrativismo Ontológico, o Caso Amazônia NFT: “Compre NFT para Salvar NFT”, disse Leviatã 5.0

*Frederico Salmi¹ 

*Lorena Cândido Fleury² 

Abstract

This article presents the original concept of ontological techno-extractivism based on a case study: Amazonia NFT (Non-Fungible Territory). In methodological terms, three fields are approached (Science and Technology Studies, the Sociology of Critical Utopia and the Sociology of Climate Change), and at the interpretative-critical level, it mobilizes critical narrative analysis. As a result, seven groups of human and non-human agents are identified, made up of some central ideological-utopian figures (e.g. ancestry, artificial agents, climate philanthropist) and a configuration understood as Cyber-Climate Leviathan or Leviathan 5.0.

Keywords: ontological techno-extractivism; politics of climate change; science and technology studies; critical utopia; Amazon NFT.

Resumo

Este artigo tem a originalidade de apresentar o conceito de tecnoextrativismo ontológico a partir de um estudo de caso: Amazônia NFT (*Non-Fungible Territory*). Em termos metodológicos, três campos são aproximados (Estudos Sociais das Ciências e das Tecnologias, Sociologias da Utopia Crítica e das Mudanças Climáticas) e no nível interpretativo-crítico é mobilizada a análise crítica de narrativa. Como resultado são identificados sete grupos de agentes humanos e não humanos compostos por algumas figuras ideológico-utópicas centrais (e. g., ancestralidade, agentes artificiais, filantropo climático) e uma configuração entendida como Leviatã Ciberclimático.

Palavras-chave: tecnoextrativismo ontológico; políticas de mudanças climáticas; sociologia das ciências e das tecnologias; utopia crítica; Amazônia NFT.

¹ Federal University of Rio Grande do Sul, Institute of Philosophy and Human Sciences, Postgraduate Program in Sociology (PPGS/UFRGS, Porto Alegre, RS, Brazil). ORCID: <https://orcid.org/0000-0002-7043-2816>.

² Federal University of Rio Grande do Sul, Institute of Philosophy and Human Sciences, Postgraduate Program in Sociology (PPGS/UFRGS, Porto Alegre, RS, Brazil). ORCID: <https://orcid.org/0000-0001-9659-8630>.

Introduction

Like all the others [scientists], and for the same reason, sociologists work on the Leviathan. Their work is to define the nature of Leviathan whether it is unique or whether there are more than one, what they want and how they transform themselves and evolve. (Callon; Latour, 2015, p. 298)

This article presents a new type of extractivism, identified through a case study of the technology company Nemus and its narrative-technological practices in indigenous territories in the Amazon Region, in particular among the Apurinã peoples of the Baixo Seruini/Baixo Tumiã Indigenous Land. The main technological practice is anchored in the infrastructure of the Non-Fungible Token (NFT), while the narrative practices are composed of a set of ideological and utopian figures with a climate-saving horizon.

Our aim is to fill a gap in the production of research on the issues of climate and technology in Brazil's social sciences. Recent studies have shown that less than 5% (five percent) of these scientific productions originate from this field, especially sociology (Salmi; Fleury, 2022a), with most of these works in the area of the Sociology of Science and Technology (David *et al.*, 2022) and the Sociology of Critical Utopia (Salmi; Fleury, 2022b).

In sociological terms, this article is about the kind of technoscientific monsters produced and fed by a rentier extractivist neoliberal ideology. Sociopolitical hybrid entities that devour ancestralities, ontologies and outer epistemologies. Monsters and configurations that compose a complex technopolitical grammar of the climate. Utilizing a Science and Technology Studies (STS) framework, the text is inspired by the seminal arguments of a "sociology of monsters" (Law, 1991), as well as critiques of the power relations between technology, science and politics, especially the perspective of the Sociology of Artificial Intelligence (AI) and the Sociologies of Critical Utopia and Climate Change (Elliott, 2022; Feenberg, 2017; Lindgren, 2023; Salmi; Fleury, 2022b; Urry, 2016). Our intention is to present a new ideological-utopian configuration by mobilizing the concept of the Leviathan. This is activated through the conceptual framework of STS, understood here as a political ideology optimized by contemporary digital technoscience. Conceived as a metastructure,³ the figure of the Leviathan helps us comprehend some of the sociopolitical processes of the digital age and the foretold political-climate apocalypse.

Ninety-nine per cent of humanity may be living among the ruins externalised by contemporary neoextractivist neoliberalism (Brown, 2019; Caillé, 2020; Haraway, 2016). Yet following the digital revolution (including blockchain technology, cryptocurrencies, algorithms and artificial intelligence) new ontological-epistemological spaces are being produced and with them new macro-entities and meta-structures, some updated to the new techno-economical context.

These hybrid macro-entities (human and beyond human, biotic and artificial) perform new technopolitical practices adapted to this reality – a reality that is also hybrid and imposes itself on all living beings inhabiting a finite planet. The technological utopia of yesteryear (Law, 1991) transforms into a vivid digital neoliberal

³ A *meta-structure* is understood as a particular type of subjective structure in the same terms as the concept of *metacoalition*, which,, broadly speaking, organises imaginaries, practices and structures (Salmi; Dowbor; Fleury, 2024).

dystopia. Criticism of the forms in which this neoliberal monster has been adapted and appropriated in the digital era has generally focused on the presentation of its effects – normally unequal, whether in different spaces (physical or digital) or on different agents (biotic or artificial) – with an increase in social, digital and ecological inequities⁴ (Freller, 2023; Silveira, Souza; Cassino, 2021).

The current era of global warming adds yet another layer to this scenario. The accelerating effects of contemporary climate change are now observable to the naked eye, so too the growing social and climate inequities (Dunlap; Brulle, 2015; Elliott, 2018). Some empirical examples are extreme climate events (increased intensity of extratropical cyclones in the southern region of Brazil, record temperatures in the Caatinga, Cerrado and Amazon biomes, longer dry seasons in the Pantanal, not to mention a variety of other extreme climate events in other areas of the planet). All these events affect diverse communities and societies in quite diverse ways.

In this context, there is also a new emerging phenomenon that is invisible to human eyes, yet some of its effects can be captured with new frameworks generated through a convergence of fields within the social sciences, especially sociology. Faced with technological accelerationism and the advance of an extractivist techno-neoliberal ideology (such as dataism, algorithmism, platform capitalism and carbon capitalism), it is not easy to observe with human eyes some of the macro-entities that are taking shape in the present era, in particular in the dimension of the intangible, the imaginal and the thought.⁵

Here we shed light on new forms of technological extractivism, adapting the concept of Climate Leviathan (Wainwright; Mann, 2018) to comprehend how an actualization or upgrading of this sociopolitical metastructure is now taking place. Based on the premise that active and decentralized digital technologies like blockchain platforms, cryptocurrencies, complex algorithms, machine learning and artificial intelligence have recently become public, Climate Leviathan adds the technological realm as another form of extractivism.

The Methodological Path

The technoclimate social phenomenon analyzed in this study centres on the empirical context of the company Nemus and its narrative-technological practices, a social assemblage understood here as a sociological object of a technopolitical grammar. The article's objectives are to: 1) identify the human and non-human agents involved in this technopolitical network through the 'Amazonia NFT' phenomenon-event; 2) identify the ideological and utopian figures mobilized to construct a narrative in

⁴ We approach socioecological and climate inequity from the conceptual framework of a socioclimate ethics (Salmi, 2023b; Salmi, Canova; Padgurschi, 2023; Salmi; Fleury, 2022b) that, broadly speaking, frames the paradigm of the society-nature dichotomy and the forms of recognising other non-human agents as political subjects. This difference is important since, unlike the concept of iniquity, the concept of inequality (social or ecological) does not include a series of paradigms from political ecology and the sociology of climate change.

⁵ These dimensions are part of the framework of the sociology of knowledge, especially the Collective Imaginary, which is based on the premise that there are two major indissociable domains: the material and the imaginal. While the material as a sociological object is associated more with the school of materialism, the imaginal is associated more with constructivism. For more on this kind of approach, see the Sociology of Critical Utopia (Salmi; Fleury, 2022b).

support of the techno-extractivist ideology, 3) comprehend the dynamic involved in these figures, and 4) present the ideological-utopian configuration that emerges from the analysed case.

To achieve these objectives we analyze the case of the Non-Fungible Territory project, also known as 'Amazonia NFT,' developed by the Nemus corporation-foundation, mobilizing for this purpose the Sociology of Critical Utopia (El-Ojeili, 2020; Salmi; Fleury, 2022b) and the Sociology of Science and Technology (David et al., 2022; Feenberg, 2017), both of which intersect with the Sociology of Climate Change (Dryzek; Norgaard; Schlosberg, 2011; Fleury, Miguel; Taddei, 2019; Salmi; Fleury, 2022a).

In this study, we also used two confluent methods of data collection: netnography (Kozinets, 2014; Polivanov, 2014) and participant observation in a digital environment (Polivanov, 2014). However, the classical structure of these two techniques was not employed in a strict sense: instead, we pursued what we call a *participant netnography*: physical and digital notebooks were used to collect data from the X platform (formerly Twitter) and repercussions were observed and recorded through participation in the digital groups forming the Climate Observatory (Observatório do Clima, Brasil) network.

The Amazonia NFT case was captured from the digital ecosystem of the Climate Observatory coalition. The case under analysis was first observed in digital space (X/Twitter) through posts by the user InfoAmazônia, an organisation-entity that owns Plenamata. The latter is a scientific platform that monitors socioenvironmental and climate problems and uses, among other technologies, Mapbiomas as part of its technopolitical assemblage. Mapbiomas, in turn, is a technoscientific platform organised by the Climate Observatory. As part of the methodological procedure, featured posts with a high level of social interaction (for example, criteria from the Ecomídia Platform), when associated with hyperlinks to another platform (like news sites, YouTube, Instagram), were tracked through diverse types of cyberspace (entering the content of the hyperlinks or on other web 2.0 or 3.0 platforms) until we reached the kernel of the thematic content focused on by a given micronarrative – in this case, the 'Amazonia NFT' phenomenon-event. We note that the present work does not seek to discuss the methodological limits and potentialities of the current strategy in further detail,⁶ though it may open pathways for future studies.

After data collection, we organized the data and information in order to discover which agents occupy decision-making positions – or, in terms of the politics of the gift, the *decision-making agents* who act in networks of collective utopias (Martins, 2023, p. 206) and the other agents mobilized around the ontological-epistemic axis under study. This axis is configured by two cores of meaning: 1) anchored in the ways of living and inhabiting of the Apurinã indigenous peoples of the Baixo Seruini/Baixo Tumiã Indigenous Land (ancestral ontology and indigenous epistemology); and 2) anchored in digital technology, especially in the platforms based on blockchains and NFTs or non-fungible tokens (algorithmic ontology and technoliberal epistemology).

⁶ One of the practices used is a deliberate increase in the interactions with selected posts by the researcher by making interventions such as 'liking,' 'retweeting' or 'commenting.' The aim is to reinforce or maximize interactions with content modulated by the algorithms within the infobubble generated by the platform. By using this strategy, more posts connected to the initial connected post emerge from the platform's digital soup and thus more material (new posts related to the phenomenon-event of the 'Amazonia NFT') can then be collected for later analysis.

For this analysis, we turn to the concepts of the Sociology of Critical Utopia – utopia as a sociological method and as an analytical category (El-Ojeili, 2020; Salmi; Fleury, 2022b) at the intersection with the framework of the ontological turn of the Sociology of Climate Change and Science and Technology Studies (STS) in Brazil (David et al., 2022; Fleury, Miguel; Taddei, 2019; Salmi; Fleury, 2022a) – in order to focus on the ideological and utopian dimension of this technopolitical network. It should be emphasized that Science and Technology Studies are mobilized within the nexus of Critical Theory (Feenberg, 2017) so as to enable critical utopia to be approximated with an SCT framework. In this sense, the category-concepts of an *imagined future* as a social fact (Beckert; Suckert, 2021) and of both *sociotechnical* and *sociopolitical networks* are utilized as complementary analytic vectors.

A critical narrative analysis is mobilized at the critical discursive-interpretative level for contexts in which the climate is problematized as a sociopolitical force (Clot-Garrell, 2023; Moor, 2022; Salmi, Fleury; Dowbor, 2023). The objective of this type of analysis is to identify the ideological or utopian figures, as well as to comprehend how they are configured in order to foment and increase the density of the cores of political-discursive meaning, and, finally, to stabilize a technopolitical conglomerate or a utopian ideological macro-entity.

In sum, the present work addresses four questions: 1) Who are the human and non-human agents involved in the technopolitical network of the ‘Nemus Non-Fungible Territory / Amazonia NFT’ phenomenon? 2) Who are the ideological or utopian figures mobilized to construct the ever-shifting narrative? 3) What kind of macro-entity emerges from this dynamic? And finally 4) What is the resulting ideological-utopian configuration?

Results: Groups of Ideological-Utopian Technoclimate Vector Figures

To answer the first question – Who are the human and non-human agents involved in the technopolitical network of the ‘Amazonia NFT’ phenomenon – we present seven groups (Box 1). Each group is understood as a specific set of agents from this technoclimate collective utopian network who ultimately structure and dynamize ontological techno-extractivism.

Box 1 – Ideological-utopian groups and figures of ontological techno-extractivism

n.	Type of Utopia or Ideology	Figures involved	Examples
1	techno-liberal; techno-extractivist	Technology, Capital	Nemus company and foundation
2	digital; synthetic	Technology	Blockchain platforms, NFTs, cryptocurrencies.
3	ancestral; retroopia	Ancestral	Indigenous peoples, Indigenous Land (IL), ‘Forest Guardian’
4	normative	Legal regulation	Notary offices, National Congress, Federal Public Prosecutor’s Office

5	contestatory	Metacoalition, Communication	Observatório do Clima, Brasil de Fato, Mongabay, InfoAmazônia.
6	positivist	Science	Universities and research centres like ESALQ/USP
7	aesthetic	Art	Illustrations, graphic designers

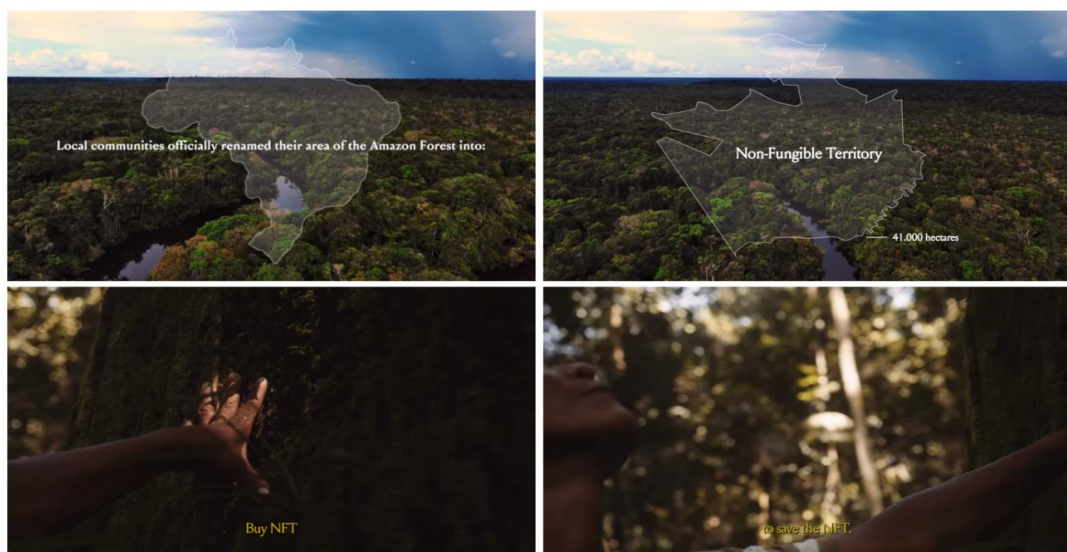
Source: Authors.

The first group is a cluster guided by a techno-liberal ideology: the company Nemus (ideological creator and operator) is the materialization of this extractivist ideology – a type of extractivism that is not material but ontological. The following are empirical examples produced and published by Nemus on its platform-website:

Guardians are the primary driver of activity in the ecosystem. Guardians have the ability to purchase NFTs, and either conserve, or explore these NFTs to enhance their collection. They also play a pivotal role in deciding the types of activities that take place on the land through participation in the Nemus DAO. [...] Calling All Guardians. The means to protect the rainforest have historically been limited. Old ways aren't working. Nemus invites you to join a generation of Guardians who will fix this. (Nemus, 2023a).

From a legal perspective, Nemus is a company headquartered in Brazil that operates globally in diverse types of cyberspace. On its LinkedIn page, the company describes itself as a corporation that works with “philanthropic fundraising services” (Nemus, 2023b). The official website declares: “Nemus is a collectible NFT experience designed to conserve; protect the Amazon Rainforest. Visit the app, buy your tickets, and prepare to enter the rainforest!” (Nemus, 2023a).

Figure 1 – Nemus’s ‘Non-Fungible Territory’ (Amazonia NFT) project and the slogan ‘Buy NFT to save NFT’

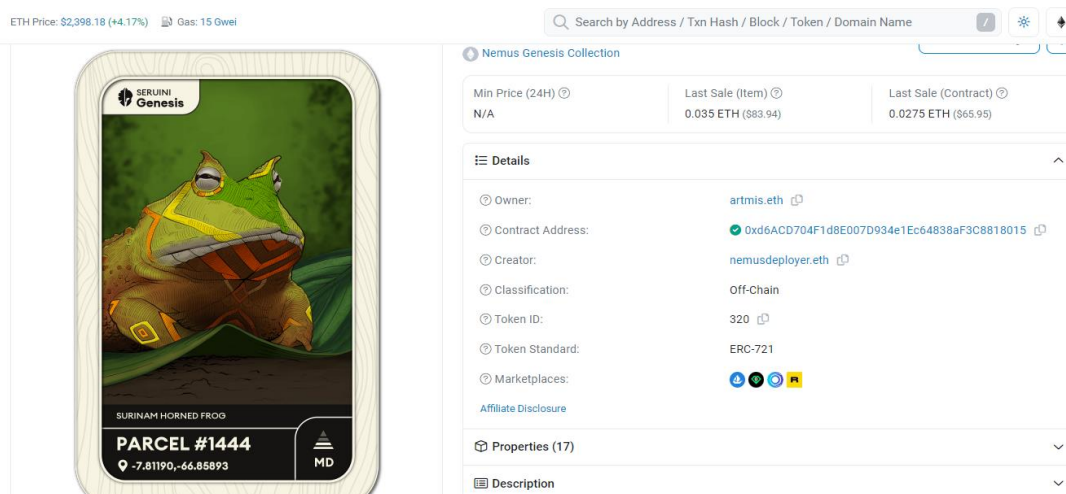


Source: Authors. Based on a selection of outtakes from a Nemus promotional video (Non-Fungible [...], 2023).

From the sociological perspective, Nemus is a social assemblage of a techno-extractivist ideology (Figure 1) dynamized by figures like Technology (such as creating artwork with NFT technology) and Capital (such as selling this technological content). The creation of 'Nemus NFTs' is made possible by combining technoeconomic power (technological knowhow) with the extractivist thirst that coopts indigenous communities as a horizon of a preservationist utopia of a threatened biome: the Amazon. Strategies like changing the name of the indigenous village to Non-Fungible Territory (see the fourth cluster: the legalist) and putting it up for sale is the expression of this kind of technoclimate dystopia.

The second group is identified as a type of cluster anchored in a digital utopia. Blockchain platforms, NFTs (non-fungible tokens) and Ethereum cryptocurrencies (Etherscan, [2023])⁷ are material examples (that operate in digital spaces). Also considered artificial agents are the YouTube and Twitter platforms (Nemus, 2023c), both mobilized by the neoliberal technological agent Nemus, in addition to the companies Open Sea, LooksRare and Coinbase NFT (Figure 2).

Figure 2 – NFT Nemus Genesis Collection on sale on one of the blockchain platforms



Source: Authors. Based on a selection of images from the Etherscan site (2023).

Narrative examples include the content created for the Nemus website, such as: “Blockchain: The Missing Link. Nemus merges the power of NFTs and cryptocurrency with real-world initiatives to conserve our forests” (https://nemus.earth/pt_br/) and the nexus between liberal dystopia and indigenous ecotopia: “The Nemus NFT. All it takes to become a Guardian is to acquire an NFT. NFT holders gain access to DeFi and game mechanics to earn rewards and optimize their collection” (Nemus, 2023a).

As an empty signifier,⁸ the ‘Forest Guardian,’ when incorporated directly with the technological dimension, becomes a content inoffensive to the technology-consuming public⁹ that is one of Nemus’s targets.

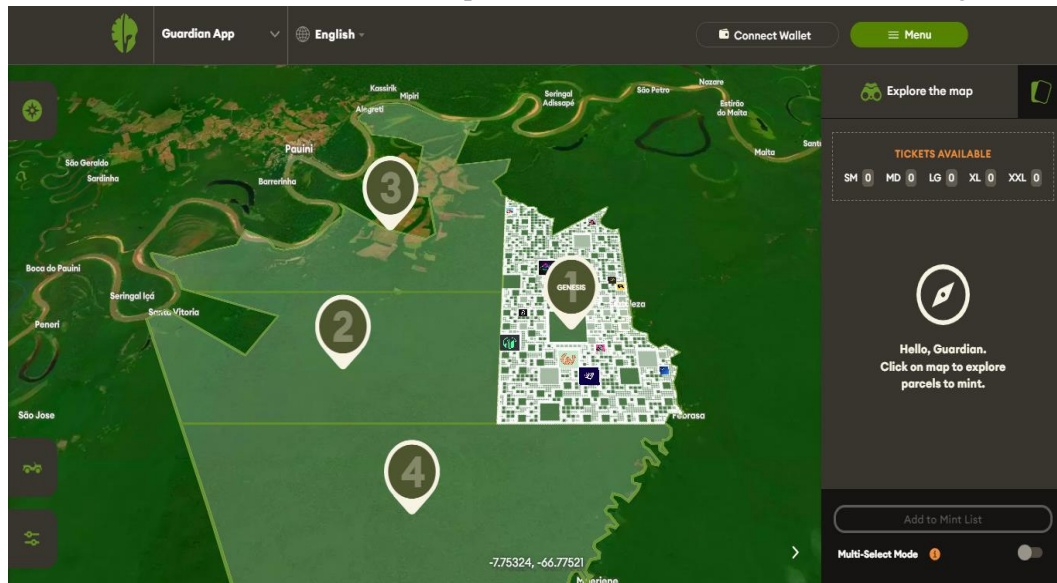
⁷ One of the 78 NFTs traded as “Token Nemus Genesis Collection (NEGEN)” (Etherscan,[2023]).

⁸ The focus of this work is on NFT technology; some important contextualizations need to be made, therefore, regarding the definitions of what is understood by NFT from different viewpoints, in particular technological and legal – since from the sociological viewpoint, NFT is understood as an empty signifier (in the terms posed by Laclau: see Coelho; Almeida, 2021) – and thus a sign disputed by different social groups.

⁹ From a purely technological viewpoint, NFT is defined as “a technology that allows the distributed registering of ownership of a non-fungible asset [a Non-Fungible Token]; hence NFT is a token or a certificate that proves ownership of exclusive items” (Mendonça et al., 2022, p. 53; our emphasis).

Figure 3 shows how NFT technology captures indigenous ontology. The map presents the NFT ‘lots’ purchasable by users-consumers. On the blockchain and cryptocurrency platforms, Nemus NFT is mobilized by the techno-liberal ideology in cyberspaces that are not regulated in Brazil,¹⁰ but are kept deregulated by digital oligarchies like Big Tech. Along this line, rather than *extractivist territories* – in Svampa’s terms (2023) – we understand the ‘NFT lots’ as *digital territories* in an extractivist regime and more under an extractivist process oriented towards mining the ancestry of indigenous territories.

Figure 3 – Sales of NFT lots in the Apurinã Baixo Seruini/Baixo Tumiã Indigenous Land



Source: ‘Map’ tab on the Nemus website (2023a).

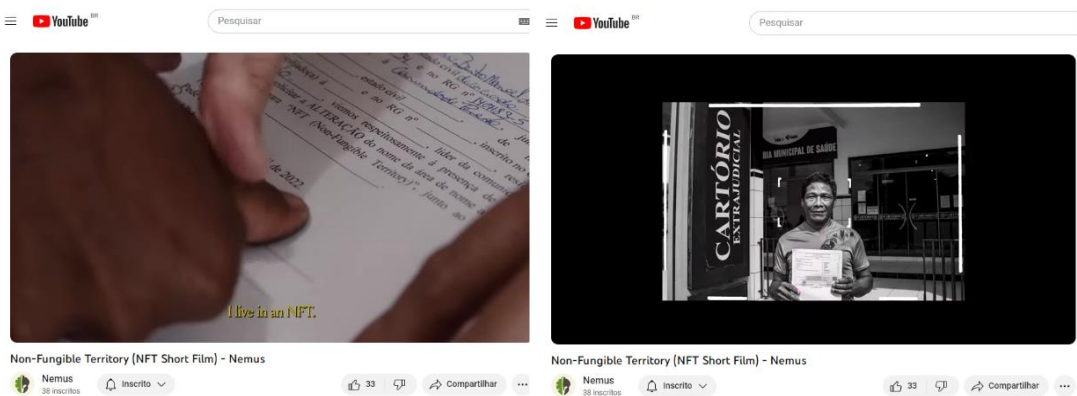
The third group is anchored in a type of ancestral utopia. This type of utopia can be observed in the presence of indigenous peoples in Brazil, in particular in the Baixo Seruini/Baixo Tumiã Indigenous Land (IL) of the Apurinã. Among this group we cite the National Foundation of Indigenous Peoples (FUNAI), understood here as entity that induces¹¹ the originary ontology of these indigenous peoples in Brazilian territory. Also part of this group is the third sector entity the Indigenist Missionary Council (CIMI) – an organisation linked to the National Conference of Bishops of Brazil (CNBB) which today works on behalf of Brazil’s indigenous peoples. As well as these entities, other collectives associated with a type of ecotopia or retropia can also be added to this nucleus of a sociopolitical vector that indeed aims to preserve indigenous peoples and the Amazon forest in all its dimensions.

¹⁰ For example, Law Bill 1420/2022 aims to “regulate the drafting of public deeds relating to legal transactions involving the transfer of crypto assets” (cf. Law Bill n. 1420 of 2022, though it is currently stalled in the National Congress). It is worth emphasizing that in December 2022 another Bill that became law covered “money laundering, to include virtual service providers in the list of its provisions” (Brazil, 2022).

¹¹ We stress that the organizations linked to indigenous affairs like FUNAI, CIMI and CNBB are entities of western ontology that, as Svampa (2023) writes, are *indigenist* organizations (they defend indigenous rights) but not *indigenous* organizations (entities organized by indigenous peoples themselves like the Articulation of Indigenous Peoples of Brazil). However, we also emphasize that indigenist organizations, in defending indigenous rights or Nature, are promoters – from an epistemological perspective – of ancestral ontologies.

The fourth group is anchored in a *legalist* ideology-utopia – in the sense of legal order formulated by Honneth (Fraser; Honneth, 2003). The Federal Public Prosecutor’s Office (*Ministério Público Federal*: MPF) is one example of this kind of entity. Also in this cluster is the National Congress, irrespective of its internal organization; in other words, both the Chamber of Deputies and the Federal Senate are understood as entities that produce a legal-legislative order legitimized in some form by part of the population. In this sense, the National Congress is understood as a high-density association that produces politically and legally mediated normativities. Also in this group we can cite the Ministry of the Environment and Climate Chamber (MMA) and the new Chamber, created in June 2023, called the Sector Chamber of Guardians of Biodiversity. We can also highlight another figure, the machine of documentary-legal legitimization: the Notary Office (Figure of Legal Regulation). This entity produced the formalization (legitimation of the techno-liberal ideology) of the name of the indigenous land as a ‘Non-Fungible Territory’ without any criticism from the local Notary Office or the state bodies that legitimize(d) this onto-epistemic extractivist practice of the indigenous peoples.

Figure 4 – The legitimization of ontological techno-extractivism



Source: Authors. Based on a selection of outtakes from a Nemus promotional video on YouTube.

Note: Left, the “alteration of the name of the area” to “Non-Fungible Territory” and right, one of the representatives of the indigenous people.

Note that the signature (Figure 4), that is, the legitimization, is made by the *digital impression* of the indigenous representative – and, by promoting an audiovisual product to publicize the *new name* of the indigenous area as a “Non-Fungible Territory,” we can also observe how the onto-epistemic extractivist practices, as well as being explicit (widely publicized via the YouTube platform and other digital media), are also *normalized* as if practices of sequestering the ancestrality were an everyday occurrence in the state spaces that have, in principle, the function of safeguarding the fundamental rights of all citizens in Brazilian territories, including indigenous peoples.

It can also be noted that the most recent publication of the National Council of the Public Prosecutor’s Office (CNMP, 2023, p. 14, our emphasis) states that:

[...] there is a *significant deficit in the implementation of the National Civil Defence Policy* and in the integration between Civil Défense’s in the three branches of power, as well as in the policies of territorial planning,

urban development, healthcare, social welfare, the environment, *climate change*, water resource management, geology, infrastructure, education, *science and technology* and other sector-based policies.

Furthermore, in the CNMP’s report on “Socioenvironmental disasters and climate change,” there is no mention of digital assets, cryptocurrencies, blockchain technologies, NFTs or any other industry 5.0 technology. Broadly speaking, in Brazil there is no sociopolitical axis for regulating or modulating these technologies more emphatically.

The fifth group is anchored in a utopia of contestation (Cruz, 2011), that is, the cluster includes entities that have a social role of disseminating data, denunciations and the contestation of hegemonic events that are difficult to visualize. These practices are informed by a critical journalistic perspective. Examples of these entities are the Climate Observatory network itself, understand as a *metacoalition* type of figure¹² – that is a figure that interconnects and organizes other organizations and networks like InfoAmazônia – and journalistic organizations like Brasil de Fato (Pajolla, 2022) and Mongabay (Bispo, 2023). These entities are directly associated with the figure of Communication, especially those mediated by social media and platforms with denunciatory content, as well as other digital communication platforms with a socioenvironmental and/or climate content.

The sixth group is anchored in *positivist utopia*, especially the digital technological utopia. This type of synthetic utopia,, when associated with the climate issue, becomes a vector added to the technoeconomic agenda (Salmi, 2022b). In this group, the entity identified is the Luiz de Queiroz College of Agriculture of the University of São Paulo (ESALQ/USP). When a (scientific) knowledge practice of a recognized identity like USP is mobilized on behalf of a technoeconomic ideological agenda oriented by the illusion of saving an ontology (in this case, the ontology of Brazilian indigenous peoples) without performing any kind of criticality (Figure 5), this becomes another element legitimizing ontological techno-extractivism.

Figure 5 – The Amazonia NFT project at an event co-coordinated by Nemus and ESALQ/USP



Source: Authors.

Note: Based on a selection of images obtained from the Nemus account on X/Twitter (right) and the official website of ESALQ/USP (left).

¹² The figure of the *metacoalition* is organized in super-assemblages that operate in the material and imaginal dimensions synchronically. See the discussion on metacoalitions and climate social movements in Salmi, Dowbor; Fleury (2024).

The seventh and final group refers to the artists and designers, such as the illustrator of one of the Nemus NFT collections (Figure 6), Ben Kwok, and Concept Art House. This group is anchored in a type of artistic utopia and mobilizes figures like Aesthetic and Art and others linked to the dimension of the abstract and the sensible.

Figure 6 – Exclusive digital art for Nemus’s Amazonia NFT project



Source: Authors. Based on images taken from the Etherscan website ([2023]).

The 78 artworks of the tokens from the Nemus Genesis Collection (NEGEN) are examples of the aggregation of the aesthetic layer as an element configured in this narrative with a mask of utopia but with an onto-extractivist techno-liberal skin. We can note that aesthetics is a structuring element since it is guaranteed to be found in the other clusters.

These seven groups of agents are configured as a collective utopia that starts to produce ideological or utopian figures. The *ideotypical* figures are understood as brinks in a narrative that organize a macro-entity. The latter possess a utopian mask but a techno-extractivist neoliberal skin.

Figures that Inhabit the Cyberbelly of the Cyberclimate Leviathan

The response to the second question (Who are the ideological or utopian figures mobilized to construct the ever-shifting narrative?) can be synthesized by the configuration/hybridization of ideological-utopian figures, some more central: the Ancestor (identified in the case study as the ‘Forest Guardian’), Technology (like ‘NFT’ and blockchain technological platforms) and Capital (like the climate philanthropists and the sales processes for the NFTs produced).

The socioclimate phenomenon ‘Amazonia NFT’ can be understood as a composition derived from a dynamically stable assemblage. The latter is composed of a series of ideological-utopian figures in hybrid confluence, which are mobilized by the different human and non-human agents cited in the previous section. This configuration can be understood as an extractivist neoliberal ideological constellation. A constellation oriented by practices of epistemic shielding (lack of knowledge of the

technological apparatus – in the terms formulated by Lafuente and Parra¹³ – by indigenous peoples) and cultural shielding (lack of reciprocity and the exchange of knowledge – in the terms of critical multiculturalism, in the sense of Svampa¹⁴ and Žižek¹⁵). This constellation effects a new onto-epistemic domination.

How does this constellation/configuration take shape? On one hand, we can identify figures that are clearly ideologically in kind – that is, figures that, when activated, tend to increase social, economic, ecological and climate inequality (NFT platforms, the notary machine, user-consumer connections – web 3.0). It should be emphasized that some figures may transit between an ideological dimension and a utopian one,¹⁶ depending on how these figures are configured in specific spaces and networks. In this sense, blockchain technology can be conceived as an empty signifier – in other words, while the figure is initially anchored in a fake utopian figure (as in the case of the ‘Amazonian NFT’ project), the blockchain technology itself can be conceived as a utopian structure insofar as it operates in a decentralized and, in principle, autonomous fashion on the part of its users. Nevertheless, when configured in a capitalist logic, this same technology becomes dynamized in an ideological process or, seen from the viewpoint of critical utopia, in a dystopian process.

On the other hand, there are utopian figures like the Forest Guardians (APIB, 2023) – a figure coopted by Nemus and packaged as a ‘Guardian of Indigenous Land’ in a technological mask (‘Non-Fungible Territory’) (NFT, 2023). The point of inflexion is contained in the fact that the figure of the guardian – who can be attributed a meaning associated with protection, especially the preservation of life – is captured by an extractivist techno-neoliberal dystopia. In the case analyzed here, we can observe through the prism of critical utopia that this figure is, initially, “projected to conserve and protect the Amazon Rainforest” (Nemus, 2023a). When this figure is configured in a utopian assemblage, the figure of the *Forest Guardian* possesses a political force whose vector involves the emancipation from dominant systems of an oppressive nature – as exemplified in the case under analysis of the ‘Ato pela Terra’ (Stand for the Earth) event (Salmi, 2022a). Nonetheless, because the figure of the *guardian* is an empty signifier, the Climate Leviathan (Wainwright; Mann, 2018) can be understood here as a Cyberclimate Leviathan, since it realizes a type of technological appropriation, that is, it takes possession of this sign (the protector), reordering it as a *technological forest guardian*. In the case studied, there is consequently a technological and ontological appropriation. So it mobilizes its technological expertise (mobilization of the NFT technology) not to save indigenous peoples and their ancestral territories (saving and protecting the local ancestry), but to produce content that becomes marketable for private profit.

The configuration of the figure of the technological expert (Technology) – in the sense of Stengers-Latour (Latour, 2004; Stengers, 2018) – identified in the narratives on the use of blockchain technology and cryptocurrencies, in particular in the assemblage of the Nemus NFT, is another essential dynamic of this techno-extractivist dystopian

¹³ In line with the conceptual framework of ‘liberal techno-utopia’ (Parra, 2022), yet in a configuration that does not provoke reactions through cybernetic control: instead it produces a cybernetic smoke screen vis-à-vis the dominated subjects, rendering them passive in relation to the technological apparatus that begins to order their lives in digital spaces.

¹⁴ Especially in the relationship between the new practices of neoliberalism in Latin American countries and the new practices used to dominate indigenous peoples (Svampa, 2023).

¹⁵ Here we refer to the illusion of a hybrid multicultural coexistence (Žižek, 1997).

¹⁶ We stress again that this mobility between an ideological facet and a utopian facet is based on the understanding that every ideological or utopian figure is an empty signifier.

constellation. This configuration is understood via the argument that "[...] science as an ideology legitimates many other activities in a meta sense, thus becoming a complex, embedded authority for rationalization, sexism, racism, economic competitiveness, classification and quantification" (Star, 1991, p. 32).

As our case study demonstrates, alongside science, technology as an ideology also legitimizes new authorities and, moreover, produces new ideological metastructures with utopian masks. The articulation between Nemus and a scientific organization legitimized in its epistemic space, ESALQ/USP (Science), makes the 'Amazonia NFT' project not only legitimate but also worthy of trust for all those unfamiliar with the multiple technological layers involved, as well as for the potential consumers of art and/or individual philanthropists who wish, in principle, to help protect the Amazon Rainforest and the indigenous peoples who inhabit these native territories.

In this sense, Science becomes a technological dystopia by associating itself – without any adequate investigation or one informed by the social sciences – with Nemus's operations. Damonte *et al.* (2022, p. 6) argue that "expert or technical knowledge is used as an ideological basis for imposing their control over water." In the sphere of digital technology, experts, whether those of Big Tech or corporations like Nemus, mobilize this technological knowledge as an ideological base – or a dystopian base from the viewpoint of critical utopia – for imposing their control over bodies and ancestral territories and, deeper still, over the ontology of the Apurinã peoples of the Baixo Seruini/Baixo Tumiã Indigenous Land (IL).

In relation to contemporary *digital art* – in particular the digital art anchored in blockchain and NFT technology, understood here in terms of the aesthetics of the culture industry (Adorno, 2023) – we make use of the complementary argument that "art [...] as a complex (semiotic, material, biotic) manifestation [...] actuates networks of materialities and sociabilities, and constructs singular ways of narrating, positioning itself, selecting and constituting reality" (Guzzo; Taddei, 2019, p. 84). In this vein, a narrative anchored in the *Forest Guardian* (Ancestral), when associated with the digital aesthetic of the Technocene-Capitolocene¹⁷ (NFT as a figure of Technology and Etherium as a figure of Capital), not only begins to actuate the network of sociability of indigenous peoples but also is easily coopted and mobilized by extractivist techno-liberal ideology.

Furthermore, this extractivist techno-liberal ideology begins to transit freely in digital space, especially web 3.0 (blockchain platforms, spaces for trading NFTs and so on). This type of cyberspace is of no interest to state agents, much less techno-liberal groups. At most, there are proposals for law bills that are both superficial and making slow progress through legislatures¹⁸ that ultimately comprise an illusion that modulates this politico-techno-liberal ideology. Announcing itself as a *philanthropic* company (Climate Philanthropy), Nemus aims to foster a subjectivity anchored in a utopia of the gift – in the sense of a collective Utopia with democratic intentions (Martins, 2023). On

¹⁷ The aesthetics of the Technocene is understood in terms of the assemblage of human subjectivities mediated by technological processes (Mateo, 2020), while the aesthetics of the Capitolocene is understood in terms of the same type of agency but mediated by aesthetic processes.

¹⁸ While in some regions of the planet, such as the European Union, the organizations are pushing for the regulation of digital networks and technologies based on artificial intelligence (see, for example, the European Parliament, 2024), in Brazil the few bills regulating new technologies (such as the regulation of disinformation and deep fake content spread by social media) are still in their infancy (for instance, Law Bills 21/2020 and 2338/2023).

a technological level, however, resulting from the mobilization of the figure of the *technological expert* on blockchain and cryptocurrency platforms (Technology), it centralizes this epistemology of technology for technology's own sake. This point can also be observed in the practice of *not sharing* this type of knowledge with indigenous peoples: in other words, the Ancestor becomes a passive agent in this technological assemblage, despite the physical contact between Nemus's agents and members of the indigenous population. The asymmetry is both ontological and epistemological.

Epistemic sequestration, for its part, occurs in relation to indigenous peoples since these same technologies and economic processes (Capital) are configured so that the sales take place in digital space without any contact (by consumers-users in digital space) or any direct exchange of ancestral knowledge with the indigenous peoples with whom the 'Non-Fungible Territory' (Amazonia NFT) was constructed. Along these lines, technological *appropriation* processes had previously been understood as a set of practices carried out by the most vulnerable communities to reduce social asymmetries/inequities (Rivoir; Morales, 2019). However, the present case study demonstrates that this technological appropriation is *also* perpetrated by groups that dominate the technology itself – such as the appropriation of the blockchain structure and the creation of new NFTs for the ontological exploitation of indigenous peoples. In other words, there is not just a technological appropriation but also an ontological one.

On the technopolitical level, moreover, while "datafication and dataism, as technologies of knowledge and power, prosper through the techno-liberal informational onto-epistemology" (Parra, 2022, p. 363), technology does not drive social change alone (Sancho-Garcia; Ivorra-Alemañy, 2022), but in the present case we argue that there is a process of datafication of the ontologies of indigenous peoples and this produces technologically-mediated ontological extractivism – as well as the epistemological sequestration of these ancestral peoples. In this case, the blockchain platforms and cryptocurrencies modulated by Nemus (datafication of indigenous ontology) foster an ideal ideological space for consumers-guardians who wish to "protect the Amazon Rainforest" but consuming cryptocurrencies.

Operating among the narratives constructed by Nemus is a logic that makes its discursive construction explicit on both the physical and digital levels. Nemus states that it collaborates with teams "on the ground" and "in the ether" (Nemus, 2023a). This type of multispatial operation (on both the physical and digital planes) refers to the construction of ideological narratives pulverized in various spaces – regardless of the public involved. This type of dystopia understands that spaces should be occupied with different strategies on different planes. The publics are different, but they are condensed into a larger strategy that connects the different spaces and different figures, which are configured in a *common* ideological horizon according to a neoextractivist techno-liberal agenda. Techno-liberal here signifies that the main character (Capital) is in motion in this dynamic. In this motion, the digital plane, especially the blockchain platforms and cryptocurrencies, operate in accordance with the narrative of protecting the Amazon rainforest. Neoextractivist, meanwhile, signifies that this same character (Capital) appropriates the ontology of indigenous peoples, monetizing and commercializing this ontology on blockchain platforms via cryptocurrencies.

In sum, this is ontological techno-extractivism. This dystopian constellation is both technological and ontological. Ultimately, it involves the appropriation of the meanings of *Ancestrality*, which is mobilized by means of and through Technology.

Empirically, it is the blockchain platforms and cryptocurrencies created by Nemus and associated with *Art*, especially graphic aesthetics, that configure and dynamize the monster denominated Leviathan 5.0.

Faced with the Digital Revolution and the Climate Emergency, Leviathan Makes an Upgrade

Can you pull in Leviathan with a fishhook or tie down its tongue with a rope? (Job, 41:1).

To answer the article's third question – What dynamic operates through the human and non-human agents and the ideological and utopian figures identified in the previous sections? – we anchor ourselves in the ideological-utopian configurations already identified in the formulations of the Sociology of Critical Utopia and Climate Change on the interface with STS. We then address the fourth and final question: What new ideological-utopian configuration emerges from the present case study?

Since 1651 when Hobbes mobilized the metastructure of Leviathan, the challenge faced by social scientists (including anthropologists, sociologists, political scientists) of deconstructing or approximating it – or even refuting it – from other perspectives has been present in diverse theoretical, methodological and epistemic approaches. In the present approach, Leviathan is understood as a metastructure forged by humans and stable on the objective plane (such as infrastructural meta-projects, institutions, mega-infrastructures like the internet) and the subjective plane (social rules ordered by the legal and geopolitical dimension) as a sociopolitical force that operates by modulating and mediating human and beyond-human actions.

Callon and Latour (2015) seek to dismantle Leviathan and argue that the ontological and epistemological dimensions, as well as the political and technical (technological) dimensions, are indissociable. They also contend, among other considerations, that some social assemblages are *more stable* than others. Neoliberalism – and all the terms associated with this concept, such as late capitalism and neoextractivism – can be conceived as Leviathan from a critical economic-sociopolitical perspective (Collier, 2012; Faucher, 2018). Moreover, Leviathan is also a powerful image in the sense of naming this metastructure that encompasses everyone.

We emphasize that, even under the global tentacles of this monster, there are utopian horizons; however, the practices of new technologies (like NFTs and cryptocurrencies) became dystopian in the entrails of a dominant system. In sociological practice, some of the categories frozen in analyses need to be dislocated, including the concept of the nation-state, if we are to comprehend a metastructure that operates beyond this understanding. On this point, the question of rigid geopolitical borders no longer makes sense in globalized system like capitalism and its practices, which currently operate in Leviathan “whose underbelly is the consolidation of transnational networks” (Suvin, 2012, p. 197). In the digital era with the revolution of blockchain technology and cryptocurrencies, the Cyberclimate Leviathan is upgrading. Transdigital networks are created – digital networks within digital networks like a *digital matryoshka* (Salmi, 2023a) – which makes the question of transparency and traceability a challenge beyond human capacities.

With the breakthrough of industry 5.0 (Echman, 2021), the advances and appropriations also attain other dimensions – including the epistemic (Costa, Coelho; Salmi, 2023), but not the ontological – as well as the socioeconomic and technological dimensions already in motion. However, the advance of techno-centred ideologies towards the ontological dimension is something new. In this sense, Big Tech companies (like Alibaba, Alphabet, Amazon, Apple, Meta, Microsoft, Nvidia), technoeconomic groups and other neoliberal organizations are empirical examples of this configuration denominated here Leviathan 5.0. A metastructure that operates in all digital spaces in simultaneous and integrated fashion, since these entities possess technological control of these techno-economically integrated networks. Given current advances in the effects of new technologies and climate change, we understand this metastructure not as Climate Leviathan (Wainwright; Mann, 2018), but as Cyberclimate Leviathan, an entity that produces ontological techno-extractivism.

Here we should remember that while web 1.0 is a *passive* space in terms of decentralized creation and web 2.0 advances towards interactive content, the real advance occurs with web 3.0¹⁹ – that is, with total ‘freedom’ of action, albeit a freedom only available to those who master the required *technological* and economic knowhow.

Advancing on the argument that the ‘Climate Leviathan’ produces “illusory utopian futures” (Wainwright; Mann, 2018, p. 197), the updated version identified in the present analysis leads us to the *Cyberclimate Leviathan*, or, in other words, *Leviathan 5.0* – in an allusion to Revolution 5.0. A system-monster that produces *illusory utopian futures*, but that, with its technological mask, realizes configurations between Ancestrality (of indigenous peoples), Digital Art (of graphic artists), the Artificial Agent/Technology (with blockchain platforms and cryptocurrencies traded in these cyberspaces) and Climate Philanthropy/Capital – without being limited to these figures. Inspired by the Sociology of Critical Utopia, we argue that it is not a question of an *illusory utopian future* but of a climate dystopia inscribed in the present: that is, a *realist dystopia* – to paraphrase Wright.²⁰

While, on one hand, there exists an “urgency for an *onto-epistemo-political turn* capable of mapping new conflictualities and sociotechnical alternatives” (Parra, 2022, p. 383), on the other, the digital revolution tensions this *non-turn* with different degrees of agency through sociotechnical networks in favour of a realist climate utopia. Furthermore, if “the concretization of other technological futures is indissociable from the recognition and foundation of other collectivities and political institutions” (Parra, 2022, p. 383), we can add that the materialization of *other technopolitical presents* is already in motion, at least those made concrete by the groups that dominate Technology (such as Big Tech, Big Asset), even though on the ideological plane these interconnections may be (and are) covered by neoextractivist neoliberal masks.

With some caveats, we concur with the argument that “Web 3.0 expands the understanding of the social from Durkheim and Weber to Tönnies and Marx, it is a system of online collaboration that enables the formation of virtual communities, cooperative knowledge, and cooperative labour” (Fuchs et al., 2010, p. 57).

One caveat to the argument made by Fuchs et al. (2010) is that web 3.0 *may* well allow the formation of practices of co-production, but it also enables *practices of*

¹⁹ For an understanding of technological differences and some social implications, see Fuchs et al. (2010). For an overview of the relations between the web types (1, 2, 3) and their relations with new technologies like blockchains and NFTs, as well as the social implications in the metaverse such as financial crimes, see Wu et al. (2023).

²⁰ A reference to the notion of a ‘realist utopia’ (Wright, 2010).

technological appropriation not by the most vulnerable communities (Rivoir; Morales, 2019), but by groups that dominate the technological dimension, like the *specialists* in constructing Nemus's NFT. The case studied here demonstrates that the identified configuration (ontological techno-extractivism) produces practices that are *far* from cooperative, since there is no cooperation between the techno-dominant groups and the indigenous peoples of the Amazon region. In other words, they are practices that occur without the genuine involvement of the other – in this case, the Apurinã indigenous peoples of the Baixo Seruini/Baixo Tumiã Indigenous Land. What exists are ontological and epistemological appropriations by the oligarchical groups that control the technology through climate narratives with a salvationist horizon.

Given the increase in the social and ecological inequities of climate change, it should be emphasized that, in arguing about types of revolution in the digital age on the hybrid frontier of technoscience and socioeconomics, some practices involving the deconstruction of imaginary models – previously stable – associated with the new processes of deterritorialization, especially in digital spaces, may lead to the question of a post-human identity and, ultimately, the prospect of a post-identity world (Nhemachena; Dhakwa, 2023). In this technoscientific futurism, the mythic figure of Leviathan, its technoscientific processes and practices merged with the socioeconomic practices of digital neoliberalism, can and perhaps already are leading to an upgrade that escapes the social hands of techno-liberal ideology itself – diluted in the new technoscientific spaces like the new black box of web 3.0. Along these lines, past and present can be analyzed in light of the critique of (post)modernity and in the interstices “between the utopias of autonomous creation in culture and the industrialization of symbolic markets” (Canclini, 2008, p. 29). Canclini (2004, p. 184) sheds light on the discussion by arguing that “the ready access to scientific knowledge enabled by the mass media and information technologies at a transnational scale takes responsibility for managing many forms of knowledge, representation and social imaginaries out of the hands of states.”

However, contrary to what Canclini (2004) asserts, nation states (whether as an explanatory-interpretative category or an agent that organizes social interaction in digital environments) are increasingly aligned with neoliberal groups²¹ (whether through the *non-regulation* of access to the information produced by science or by the *non-control* of decentralized digital spaces like web 3.0 or the deep web). In this scenario, we ask: how can new configurations, structures, practices and social imaginaries emerge in response to the increasing effects of climate change? The climate question imposes yet another updating of the image of this emblematic sociopolitical figure, the Leviathan in an increasingly interconnected and globalized world of worlds.²² Among the possibilities for this macro-entity to transform or adapt, based on the proposition of the *Climate Leviathan* (Wainwright; Mann, 2018) and the premise that humanity is under a planetary governance led by a few oligarchies (like Big Tech, Big Oil and Big Asset), we believe that this Leviathan has evolved into Leviathan 5.0 – in an allusion to industry 5.0 and all the new technologies deriving from this new civilizational wave. Moreover, based on the present case study, we propose conceiving this new version as the *Cyberclimate Leviathan*, the entity producing the current *ontological techno-extractivism*.

²¹ This works within a western logic, which excludes countries like China, Russia and, to a certain extent, many of those under explicit dictatorship like Iran and North Korea.

²² On this point, nation states, without exception, make up the global economic space and are target territories of mostly material extractivism, principally the countries of Latin America and Africa (Svampa, 2023).

We highlight the argument of researcher De Vries (2007, p. 32-33) that contemporary capitalist globalization, guided by a macrostructure composed of “the set of institutions, agencies and ideologies that structure development thinking and practice – as a machine-like kind of entity” that produces and reproduces itself “by virtue of the unintended, unplanned, yet systematic side-effects it brings about.” However, we disagree that these side-effects are “unintended, unplanned” (De Vries, 2007, pp. 32-33). Our study demonstrates that *some* collateral effects are intentional, planned *and* systematic, including the *ontological techno-extractivism* conducted by the Nemus group in relation to the Apurinã indigenous peoples of the Baixo Seruini/Baixo Tumiã Indigenous Land.

Final Techno-considerations: Cyberclimate Leviathan as Ontological Techno-extractivism

Extrapolating from this monster, we understand *ontological techno-extractivism* both as a sociological-political concept and as a socioeconomic practice. On a conceptual level, it can be understood as a category-horizon capable of better comprehending the relations between humans and non-humans and the social mega/infra/super-structures that are constructed and involve everyone physically and digitally. On an empirical level, it can be mobilized to capture the practices of ontological appropriation through the imposition of technological assemblages on communities and societies without the scientific knowledge, the technological knowhow and still less the economic means to comprehend and confront this system and its practices of epistemic and ontological expropriation.

Broadly speaking, this machine-monster – understood as a macrosystem or a meta/macro/super-structure – can be named Leviathan 5.0 or the Cyberclimate Leviathan. This machine-monster can also be conceived as *ontological techno-extractivism*. A particular type of new extractivism that can reach other ancestral territories. A structure continually being actualized that currently operates, among other fronts, with cyberclimate processes.

Perhaps this can be understood as a global, globalized and globalizing entity-machine that devours other ontologies and epistemologies, but this hypothesis requires other studies and research. An entity commanded by oligarchies that operate globally and are guided by a dystopian and hegemonic ideology that insists on remaining active until the last non-capitalist extractivist imaginary has been rendered extinct.

In a world of disputing worlds where, in principle, possibilities open up for discussing other *climate ontologies* (Salmi et al., 2023), the case analyzed here makes it clear that there is still a long way to go before this kind of extractivism, in particular *ontological techno-extractivism*, ceases being planned and executed by those in a position of economic, technological, mediatic and epistemic power.

Ultimately, the argument of Latour, Stengers, Tsing and Bubandt that science sequestered epistemology (Latour et al., 2018) is extrapolated. More to the point, technoscience in the hands of the few not only sequestered epistemology, but also other ontologies, in this case, indigenous ontologies. Perhaps this new *ontological techno-extractivism* will be reproduced until the “last ton of combustible fuel” (Weber, 2013) has been extracted from the planet. In the contemporary context, humanity is moving from a form of organization based on fossil fuel extraction to a climate digitalism, but the ontological question acquires a new relevance in the face of climate catastrophes and technological advances. In this sense, this new configuration identified as

ontological techno-extractivism extrapolates the current definitions of *informational extractivism*, advances towards a new dimension and produces a new neoliberal race – beyond data, ancestral knowledge is the new petroleum.

In the final analysis, humanity has managed neither to fish Leviathan nor *unscrew* it. Indeed, in the face of the digital revolution and the climate emergency, it is this entity – Leviathan 5.0 – that is upgrading to a digital, globalizing version. It is this metastructure that technically and economically fished ancestry. Perhaps the insurgency of a *Cyberclimate Tupã*²³ is needed to confront this type of ontological techno-extractivism. In other words, the vast majority of humanity is at the mercy of mega-oligarchies with technological, financial and media power: the Big Whatever, also known as Leviathan 5.0. In sum, in the digital age and in an era of climate catastrophes, there is a new ideological-utopian narrative in the air encapsulated by the slogan: "Buy NFTs [non-fungible tokens] to save the NFT [non-fungible territory]."

References

- ADORNO, Theodor W. *Indústria cultura e sociedade*. Rio de Janeiro: Paz; Terra, 2023.
- APIB – ARTICULAÇÃO DOS POVOS INDÍGENAS DO BRASIL. *Apib lança campanha Emergência Indígena na COP28 e faz cobrança internacional para a importância das Terras Indígenas no futuro climático global*. Manaus: APIB, 29 Nov. 2023. Available at: <https://apiboficial.org/2023/11/29/apib-lanca-campanha-emergencia-indigena-na-cop28-e-faz-cobranca-internacional-para-a-importancia-das-terras-indigenas-no-futuro-climatico-global/>. Accessed: 5 June 2024.
- BECKERT, Jens; SUCKERT, Lisa. The future as a social fact: the analysis of perceptions of the future in sociology. *Poetics*, Amsterdam, v. 84, n. 3, 101499, 2021. DOI: <https://doi.org/10.1016/j.poetic.2020.101499>.
- BISET, Emmanuel; NOREÑA, Isabel Cristina Naranjo. Apresentação do Dossiê: Arqueologias Políticas do Futuro: Da Aceleração ao Antropoceno. *Mediações*, v. 27, n. 1, 2022, p. 1-22.
- BISPO, Fábio. Empresa vende lotes de território indígena como NFTs sem conhecimento da Funai. *Mongabay*, [s. l.], 9 Nov. 2023. Available at: <https://brasil.mongabay.com/2023/11/empresa-vende-lotes-de-territorio-indigena-como-nfts-sem-conhecimento-da-funai/>. Accessed: 3 December 2023.
- BRASIL. Conselho Nacional do Ministério Público (ed.). *Desastres socioambientais e mudanças climáticas*. Brasília, DF: CNMP, 2023.
- BRASIL. *Projeto de Lei nº 1.420, de 2022*. Altera a Lei nº 7.433, de 18 de dezembro de 1985, para disciplinar a lavratura de escrituras públicas relativas a negócios jurídicos envolvendo a transferência de criptoativos. Brasília, DF: Congresso Nacional, 2022. Available at: <https://www.congressonacional.leg.br/materias/materias-bicamerais/-/ver/pl-1420-2022>. Accessed: 27 June 2023.
- BROWN, Wendy. *Nas ruínas do neoliberalismo: a ascensão da política antidemocrática no Ocidente*. São Paulo: Filosófica Politeia, 2019.
- CAILLÉ, Alain. *Segundo manifesto convivialista: por um mundo pós-neoliberal*. Rio de Janeiro: Ateliê das Humanidades, 2020. v. 1.
- CALLON, Michel; LATOUR, Bruno. Unscrewing the big Leviathan: how actors macro-structure reality and how sociologists help them to do so. In: KNORR-CETINA, Karin; CICOUREL, Aaron Victor (eds.). *Advances in social theory and methodology: toward an integration of micro- and macro-sociologies*. London; New York: Routledge; Taylor; Francis Group, 2015. v. 1, p. 277-303.
- CANCLINI, Néstor Garcia. *Culturas híbridas: estratégias para sair da modernidade*. São Paulo: Editora da USP, 2008.

²³ Tupã is a creator god in Tupi-Guarani cosmologies.

CANCLINI, Néstor García. *Diferentes, desiguales y desconectados: mapas de la interculturalidad*. Barcelona: Gedisa, 2004.

CLOT-GARRELL, Anna. Voices of emergency: imagined climate futures and forms of collective action. *Current Sociology*, Thousand Oaks, v. 0, 2023. DOI: <https://doi.org/10.1177/00113921231182179>.

CNMP – CONSELHO NACIONAL DO MINISTÉRIO PÚBLICO. *Desastres socioambientais e mudanças climáticas*. Brasília, DF: Conselho Nacional do Ministério Público, 2023.

COELHO, Gabriel Bandeira; ALMEIDA, Jalcione. Interdisciplinaridade ambiental e democracia pluralista: uma reflexão a partir do conceito de agonismo de Chantal Mouffe. *Revista Brasileira de Sociologia*, Porto Alegre, v. 9, n. 23, p. 9-34, 2021. DOI: <https://doi.org/10.20336/rbs.669>.

COLLIER, Stephen. Neoliberalism as big Leviathan, or ...?: a response to Wacquant and Hilgers. *Social Anthropology*, Hoboken, v. 20, n. 2, p. 186-195, 2012. DOI: <https://doi.org/10.1111/j.1469-8676.2012.00195.x>.

COSTA, Everton Garcia da; COELHO, Gabriel Bandeira; SALMI, Frederico. Quem tem medo do ChatGPT? Reflexões sobre os impactos das novas IAs sobre a vida social e na academia. *Cadernos de Educação Tecnologia e Sociedade*, Lisboa, v. 16, n. 4, p. 891-904, 2023.

CRUZ, Cláudio Roberto Rodrigues. *Utopia crítica e emancipação social: a emergência de uma nova gramática utópica*. 2011. 303 f. Tese (Doutorado em Sociologia) – Universidade de Coimbra, Coimbra, 2011. Available at: <https://hdl.handle.net/10316/14517>. Accessed: 27 June 2023.

DAMONTE, Gerardo; ULLOA, Astrid; QUIROGA, Catalina; LÓPEZ, Ana. La apuesta por la infraestructura: inversión pública y la reproducción de la escasez hídrica en contextos de gran minería en Perú y Colombia. *Estudios Atacameños*, San Pedro de Atacama, v. 68, p. 1-32, 2022. DOI: <http://dx.doi.org/10.22199/issn.0718-1043-2022-0002>.

DAVID, Marília Luz; PREMEBIDA, Adriano; FLEURY, Lorena Cândido; ALMEIDA, Jalcione. A sociologia da ciência e da tecnologia no Brasil: uma análise a partir da produção em periódicos A1 entre 2010 e 2018. *Sociedade e Estado*, Brasília, DF, v. 37, p. 217-244, jan./abr. 2022. DOI: <https://doi.org/10.1590/s0102-6992-202237010010>.

DE VRIES, Pieter. Don't compromise your desire for development! A Lacanian/Deleuzian rethinking of the anti-politics machine. *Third World Quarterly*, London, v. 28, n. 1, p. 25-43, 2007. DOI: <https://doi.org/10.1080/01436590601081765>.

DRYZEK, John S.; NORGAARD, Richard B.; SCHLOSBERG, David (eds.). *Oxford handbook of climate change and society*. Oxford: Oxford University Press, 2011.

DUNLAP, Riley E.; BRULLE, Robert J. (eds.). *Climate change and society: sociological perspectives*. Oxford: Oxford University Press, 2015.

ECHMAN, Marcia. A indústria 5.0: Decania do Centro de Tecnologia. *Centro de Tecnologia UFRJ*, Rio de Janeiro, 18 jun. 2021. Available at: <https://ct.ufrj.br/a-industria-5-0/>. Accessed: 22 November 2023.

ELLIOTT, Anthony. *Making sense of AI: our algorithmic world*. Cambridge; Medford: Polity Press, 2022.

ELLIOTT, Rebecca. The sociology of climate change as a sociology of loss. *European Journal of Sociology*, Cambridge, v. 59, n. 3, p. 301-337, 2018. DOI: <https://doi.org/10.1017/S0003975618000152>.

EL-OJEILI, Chamsy. *The utopian constellation: future-oriented social and political thought today*. Cham: Springer International Publishing, 2020.

ETHERSCAN. *Token Nemus Genesis Collection*. [S. l.]: Etherscan, [2023]. Available at: <https://etherscan.io/token/0xd6ACD704F1d8E007D934e1Ec64838aF3C8818015>. Accessed: 3 December 2023.

FAUCHER, Philippe. Leviathan captured. In: AMANN, Edmund; AZZONI, Carlos; BAER, Werner. *The Oxford handbook of the Brazilian economy*. Oxford: Oxford University Press, 2018. p. 124-146. Available at: <https://books.google.com.br/books?id=IWBmDwAAQBAJ>. Accessed: 22 November 2023.

FEENBERG, Andrew. A critical theory of technology. In: FELT, Ulrike; FOUCHÉ, Rayvon; MILLER, Clark A.; SMITH-DOERR, Laurel. *The handbook of science and technology studies*. 4. ed. Cambridge: The MIT Press, 2017. p. 635-664.

FLEURY, Lorena Cândido; MIGUEL, Jean Carlos Hochsprung; TADDEI, Renzo. Mudanças climáticas, ciência e sociedade. *Sociologias*, [s. l.], v. 21, n. 51, p. 18-42, 2019. Available at:

http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1517-45222019000200018&tlng=pt. Accessed: 1 August 2022.

FRASER, Nancy; HONNETH, Axel. *Redistribution or recognition? a political-philosophical exchange*. New York: Verso, 2003.

FRELLER, Felipe. Pierre Rosanvallon, from the critique of utopian liberalism to the critique of the critique of neoliberalism. *Brazilian Political Science Review*, São Paulo, v. 17, n. 2, p. e0003, 2023. DOI: <https://doi.org/10.1590/1981-3821202300020002>.

FUCHS, Christian; HOFKIRCHNER, Wolfgang; SCHAFRANEK, Matthias; RAFFL, Celina; SANDOVAL, Marisol; BICHLER, Robert. Theoretical foundations of the web: cognition, communication, and co-operation: towards an understanding of web 1.0, 2.0, 3.0. *Future Internet*, Basileia, v. 2, n. 1, p. 41-59, 2010. DOI 10.3390/fi2010041.

GUZZO, Marina; TADDEI, Renzo. Experiência estética e antropoceno: políticas do comum para os fins de mundo. *Desigualdade e Diversidade*, Rio de Janeiro, v. 17, n. 17, p. 72-88, 2019. Available at: http://www.maxwell.vrac.puc-rio.br/Busca_etds.php?strSecao=resultado&nrSeq=46021@1. Accessed: 23 June 2022.

HARAWAY, Donna Jeanne. *Staying with the trouble: making kin in the Chthulucene*. Durham: Duke University Press, 2016.

JÓ. In: BÍBLIA online. [S.l.: n.d., 2023]. Available at: <https://www.bibliaonline.com.br/nvi/j%C3%B3/41/1-34>. Accessed: 13 December 2023.

KOZINETS, Robert V. *Netnografia: realizando pesquisa etnográfica online*. Porto Alegre: Penso, 2014.

LATOUR, Bruno. *Políticas da natureza: como fazer ciência na democracia*. Paris: Découverte, 2004. (Collection L'Armillaire).

LATOUR, Bruno; STENGERS, Isabelle; TSING, Anna; BUDANDT, Nils. Anthropologists are talking: about capitalism, ecology, and apocalypse. *Ethnos*, Dublin, v. 83, n. 3, p. 587-606, 2018. DOI: <https://doi.org/10.1080/00141844.2018.1457703>.

LAW, John (ed.). *A sociology of monsters: essays on power, technology and domination*. London: Routledge, 1991.

LINDGREN, Simon. Introducing critical studies of artificial intelligence. In: LINDGREN, Simon (ed.). *Handbook of critical studies of artificial intelligence*. Cheltenham: Edward Elgar, 2023. p. 1-19.

MARTINS, Paulo Henrique. *Políticas da dádiva: associação, instituições, emancipação*. Rio de Janeiro: Ateliê de Humanidades, 2023.

MATEO, Joaquín Fernández. Antropología estética en el tecnoceno: epistemología y nihilismo. *International Technology, Science and Society Review*, Móstoles, v. 9, n. 2, p. 61-78, 2020. Available at: <https://www.journals.eagora.org/revTECHNO/article/view/2807>. Accessed: 21 April 2024.

MENDONÇA, Ronan; CAMPOS, Josué N.; VIEIRA, Luiz F. M.; VIEIRA, Marcos A. M.; VIEIRA, Alex Borges; NACIF, José A. M. Tokens não fungíveis (NFTs): conceitos, aplicações e desafios. In: GOMES, Rafael et al. (org.). SIMPÓSIO BRASILEIRO DE REDES DE COMPUTADORES E SISTEMAS DISTRIBUÍDOS, 40., 2022, Gramado. *Anais [...]*. Gramado: SBC, 2022. p. 52-94.

MOOR, Joost de. Postapocalyptic narratives in climate activism: their place and impact in five European cities. *Environmental Politics*, London, v. 31, n. 6, p. 927-948, 2022. DOI: <https://doi.org/10.1080/09644016.2021.1959123>.

NEMUS HOME. Guardiães. [2024]. Available at: https://nemus.earth/pt_br/how-nemus-works/. Accessed: 4 July 2024.

NEMUS. @nemus_earth. [2023c]. Available at: https://x.com/nemus_earth. Accessed: 13 November 2023.

NEMUS. About. [2023b]. Available at: <https://www.linkedin.com/company/nemusearth/about/>. Accessed: 13 November 2023.

NEMUS. Home. [2023a]. Available at: https://nemus.earth/pt_br/. Accessed: 13 November 2023.

NHEMACHENA, Artwell; DHAKWA, Esther. From color revolutions to colorless revolutions? a critical analysis of twenty-first-century protests in Europe and North America. In: NHEMACHENA, Artwell; RWODZI, Aaron; MAWERE, Munyaradzi (eds.). *The Russia-Ukraine war from an African perspective: special operations in the age of technoscientific futurism*. Bamenda; Cameroon: Langaa Research; Publishing CIG, 2023. p. 1-47.

NON-FUNGIBLE territory (NFT Short Film) – Nemus. [S.l.: s.n.], 2023, 1 video (3 min.). Published by Canal Nemus. Available at: <https://www.youtube.com/watch?v=HlVD4qmwqI>. Accessed: 13 November 2023.

PAJOLLA, Murilo. Governador de Roraima sanciona lei que proíbe destruição de maquinário do garimpo ilegal. *Brasil de Fato*, Rio de Janeiro, 7 jul. 2022.

PARLAMENTO EUROPEU. *Lei da EU sobre IA: primeira regulamentação de inteligência artificial*. London: Direção-Geral da Comunicação, 2024. Available at: https://www.europarl.europa.eu/pdfs/news/expert/2023/6/story/20230601STO93804/20230601STO93804_pt.pdf. Accessed: 19 July 2024.

PARRA, Henrique Z. M. Da tecnopolítica às lutas cosmotécnicas: dissensos ontoepistêmicos face à hegemonia cibernética no antropoceno. In: KLEBA, John B.; CRUZ, Cristiano C.; ALVEAR, Celso A. S. (eds.). *Engenharia e outras práticas técnicas engajadas: diálogos interdisciplinares e decoloniais*. Campina Grande: Editora da UEPB, 2022. p. 339-394.

POLIVANOV, Beatriz Brandão. Etnografia virtual, netnografia ou apenas etnografia?: implicações dos conceitos. *Esferas*, Brasília, DF, n. 3, p. 61-71, 2014. Available at: <https://portalrevistas.ucb.br/index.php/esf/article/view/4621>. Accessed: 23 October 2023.

RIVOIR, Ana Laura; MORALES, María Julia (org.). *Tecnologías digitales: miradas críticas de la apropiación en América Latina*. Ciudad Autónoma de Buenos Aires; Montevideo: CLACSO; RIAT, 2019. Available at: <http://www.jstor.org/stable/10.2307/j.ctvt6rmh6>. Accessed: 28 September 2023.

SALMI, Frederico. A matrioska chamada inteligência artificial: plataformas digitais híbridas como política de mudança climática no Brasil. *CTS em foco (ESOCITE.BR)*, [s. l.], v. 3, n. 2, p. 16-25, 2023a. Available at: <https://esocite.org.br/images/BOLETIM-CTS/PDF/CTS-v3-n2.pdf>. Accessed: 1 January 2024.

SALMI, Frederico. PLANB Index: Sociological Categories for Climate Policymakers. *Brazilian Political Science Review*, São Paulo, v. 17, p. e0001-38, 2023b. DOI: <https://doi.org/10.1590/1981-3821202300030001>.

SALMI, Frederico. Utopias climáticas: observatório do clima e ato pela terra. *Estudos de Sociologia*, São Paulo, v. 27, n. e022031, p. 1-25, 2022a. DOI: <https://doi.org/10.52780/res.v27i00.16896>.

SALMI, Frederico. Utopias sintéticas: inteligência artificial e políticas de mudanças climáticas. *CTS em foco (ESOCITE.BR)*, [s. l.], v. 2, n. 1, p. 57-63, 2022b. Available at: <https://www.esocite.org.br/wp/wp-content/uploads/2021/01/CTS-v2-n3-1.pdf>. Accessed: 1 January 2024.

SALMI, Frederico; CANOVA, Moara Almeida; PADGURSCHI, Maíra C. G. Ética climática, (in)justiças e limitações do Pagamento por Serviços Ambientais no Brasil. *Ambiente; Sociedade*, São Paulo, v. 26, p. e01232, 2023. Available at: <https://www.scielo.br/j/asoc/a/nfGLJSMxMhF67RVSkV3NKK/?lang=pt>. Accessed: 17 July 2023.

SALMI, Frederico; COELHO, Gabriel Bandeira; PEREIRA, Gustavo Rovetta; VENTURA, Andréa Cardoso. Ontologias climáticas: um mundo de mundos em disputa. *Simbiótica: Revista Eletrônica*, Goiabeiras, v. 10, n. 3, p. 01-14, 2023. Available at: <https://periodicos.ufes.br/simbiotica/article/view/43385>. Accessed: 1 January 2024.

SALMI, Frederico; DOWBOR, Monika; FLEURY, Lorena Cândido. Metacoalizador e os novos papéis de broker: o caso Observatório do Clima. *Tempo Social*, São Paulo, v. 36, n. 1, p. 239-259, 2024. Available at: <https://www.revistas.usp.br/ts/article/view/220653>. Accessed: 17 May 2024.

SALMI, Frederico; FLEURY, Lorena Cândido. Mudanças climáticas e Ciências Sociais: análise bibliométrica do campo (2011-2021). *BIB – Revista Brasileira de Informação Bibliográfica em Ciências Sociais*, São Paulo, v. 1, n. 97, p. 1-19, 2022a. Available at: <https://bibanpocs.emnuvens.com.br/revista/article/view/574/630>. Accessed: 17 May 2024.

SALMI, Frederico; FLEURY, Lorena Cândido. Sociologia da utopia crítica no nexos das mudanças climáticas. *Tramas y Redes* | CLACSO, Buenos Aires, n. 3, p. 91-111, 2022b. Available at: <https://biblioteca-repositorio.clacso.edu.ar/bitstream/CLACSO/171396/1/Tramas-y-redes-N3-6.pdf>. Accessed: 2 January 2023.

SALMI, Frederico; FLEURY, Lorena; DOWBOR, Monika. Análise Crítica de Narrativa no Antropoceno: métodos e aplicação na perspectiva sociológica. In: SEMINÁRIO PPGS/UFPE: O lugar da sociologia na reconstrução da democracia, 1., 2023, Recife. *Anais [...]*. Recife: UFPE, 2023. p. 1-13.

SANCHO-GARCIA, Juan-Carlos; IVORRA-ALEMAÑY, Adrián. El papel de la tecnología como agente impulsor del cambio social. *Sociología y Tecnociencia*, Valhadolide, v. 12, n. 2, p. 20-34, 2022. Available at: <https://revistas.uva.es/index.php/sociotecno/article/view/6401>. Accessed: 3 February 2023.

SILVEIRA, Sérgio A.; SOUZA, Joyce; CASSINO, João F. (eds.). *Colonialismo de dados: como opera a trincheira algorítmica na guerra neoliberal*. São Paulo: Autonomia Literária, 2021.

STAR, Susan Leigh. Power, technologies and the phenomenology of conventions: on being allergic to onions. In: LAW, John (ed.). *A sociology of monsters: essays on power, technology and domination*. London: Routledge, 1991. v. 38, p. 26-56.

STENGERS, Isabelle. A proposição cosmopolítica. *Revista do Instituto de Estudos Brasileiros*, São Paulo, n. 69, p. 442-464, 2018. Available at: <https://www.revistas.usp.br/rieb/article/view/145663>. Accessed: 4 August 2023.

SUVIN, Darko. *In Leviathan's belly: essays for a counter-revolutionary time*. San Bernardino: The Borgo Press, 2012.

SVAMPA, Maristella. *Debates latino-americanos: indianismo, desenvolvimento, dependência e populismo*. São Paulo: Elefante, 2023.

URRY, John. *What is the future?*. Cambridge; Malden: Polity Press, 2016.

WAINWRIGHT, Joel; MANN, Geoff. *Climate Leviathan: a political theory of our planetary future*. London; New York: Verso, 2018.

WEBER, Max. *A ética protestante e o espírito do capitalismo*. São Paulo: Martin Claret, 2013.

WRIGHT, Erik Olin. *Envisioning real utopias*. London: Verso, 2010.

WU, Jiajing; LIN, Kaixin; LIN, Dan; ZHENG, Ziyi. Financial Crimes in Web3-Empowered Metaverse: Taxonomy, Countermeasures, and Opportunities. *IEEE Open Journal of the Computer Society*, Los Alamitos, v. 4, p. 37-49, 2023. DOI 10.48550/arXiv.2212.13452.

ŽIŽEK, Slavoj. *Multiculturalism, or, the cultural logic of multinational capitalism*. London: New Left Review, 1997.

Declaration of Coauthorship: Frederico Salmi and Lorena Cândido Fleury declare that they used the Credit taxonomy in compliance with the SciELO standard: "Conceptualization: FS. Data curatorship: FS. Data analysis: FS, LF. Receipt of funding: FS (CAPES). Research: FS. Methodology: FS, LF. Supervision: LF. Data validation: LF; Design of data presentation: FS. Writing of original manuscript: FS. Writing – revision and editing: FS, LF."

*Minibio of the Authors:

Frederico Salmi. Master in Sociology from the Federal University of Rio Grande do Sul (2022). Doctoral candidate on the Postgraduate Program in Sociology at the Federal University of Rio Grande do Sul. Research funded by CAPES (Process n. 88887.667461/2022-00). E-mail: salmi.frederico@gmail.com.

Lorena Cândido Fleury. Doctor in Sociology from the Federal University of Rio Grande do Sul (2013). Faculty member of the Department and Postgraduate Program in Sociology and the Postgraduate Program in Rural Development of the Federal University of Rio Grande do Sul. E-mail: lorenafleury@gmail.com.

Editore/as de Seção: Henrique Zoqui Martins Parra, [Orcid:](#)
Alana Moraes de Souza, [Orcid:](#)