

Digital Colonialism, Ecological Crisis and the Limits of Techno-Primitivism

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Abstract: This article examines the intertwined dynamics of ecological crisis, digitalisation, and techno-primitivism through a genealogical and syncretic lens. It argues that the global ecological crisis is rooted not in a generalised “human impact,” but in the historical processes of colonialism and capitalist extractivism that have systematically depleted the Global South while concentrating power and privilege in the Global North. As digital infrastructures expand, new forms of extractivism – especially data colonialism and digital colonialism – have intensified these global inequalities and externalised environmental harms. The paper critically assesses techno-primitivism as a reaction to technological alienation, highlighting its risk of reproducing colonial logics of othering by framing “primitive” or non-Western lifeways as static alternatives. Instead of technocratic or primitivist solutions, the study advocates for a transformative response based on decolonisation and relationality. Drawing on Indigenous, African, and plural philosophical traditions, it proposes centring the knowledge, rights, and agency of those most affected by ecological and digital injustices. The article contends that only by dismantling extractivist, dualistic, and colonial paradigms and fostering reciprocal, relational approaches can more just, sustainable, and inclusive futures be achieved in both ecological and digital domains.

Keywords: digitalisation, data, ecological crisis, techno-primitivism, indigenous sociology

1. Introduction

Understanding the entangled dynamics of the ecological crisis in the digital age requires an analytical lens that moves beyond disciplinary silos and universalising narratives. This study adopts the genealogical method, inspired by Michel Foucault yet reframed through the lens of syncretism as it appears in indigenous critique, to trace how concepts of ecology, technology, and primitivism have historically emerged and converged. Genealogy equips us to critically analyse the power-knowledge relations shaping modern societies, revealing how our very subjectivities and conceptual frameworks are historically constituted (Crowley 2009, 2). Here, however, genealogy is mobilised not merely as a tool of Western critique but as a hybrid methodology – one that intentionally unsettles Eurocentric epistemes and foregrounds dialogic, pluralist alternatives.

First, this article posits that the ecological crisis is fundamentally colonial and class-based in its origins and character. The global environmental emergency is not a neutral or universal predicament; rather, it is the direct result of colonial and capitalist extractivism, which has systematically depleted the resources of the Global South while concentrating power and wealth in the hands of the Global North. The Anthropocene framework, by homogenising humanity’s impact, tends to obscure the historical and ongoing roles of colonialism, racial capitalism, and patriarchal domination in driving planetary degradation. This not only erases the uneven distribution of environmental harm but also depoliticises ecological collapse, perpetuating what has been called

“ecological apartheid” – a system in which the most marginalised populations, primarily in formerly colonised regions, bear the brunt of climate change and resource scarcity.

Second, the analysis foregrounds the deep interconnection between ecological crisis and digitalisation, with particular emphasis on the role of data and media. Digital infrastructures are not merely virtual or dematerialised but are anchored in extractive processes that mirror and intensify classical colonial logics. The rise of data colonialism and digital colonialism has created new forms of global inequality, where the extraction, control, and commodification of data – alongside rare earth minerals and energy – reinforce older patterns of domination. The Global South bears the environmental costs of digitalisation disproportionately, where resources are mined, e-waste is offloaded, and local ecologies are sacrificed for the maintenance of a “Cloud Empire.” This systemic entanglement of digital capitalism, extractivism, and ecological crisis challenges the prevailing narrative that technological advancement is inherently “green” or emancipatory.

Third, the study interrogates both techno-primitivism and the Anthropocene as contemporary variants of primitivism and demonstrates how primitivism itself has long operated as a tool of othering and colonial governance. It is crucial to recognise that these frameworks, especially the Anthropocene, continue the legacy of Western thought by universalising ecological crisis as the outcome of “humanity” as a whole – while, in reality, the roots and drivers of ecological destruction are deeply uneven and shaped by histories of Western colonialism, capitalism, and epistemic domination. Not all humans have contributed equally to the ecological crisis; rather, responsibility is disproportionately concentrated in the Global North, while the Global South and marginalised populations endure most of the consequences. Historically, primitivist ideologies constructed certain populations as “backwards,” “childlike,” or “savage,” legitimising their subjugation and positioning them as objects of both protection and improvement under imperial rule. Today, techno-primitivism, by romanticising pre-industrial or “less advanced” ways of life as solutions to the ecological crisis, risks reproducing these colonial hierarchies of knowledge and reinforcing narratives of inferiority associated with the “Other.” In this way, critiques that position technology as inherently alienating or destructive may inadvertently echo the paternalistic logics of colonialism, rather than offer a genuine path toward justice or sustainability.

Finally, this article contends that the way forward lies in establishing a connection between relationality and decolonisation¹. Decolonising the ecological crisis and digital infrastructures necessitates a radical shift from dualistic, extractivist, and individualistic paradigms toward relational, plural, and reciprocal ways of knowing and being. Decolonisation is crucial because it directly confronts the structural and historical inequalities that underlie both ecological collapse and digital exploitation, exposing how contemporary crises are rooted in the persistence of colonial domination and global class hierarchies. Relationality, in turn, matters because it offers an alternative ontology that emphasises interdependence, reciprocity, and mutual responsibility, challenging the alienation and fragmentation produced by modern capitalist systems. Importantly, decolonisation must be understood not only as a cultural or epistemic project, but also as

¹ Decolonialism denotes not only the reversal of formal colonial rule but the dismantling of the economic, epistemic, ideological and cultural relations of domination that persist after political independence. Beyond a technical “undoing of colonisation,” it foregrounds the historical continuity of primitive accumulation – including land grabs and biopiracy – and the production of radicalised divisions of labour and unequal life chances. In Africa, for instance, the end of colonial administrations did not end neo-colonial forms of dependence; economic subordination and the colonisation of minds endured (Yilmaz 2023, 64-65).

a fundamentally class-based struggle: the legacies of colonialism and extractivism are inseparable from the dynamics of class, labour, and the uneven distribution of power and resources on a global scale. This approach involves recognising the agency and epistemologies of Indigenous and subaltern communities – those most affected by ecological degradation, yet most often excluded from global governance and knowledge production. By centring relationality, as articulated in Indigenous, African, and Daoist philosophies, we can move toward a more just, sustainable, and inclusive future – one that actively resists the reproduction of both colonial, extractive, and class-based logics in ecological and digital domains.

The preceding discussion outlined the theoretical and methodological framework, showing how genealogy and syncretism allow us to trace the colonial, capitalist, and epistemic roots of ecological crisis and digitalisation. Having established why decolonisation and relationality are indispensable for confronting these intertwined crises, the next step is to ground these arguments in the concrete dynamics of the ecological crisis itself. Turning to ecology as the material basis of life makes it possible to see how historical patterns of extractivism and inequality are inscribed directly into planetary systems, and why any critical response to digital infrastructures must first grapple with the depth and severity of environmental collapse.

2. Ecological Crisis

The ecological crisis is not a new phenomenon in historical terms. What is new, however, is the crisis's global scale. With the rise of industrial capitalism as the dominant paradigm, the ecological crisis has evolved from localised environmental issues into a worldwide problem. The ecological crisis can be defined as a disruption or alteration in the balance of habitats inhabited by non-human life forms. The globalising ecological crisis now threatens life by disrupting the equilibrium of the atmosphere, hydrosphere, lithosphere, biosphere, and cryosphere, leading to the destruction of the ecological balance between living and non-living entities. One of the most significant indicators of today's ecological crisis is global climate change. Before the Industrial Revolution, the concentration of carbon in the atmosphere was 280 parts per million (ppm); today, it exceeds 430 ppm (NOAA 2025).

Throughout Earth's known history, climate change and mass extinctions have followed cyclical patterns. However, the current ecological crisis has disrupted this cycle, preventing the emergence of new species after extinctions (Hull 2024, R947-R948). The source of the imbalance in ecological equilibrium lies particularly in the capitalist system that emerged after the Industrial Revolution. The current ecological crisis can be seen as an expression of the structural crises of capitalism, which is driven by the relentless pursuit of profit (Hickel 2023, 38). As Julian Cribb (2025, 5-6) forcefully argues, the current crisis is unprecedented in scale and severity: we are witnessing mass extinctions and the collapse of vital ecosystems that sustain life, while essential resources such as soil, water, forests, fish, and minerals are becoming alarmingly scarce and increasingly contested. The risk of global water crisis, the warming and acidification of oceans, the depletion of oxygen and marine life, and the disappearance of forests and fisheries signal a planetary emergency. Cribb also highlights that, despite technological "advancements," the threat of nuclear conflict, uncontrollable chemical pollution, and emerging risks associated with artificial intelligence (AI), surveillance, and biotechnology are intensifying at an alarming rate. Global food supply is precariously balanced due to deteriorating ecosystems, resource depletion, and the destabilisation of previously stable climate conditions. Cribb warns that denial, misinformation,

and collective self-deception exacerbate humanity's failure to recognise and act upon these converging crises – placing civilisation itself at unprecedented risk.

Further deepening this diagnosis, recent research underscores that half of all anthropogenic CO₂ emissions have been released in just the past thirty years, with twenty major companies responsible for a third of all historic emissions as they continue to defend fossil fuels and secure growing subsidies. Biodiversity loss is proceeding at a rate unseen since the Cretaceous–Tertiary extinction event sixty-six million years ago. Excess nitrogen and phosphorus from fertilisers and fossil fuels are already undermining the resilience of soil and atmospheric systems, polluting oceans, and driving oxygen-deprivation-based extinctions. Three further planetary subsystems are now at or near critical thresholds: ocean acidification is dissolving calcium in corals and plankton, threatening entire marine ecosystems and fisheries; freshwater sources are facing pollution, drought, and scarcity due to agricultural, industrial, and domestic pressures; and ongoing land-use changes for agriculture are accelerating biodiversity loss, greenhouse gas emissions, and extreme weather events, often with devastating impacts on habitats (Harris-White 2020, 39-40).

Some of the system-induced damages to ecological balance include pollution of seas and drinking water, issues related to chemical, biological, and nuclear waste, increased carbon emissions, climate change, global warming, and the reduction of arable land due to erosion. Capitalist production is characterised by growth, capital accumulation, and expansion. The insatiable desire for capital growth creates a perception that everything must serve to increase profit margins and expand capital accumulation for the continuity of the capitalist mode of production. Consequently, this expansionist approach of capitalism has led to hierarchical relationships not only among humans but also between humans and nature. The exploitation of land has resulted in a food crisis, ocean pollution, deforestation, and the extinction of species, culminating in a global ecological crisis that has peaked with overproduction, artificial needs, and the use of fossil fuels (Yilmaz 2021a, 743).

Various strategies have been proposed to address the ecological crisis. These strategies include adopting energy-efficient technologies, increasing the rates of oil recovery, capturing and storing carbon emissions, protecting forests and water resources, controlling population growth, implementing more effective solid waste management practices, promoting the use of environmentally friendly technologies, reducing consumption, encouraging reuse and recycling, and adopting consumption habits that minimise carbon emissions. However, the current economic system, with its focus on growth and accumulation, continues to degrade the environment and often disregards these recommendations. The capitalist drive for expansion undermines sustainable and developmental alternatives aimed at combating the ecological crisis. In this context, the ecological crisis can be seen as a consequence of capitalist production and consumption dynamics (Yilmaz 2021a, 744).

The ecological crisis is related not only to capitalism but also to colonialism and is fundamentally shaped by class relations and global inequalities. This relationship can be seen through the concept of the Anthropocene. The term Anthropocene was first introduced in the 1980s by freshwater ecologist Eugene Stoermer, but it gained wider recognition following a statement by Nobel laureate Paul Crutzen during the International Geosphere-Biosphere Programme (IGBP) conference in Cuernavaca, Mexico, in February 2000. Crutzen argued that humanity had entered a new geological epoch characterised by significant and lasting human impact on Earth's systems. Although the Anthropocene has not yet been officially recognised in the geological time scale, its widespread acceptance stems from the profound environmental changes driven by

human activity. This concept has facilitated interdisciplinary approaches by blurring the boundaries between traditionally separate fields of study, extending beyond academic discourse into political and public arenas, and providing a framework for understanding diverse yet interconnected global phenomena. For instance, during the 2012 United Nations Conference on Sustainable Development (Rio+20), the term was used to highlight the technological and environmental challenges facing human civilisation. Its increasing popularity reflects the urgency of addressing the planetary consequences of human actions while offering a conceptual tool for comprehending contemporary ecological transformations (Calidory 2022, 3).

Yet, the Anthropocene discourse universalises human impact on the environment, often overlooking the historical and ongoing roles of colonialism, capitalism, and class exploitation in driving ecological destruction. By presenting humanity as a singular geological force, it obscures the reality that environmental degradation has been disproportionately caused by industrialised, white-majority nations and their colonial extractivist economies – rooted in capitalist accumulation and global class hierarchies. This narrative erases structural differences, class antagonisms, and unequal responsibilities for the planetary crisis, while the most devastating consequences are disproportionately experienced by the world's poorest and working-class populations – many residing in formerly colonised and exploited regions (Erickson 2020, 119).

By centring a homogenised human subject, the Anthropocene framework depoliticises ecological collapse and reinforces a Eurocentric perspective. Technocratic responses to climate change, rooted in Western values, often marginalise Indigenous and subaltern ecological knowledge. As a result, the vision of sustainability remains dictated by epistemic frameworks of the Global North, while the structural legacies of colonialism and extractive capitalism continue to shape vulnerabilities to climate disaster (Barca and Turhan 2021, 215). From an ecofeminist perspective, the roots of the crisis are even more complex, as capitalist patriarchy – and the so-called “modern” civilization – operates through a cosmology and anthropology structured around binary oppositions and hierarchies that subordinate nature to humans, women to men, the local to the global, and consumption to production (Shiva and Mies 2019, 46-47). Ecofeminists argue that such dualisms not only drive ecological degradation but also reinforce patterns of domination and exploitation rooted in patriarchy and colonialism. In response, ecofeminism envisions a new cosmology grounded in cooperation, care, and interdependence among all forms of life, challenging Enlightenment-based notions of freedom as mastery over nature and calling instead for a holistic understanding of well-being and emancipation (Shiva and Mies 2019, 48).

At this point, discussions emphasising the role of capitalist relations of production in triggering the ecological crisis increasingly advocate the use of the concept of “Proletarocene” instead of “Anthropocene.” This is because the basis of ecological destruction is not the human species as an abstract and homogeneous agent, but rather a working class defined specifically within capitalist class relations and the dynamics of exploitation to which this group has been historically subjected. The logic of capitalist accumulation, by commodifying not only nature but also labour, has constructed an energy regime that devalues all life forms and threatens the planet's carrying capacity. Therefore, the primary cause of ecological disasters on Earth is not humanity as a whole, but the “proletarocene” historically engendered by capital accumulation and devalued modes of production. In other words, class relations, modes of production, and capitalist energetics must be placed at the centre of understanding the dynamics of the ecological crisis (The Salvage Collective, 2020). In the end, the ecological crisis has

become even more severe in the digital era, as new forms of extractivism and exploitation intensify existing global inequalities.

While the ecological crisis originates in the structural dynamics of capitalism and colonialism, its severity in the present cannot be separated from the accelerating pace of digitalisation. Digital infrastructures are often portrayed as immaterial or “green,” yet they are deeply material systems that consume vast amounts of energy, rely on extractive mining of rare minerals, and generate mounting electronic waste. In other words, the same extractivist and class-based logics that drive ecological collapse are reproduced in digital economies, turning the digital realm into a new site of ecological degradation and inequality. To make this connection concrete, the next section highlights specific examples – ranging from e-waste and lithium extraction to data centres and AI – that illustrate how digitalisation intensifies environmental harm and reinforces global disparities.

3. Examples of Environmental Impacts of Accelerating Digitalisation

The ecological crisis of the digital age cannot be understood in abstract terms alone; it manifests in tangible, material consequences that cut across energy systems, waste streams, and resource frontiers. Far from being immaterial, digital infrastructures depend on vast flows of minerals, electricity, and water, while also generating unprecedented levels of pollution and waste. What are often celebrated as “green” or “alternative” technologies – electric vehicles, lithium-ion batteries, large-scale data centres – are in fact deeply implicated in extractivist logics that reproduce colonial and class-based inequalities. Examining concrete cases of these environmental impacts is therefore essential, as it reveals how digitalisation not only accelerates ecological degradation but also entrenches global hierarchies of power, dependency, and vulnerability.

3.1. “Alternative” Energies

Debates on the ecological crisis frequently highlight so-called “green” or “alternative” technologies – renewable energy, waste reduction strategies, and sustainable agriculture – as solutions to environmental harm. Yet applying technological ethics in this context requires more than celebrating innovation; it demands a careful assessment of the entire lifecycle of such technologies, from resource extraction to disposal. Electric vehicles (EVs), for example, are often promoted as a key pathway to decarbonisation, but their broader ecological and social impacts – ranging from the mining of battery materials to the energy sources used for charging and the unresolved challenges of disposal and recycling – demonstrate that even seemingly sustainable technologies may reproduce extractivist logics (Sovacool 2020, 30). Similarly, the mounting crisis of electronic waste (e-waste) reveals the hidden costs of rapid digitalisation: in 2022 alone, the world generated sixty-two billion kilograms of e-waste, yet only 22.3% was properly collected and recycled. With volumes rising far faster than recycling rates, the consequences – including pollution, resource depletion, and health hazards – fall disproportionately on developing countries, where much of this waste is exported for secondary use (Baldé et al. 2024, 7).

Another prominent example is lithium-ion batteries. Lithium, often referred to as “white gold,” is a critical material for contemporary energy storage solutions, found in everything from laptops and smartphones to electric vehicles and even prototype electric airplanes. Despite its relative abundance, economically viable lithium extraction is geographically concentrated, with the largest reserves located in the “lithium triangle” spanning southern Bolivia, northern Argentina, and Chile – Global South regions.

While some proponents argue that lithium extraction can be considered a form of “sustainable mining” due to its reliance on solar energy, mounting evidence demonstrates that the chemicals and vast amounts of water used in processing lithium brine cause significant environmental disruption to salt flats and surrounding ecosystems. Moreover, the global demand for lithium as a solution to the energy transition is reinforcing long-standing patterns of extractivism rooted in colonial history, often resulting in “hyper-extractivism” that exacerbates environmental pressures, deepens dependency, and entrenches the Global South in a primary-exporter role for the benefit of powerful economies in the Global North. This dynamic not only perpetuates ecologically uneven exchange but also reproduces poverty and inequality along lines of class, race, and gender, with the burden of resource extraction disproportionately falling on marginalised communities both in the Global South and in impoverished regions within wealthier countries (Hernandez and Newell 2023, 249). According to recent trade data, as of 2024, the primary importers of lithium are overwhelmingly located in the Global North, including countries such as the United States, Germany, Belgium, Japan, and South Korea. This pattern demonstrates that while the extraction of lithium mainly takes place in the Global South (particularly in the “lithium triangle” of South America), the majority of its value-added consumption and economic benefits accrue to advanced economies in the Global North, thus reinforcing unequal global relationships of extraction and dependency (World Bank 2024).

One notable exception to the general pattern of lithium flows from the Global South to the Global North is China. Despite being a major player in the global processing and manufacturing of lithium products – especially batteries for electric vehicles (EVs), computers, and consumer electronics – China remains highly dependent on imports for the majority of its raw lithium supply. Recent material flow analyses show that as of the early 2020s, about 72.5% of the lithium consumed in China is imported, with most of it being processed into lithium carbonate for battery production. With the rapid expansion of China’s EV market and electronics sector, this import dependency continues to shape the country’s lithium market, while recycled lithium from end-of-life (EoL) batteries is also emerging as a crucial supply source (Li, Wang and Chen 2024). China’s efforts to lead in lithium-based new energy industries – while vital to global decarbonisation and carbon neutrality targets – have also generated significant and complex environmental challenges. The rapid growth of the lithium industry chain, from mining and refining to battery manufacturing and recycling, has produced extensive environmental impacts at each stage. Large-scale lithium mining, especially in regions such as Yichun, has resulted in water pollution, vegetation loss, soil degradation, hazardous waste generation, and severe damage to local ecosystems due to both legal and illegal mining operations. Additionally, the rapid expansion of lithium battery production has caused sharp increases in energy consumption and greenhouse gas emissions in key industrial regions, undermining the sustainability claims of the “green transition.” The lack of comprehensive and effective regulatory oversight has exacerbated these risks, resulting in incidents of industrial pollution, chaotic and unregulated extraction, and adverse social and environmental outcomes for local communities. These findings demonstrate that, unless China and other lithium-producing countries adopt stricter environmental regulations, eco-friendly technological innovations, and robust circular economy practices – especially regarding battery recycling and green energy integration – the environmental costs of lithium’s rapid expansion may offset its anticipated climate benefits (Yuan et al. 2023).

3.2. Big Data

The exponential growth of data production and storage has made “big data” a cornerstone of the digital economy, reshaping global flows of information, capital, and power. Yet behind the image of immaterial clouds and seamless connectivity lie material infrastructures – data centres, server farms, and cloud facilities – that demand enormous amounts of energy, water, and land. These infrastructures do not merely support digital transformation; they actively reconfigure global inequalities by concentrating ownership and profits in the Global North while externalising environmental and social costs to the Global South. Understanding big data, therefore, requires examining not only its technological functions but also its ecological footprint and geopolitical implications, revealing how the digital sphere perpetuates extractivist logics under the guise of innovation and sustainability. The rapid expansion of data farming – large-scale data centres and cloud infrastructure – has resulted in a new geography of digital inequality, where ownership and economic benefits remain concentrated in the Global North, while the environmental and social costs are disproportionately offloaded onto the Global South (Sunbird n.d.).

Major technology companies, primarily headquartered in the United States and Western Europe, often build hyperscale data centres in regions with abundant natural resources, such as cheap water and energy, yet with weaker regulatory frameworks and limited local oversight (Barratt et al. 2025). These data centres require vast amounts of electricity for cooling and operation, significantly contributing to local water scarcity and greenhouse gas emissions (Zorman 2024). For example, global tech giants sought to secure enormous water allocations – sometimes exceeding local agricultural or municipal use – raising concerns about environmental sustainability and community displacement (Yañez-Barnuevo 2025).

Furthermore, despite the promise of digital transformation, the employment and economic gains for host countries often remain minimal, reinforcing patterns of dependency and digital colonialism. As a result, data farming exemplifies a new phase of extractivism in the digital era, one that compounds ecological degradation and global inequalities while privileging the interests and ownership structures of developed nations. Moreover, so-called “green” initiatives do little to mitigate these issues. For instance, Foxconn’s “green factory” in Wisconsin for screen production, Apple’s data centre in Iowa, and Tesla’s lithium-ion battery gigafactory in the Nevada desert – each touted as environmentally friendly – reveal that attracting high-tech firms often depends on local governments granting substantial tax breaks. These incentives typically exempt companies from sales, property, and general business taxes for ten or even twenty years. While such investments are marketed as engines of local economic growth, in reality, these factories frequently generate only highly specialised and short-term employment, while also producing significant environmental hazards and toxins. The tax abatements included in these deals often swallow up much of the additional tax revenue that such investments might bring, placing further strain on local budgets. Simultaneously, increased population influxes can result in overwhelmed local services, such as overcrowded hospitals (Mahnkopf 2020, 109).

3.3. Extractivism

The ecological costs of digitalisation cannot be fully understood without situating them within the broader history and logic of extractivism. Extractivism is not merely a set of economic practices but a worldview and mode of organising life that treats nature, labour, and even culture as resources to be appropriated, commodified, and depleted.

Originally used to describe large-scale mining and resource exploitation in Latin America, the concept has since evolved into a critical framework for analysing how global capitalism reproduces inequalities by externalising ecological and social harms. In the digital era, extractivism expands beyond oil wells and open-pit mines to encompass data, infrastructures, and “green” technologies, revealing how the same colonial logics of appropriation and dispossession persist under the guise of sustainability and innovation.

Overall, this phenomenon between digitalisation and ecological crisis brings to mind the phenomenon of extractivism. Extractivism can be understood as a complex set of self-reinforcing practices, mentalities, and power differentials that underpin and rationalise socio-ecologically destructive modes of organising life through subjugation, depletion, and non-reciprocity. This concept originally emerged in the context of large-scale natural resource extraction, especially in Latin America, but has since expanded both theoretically and geographically. Today, extractivism is recognised as a modality of capital accumulation deeply embedded in global capitalism, which organises, constrains, and pressures the everyday lives of people around the world. It involves the appropriation of natural and human resource wealth in ways that deplete the source, often irreversibly, and is premised on capital accumulation and the centralisation of power. Contemporary scholarship has also identified the global expansion of extractivist practices, leading to the concept of ‘global extractivism,’ which denotes not only the geographical spread but also the systemic embedding of extractivist logics in global economic and social relations (Chagnon et al. 2022, 761-765). The fact that data farms are owned by developed countries, while the farms and the environmental damage they cause are in the global south; that alternative technologies, while portrayed as environmentally benign, are actually harmful to the environment; and that the minerals required for these technologies are also harmful to the environment, brings to mind the concept of climate apartheid.

Climate apartheid can be understood as an emergent system of discrimination, segregation, and violence structured by intersecting axes of oppression and privilege – such as race, class, gender, and sexuality – generated not only by the material impacts of climate change but also by the responses to the crisis. The term gained prominence through interventions by figures such as Desmond Tutu, who warned that wealthy nations, leveraging their financial and technological resources, could shield themselves from the immediate effects of climate change, while marginalised populations would withstand the worst of its consequences. This process produces and reinforces a global bifurcation between the “climate privileged” – those with the means and structural advantages to insulate themselves or even profit from crisis – and the “climate precarious,” who lack access to resilient infrastructures and remain vulnerable to harm, displacement, and loss. Importantly, these categories are neither static nor strictly bounded; individuals and communities may simultaneously occupy positions of both privilege and precarity or shift between them depending on changing social and ecological contexts (Rice, Long and Levenda 2022, 627).

While the preceding section has illustrated the concrete and often devastating ecological consequences of accelerating digitalisation – ranging from mineral extraction and e-waste to the rising energy demands of data infrastructures – these impacts are not merely technical or environmental in nature. Rather, they are deeply embedded in broader social, political, and ideological structures that shape both the development and deployment of technology on a global scale. Understanding these patterns of ecological harm requires a critical examination of the frameworks through which digitalisation is conceptualised and contested. In response to the mounting crises produced by

digital capitalism, a range of ethical and political critiques have emerged, notably techno-primitivism and theories of digital coloniality. The following section will explore these perspectives, interrogating how they both challenge and, at times, risk reproducing the very hierarchies and dualisms that underpin ecological and technological exploitation.

In sum, whether in the case of so-called “alternative” energies, the expansion of big data infrastructures, or the broader dynamics of extractivism, the ecological costs of digitalisation are not accidental byproducts but structural outcomes of global capitalism. Yet, these material consequences alone cannot fully explain how societies legitimise, normalise, or resist them. Ecological degradation is always intertwined with cultural narratives and political discourses that frame collective understandings of technology and crisis. For this reason, the next section turns to two contrasting yet interconnected frameworks – techno-primitivism and the coloniality of the digital – to examine how critiques of technology both challenge extractive logics and, at times, risk reproducing colonial binaries and universalising assumptions.

4. Techno-Primitivism and Coloniality of the Digital

The ecological consequences of digitalisation cannot be separated from the cultural and political discourses through which societies interpret and contest technological change. Beyond material extractivism and environmental degradation, the ways in which technology is narrated, critiqued, and resisted play a decisive role in shaping collective responses to crisis. Two prominent but contrasting perspectives – techno-primitivism and the coloniality of the digital – offer critical lenses for understanding these dynamics. While techno-primitivism questions the alienating and destructive effects of modern technology, often invoking a return to pre-industrial lifeways, theories of digital coloniality expose how technological infrastructures reproduce colonial hierarchies and global inequalities. Examining these frameworks together highlights both the possibilities and the pitfalls of current critiques: they reveal deep structural injustices but may also risk reinforcing reductive binaries or universalising logics. Against this backdrop, the following sections explore the ambivalent role of techno-primitivist thought and the coloniality of the digital in contemporary debates about ecology, technology, and power.

4.1. Techno-Primitivism

Techno-primitivism emerges as one of the most prominent critical responses to the ecological crisis, questioning the destructive trajectory of technological modernity. Yet, like the Anthropocene framework, it often relies on reductive and dualistic logics that obscure the structural realities of class, colonialism, and global inequality. By attributing ecological harm to “humanity as a whole,” such approaches universalise responsibility and erase the uneven distribution of technological and ecological burdens across different populations. In advocating a return to “simpler” or pre-industrial lifeways, techno-primitivism risks mirroring the same shortcomings as the Anthropocene – failing to address the material foundations of exploitation while reinforcing binaries such as nature versus technology or modern versus traditional. For this reason, it becomes necessary to interrogate how techno-primitivist critiques, despite their radical stance, may inadvertently perpetuate colonial logics and homogenise diverse human experiences, rather than offering pathways toward genuinely transformative ecological and technological futures.

In light of these mounting challenges, a range of ethical and political critiques have gained prominence, frequently manifesting as resistance movements against technological hegemony and its destructive social-ecological impacts. Contemporary Neo-Luddite movements have resurfaced in response to the deepening ecological and social harms produced by advanced technological systems. These movements critique the proliferation of technologies such as AI, digital surveillance, and planned obsolescence, drawing attention to their detrimental impacts on privacy, autonomy, labour, and the environment (Yılmaz 2023, 156-159). However, it is important to note that dominant theoretical frameworks such as the Anthropocene tend to universalise responsibility for the ecological crisis, placing equal blame on all of humanity while ignoring the stark realities of class, power, and colonial history. By suggesting that every human being is equally responsible for environmental destruction, such theories obscure the actual drivers of the crisis – namely, capitalist accumulation, extractivism, and the global inequalities produced by colonial and class-based domination. Techno-primitivism, as a response, often mirrors this universalising tendency: by advocating for a return to “simpler” or pre-industrial ways of living, it risks reinforcing the same logic of homogenisation, failing to address the material and class-based structures that underpin technological and ecological exploitation. The Anthropocene framework, much like techno-primitivist critiques, operates through a dualistic logic that divides the world into simplistic binaries – nature versus technology, modernity versus tradition, human versus nonhuman – rather than recognising the complex, relational, and hierarchical realities of power and production. While techno-primitivism offers a more radical questioning of technological progress and can be seen as a legitimate critique of the unsustainable trajectory of current societies, it nonetheless shares the limitations of theories that abstract away from class relations and historical responsibility. A leading advocate, John Zerzan, contends that technology entrenches domination and alienation, and he calls for a radical return to pre-industrial ways of living as a means of restoring ecological and social balance (Zerzan 2013a, 40-43; 2013b, 96-100, 133-134). From this perspective, it can be said that techno-primitivism is an ideology that approaches technology pessimistically. However, unless such critiques are rooted in a deeper understanding of class dynamics and the structural inequalities that shape technological development, they risk reproducing the very problems they seek to address.

As an ideology pessimistic about technology, techno-primitivism has also been criticised by Murray Bookchin. Drawing on a historical analysis, Bookchin observes that resistance to industrialisation frequently originated from romantic intellectuals, artists, and mystics, who tended to idealise rural societies – even as the semi-feudal traditions they admired were rapidly dissolving (Bookchin 1995, 150). He notes that, prior to the twentieth century, what early theorists described as “commodification” had not yet penetrated deeply into everyday life; family ties, personal relationships, and communal bonds operated outside the reach of market relations. However, since the 1950s, market society has gradually permeated all aspects of daily existence – from the bedroom to the classroom, from the kitchen to the church – leading to a culture increasingly defined by production, consumption, profit, and economic growth (Bookchin 1995, 153).

Contemporary critiques of technology, Bookchin argues, often align themselves with primitivism and forms of eco-mysticism, yet he cautions that such technophobic approaches misidentify the true sources of social malaise by shifting focus away from genuinely societal concerns (Bookchin 1995, 156). In class-based societies, the application of technology frequently manifests as the replacement of human labour with machines, the large-scale deforestation of the planet, and the exploitation of low-wage

populations in the global South – demonstrating that technology is never neutral in its social and ecological consequences, even in its most necessary forms (Bookchin 1995, 157). While some technologies, such as nuclear weapons, must be categorically rejected, Bookchin warns that divorcing technology from its broader context only hampers the rational use of its capabilities in a better society, obscuring crucial questions about how technology should be deployed. Furthermore, technophobic attitudes, in Bookchin's view, often depict technological advancement as inherently alienating, separating humanity from the natural world and colonising consciousness itself (Bookchin 1995, 160). Lastly, he cautions that technophobia carries the latent danger of devolving into reactionary forms of thought, rather than fostering genuine social progress (Bookchin 1995, 170).

Techno-primitivism, as a contemporary form of primitivism, must be understood within the broader historical context of primitivist ideologies that have justified othering and colonial domination. Primitivism itself has long served as an intellectual foundation for imperial rule, constructing certain populations as “backward” or “childlike” and thus in need of both protection and improvement under colonial authority. This logic, deeply embedded in the liberal imperial tradition, enabled colonial powers to legitimise their governance by defining themselves as “modern” in contrast to those they governed, who were cast as “primitive” or “savage.” In this sense, primitivism is not an external critique of Western modernity but a continuation of Western thought itself, reproducing its binary logic of superiority and inferiority (Basalla 1998, 253). As such, the distinction between the “modern” and the “primitive” became a central ideological mechanism for sustaining colonial hierarchies and justifying intervention, paternalism, and direct rule. Contemporary techno-primitivism inherits this legacy by positioning technologically “less advanced” societies or lifeways as fundamentally Other, reinforcing narratives of inferiority that echo older colonial discourses (Chandra 2013, 137-139).

Thus, techno-primitivism is not simply a critique of modern technology but participates in and reproduces long-standing processes of othering and exclusion that have historically underpinned colonial projects. A fundamental limitation of both techno-primitivist responses and theoretical frameworks such as the Anthropocene is their tendency to universalise the causes and responsibilities for the ecological crisis, abstracting away from the critical role of class relations. By framing the solution as a simple return to pre-industrial modes of existence, these perspectives risk implying that the presence or absence of class structures is inconsequential, as long as society is organised around non-industrial principles. This approach not only homogenises human experience and agency but also neglects the deeply entrenched class-based and material dynamics that underlie both technological development and environmental degradation. As a result, the debate is often reduced to a question of technological stage – industrial or pre-industrial – while the decisive influence of class power, exploitation, and inequality is sidelined. Such a move reproduces the very blind spots of the paradigms it seeks to critique, failing to recognise that any meaningful response to ecological crisis must foreground the role of class relations, resource distribution, and global power asymmetries.

It is for these reasons that techno-primitivist ideas have found particular resonance among far-right and fascist milieus. The pessimistic critique of technological society – its emphasis on alienation, the destruction of nature, and a return to imagined organic communities – can easily be reinterpreted through a reactionary lens, appealing to those who see in modernity not just environmental degradation but also the erosion of traditional hierarchies, identities, and social orders. As recent scholarship has shown, figures such as Ted Kaczynski (the “Unabomber”) have become unlikely icons for white

supremacists and eco-fascists, who merge anti-technological manifestos with ethnonationalist and racist narratives. These actors appropriate the language of environmentalism and techno-critique to justify violent exclusion, advocate “green nationalism,” and frame environmental crisis as a threat to “the white race,” recasting ecological concerns as part of a broader fascist project (Christ 2021). Thus, the legacy of techno-primitivism illustrates how anti-modern and anti-technological discourses, when detached from critical, pluralist, and emancipatory frameworks, risk being co-opted by authoritarian and exclusionary ideologies.

However, such radical positions raise new questions about the role of technology and modernity in shaping social justice and sustainability. The notion of “primitivism” must be critically examined, as it carries a history of being used within colonial discourse to construct non-Western ways of life as inferior. While techno-primitivism provides a radical critique of technology’s role in perpetuating exploitation, a total rejection of modern technology is neither practical nor universally desirable in today’s world. The challenge is to cultivate technological ethics that prioritise ecological and social justice, ensuring that technological development addresses collective well-being rather than reinforcing existing structures of domination and inequality (Katz 2010, 571-582; Yılmaz 2021b).

4.2. New Colonialism(s)

The digital era has not eliminated colonial patterns of domination; rather, it has reconfigured and extended them into new domains of power. As extractivism expands from natural resources to data and digital labour, contemporary societies witness the emergence of “new colonialisms” that entrench inequality through technological infrastructures and global networks. These processes are not simply metaphors but concrete mechanisms of control, where corporations and states in the Global North consolidate authority over the flows of information, platforms, and infrastructures that increasingly govern everyday life. This continuity underscores how digital capitalism sustains colonial logics while introducing novel forms of dependency, surveillance, and ecological degradation. Against this backdrop, the notion of data colonialism offers a crucial analytical framework for examining how extraction now targets not only land and minerals but also the very fabric of human experience.

Indeed, as the logic of extraction shifts from natural resources to data and digital labour, new forms of colonialism and inequality emerge. Nick Couldry and Ulises A. Mejias (2019/2022) conceptualise data colonialism as an extension of traditional colonial practices, where the extraction of value now encompasses not only natural resources but also the continuous harvesting of personal data from human lives (Couldry and Mejias 2022, 10-18). They argue that the integration of data into capitalist systems has fundamentally transformed capitalism, eroding human autonomy as individuals are subjected to constant surveillance and data extraction (Couldry and Mejias 2022, 19-27). The environmental consequences of this system – particularly through the proliferation of the Internet of Things (IoT) – are significant, as increased connectivity drives further resource consumption and environmental degradation (Couldry and Mejias 2022, 31-38). The authors highlight the emergence of the “Cloud Empire,” in which digital power is concentrated in the hands of a few dominant corporations, reinforcing global inequalities and creating new forms of exploitation (Couldry and Mejias 2022, 44-50). At last, they stress the urgent need to resist data colonialism in order to safeguard human freedom, as unchecked data extraction poses profound risks to both individual autonomy and the broader social good (Couldry and Mejias 2022, 62-66).

This logic is encapsulated in the concept of digital colonialism, which deepens the historical legacy of domination by extending it into the digital realm. One of the concepts that defines the relationship between digitalisation and inequality and exploitation is digital colonialism. Digital colonialism refers to the continuation of colonial logics through digital technologies, where dominant technology firms – primarily based in the Global North – control digital infrastructures, software, and data flows, thereby maintaining economic, political, and cultural hegemony over developing regions (Kwet 2019, 3). Just as classical colonialism relied on land dispossession and forced labour, digital colonialism operates through the extraction and commodification of data, the monopolisation of digital platforms, and the imposition of Western technological norms on the Global South. This system is upheld by a handful of corporations – such as Google, Facebook, Amazon, and Microsoft – that dictate the terms of internet access, online communication, and digital economies, often shaping policies and regulations in ways that benefit their own interests. Digital colonialism exacerbates global inequalities by reinforcing economic dependencies, marginalising non-Western languages and cultures, and limiting the autonomy of local industries and governments. Moreover, the privatisation of digital spaces and the control over algorithmic decision-making entrench racial, economic, and epistemic hierarchies, making the digital ecosystem a continuation of historical colonial exploitation in a new form (Yılmaz 2024, 186-188).

At the intersection of digital colonialism and ecological crisis, the material underpinnings of digital capitalism become impossible to ignore. The intertwining of digital colonialism and the ecological crisis reveals how digital infrastructures both reproduce and intensify longstanding patterns of resource extraction and environmental harm. The production and maintenance of digital technologies depend on a steady flow of raw materials such as lithium, cobalt, and rare earth minerals – resources extracted from the Global South, often under dangerous and exploitative conditions that most heavily impact Indigenous and marginalised populations. Driven by escalating demand for AI, cloud computing, and data centres, this extractive model results in widespread ecological degradation, forced displacement, and persistent human rights violations. Furthermore, the operation of digital systems requires immense energy and water, contributing to greenhouse gas emissions and the worsening of climate change. Despite promises of dematerialisation and efficiency, the digital economy externalises its ecological costs: waste and pollution are disproportionately shifted onto developing regions, echoing colonial-era inequalities. As a result, digital colonialism not only entrenches economic dependency but also perpetuates environmental injustice, ensuring that the Global South continues to bear the burdens of technological advancement while the Global North accrues the primary benefits (Brevini et al. 2024, 127-128). Increasingly, this process has been theorised as a form of “green neocolonialism,” in which environmental and sustainability discourses are mobilised to legitimise the transfer of control over land, resources, and governance from states and local communities to transnational corporations and NGOs, often under the guise of ecological protection or climate adaptation. Rather than empowering Indigenous and local populations, such arrangements tend to reproduce colonial patterns of dispossession, restrict economic development, and consolidate global inequalities, all while shifting accountability away from powerful actors in the Global North (Frascolla 2025).

Within this context, modern technologies – especially AI – further accelerate resource extraction, energy consumption, and ecological destruction, intensifying the very crises they claim to address. Advancements in AI are intensifying the ecological crisis by accelerating energy consumption, resource extraction, and electronic waste

generation. The development and operation of AI systems require immense computational power, with data centres alone consuming more than two hundred terawatt-hours of electricity annually, surpassing the energy use of many countries. This expanding infrastructure increases the demand for rare earth minerals such as lithium and cobalt, fuelling environmentally destructive mining, deforestation, and land degradation, particularly in the Global South. These extractive processes not only deplete natural resources and threaten biodiversity but also displace communities and subject workers to hazardous conditions. In addition, training large-scale AI models generates greenhouse gas emissions on par with heavy industries, while the cooling needs of data centres strain freshwater supplies, especially in regions already facing drought. The lifecycle of AI technologies, from production to disposal, contributes to a growing e-waste crisis, as obsolete hardware is often dumped in developing nations, exacerbating environmental injustices. Despite claims that AI can support sustainability goals, its material footprint exposes its deep entanglement with extractive capitalism, positioning it as a driver of ecological collapse rather than a remedy (Brevini and Doctor 2024, 172-173).

This systemic entanglement of digitalisation, capitalism, colonialism, and ecological crisis underscores the need for transformative interventions in both technology and environmental policy. In an eco-political context, the entanglement of digitalisation, digital capitalism, digital colonialism, and the ecological crisis reveals a system where economic and environmental exploitation are mutually reinforcing. Digital capitalism is predicated on relentless expansion – driven by the extraction of rare earth minerals, high energy demands, and planned obsolescence – creating global supply chains that disproportionately burden the Global South. Here, raw materials for digital infrastructures are mined under exploitative conditions, leading to deforestation, environmental degradation, and the displacement of local populations. Digital colonialism deepens these inequities by concentrating technological development, corporate profits, and economic gains in the Global North, while offloading environmental harm, labour exploitation, and electronic waste onto poorer regions. Furthermore, efficiency gains in information and communications technologies often result in rebound effects – higher total resource use – rather than true sustainability. Despite narratives of digital dematerialisation, the ecological footprint of digitalisation continues to expand, amplifying climate change and resource depletion while reinforcing global inequalities. This interconnected crisis highlights the urgent need for critical interventions in both technological governance and environmental policy, aiming to disrupt exploitative practices and promote genuine sustainability. In this sense, the ecological crisis itself increasingly appears not as a neutral or universal predicament, but as a terrain of class struggle, wherein the costs of environmental degradation and resource exhaustion are systematically imposed upon the world's most marginalised and dispossessed populations (Kostakis, Roos and Bauwens 2016, 87-92).

The foregoing discussion demonstrates that both techno-primitivism and dominant frameworks such as the Anthropocene, despite their critical intentions, often reinforce colonial logics and universalise responsibility in ways that obscure class relations, extractivism, and global inequalities. At the same time, the colonality of the digital reveals how ecological destruction is structurally embedded within digital capitalism, ensuring that exploitation extends beyond natural resources to encompass data, labour, and knowledge systems. These limitations make it evident that critique alone is insufficient: without a constructive and affirmative vision, such perspectives risk remaining trapped in the very binaries they seek to transcend. For this reason, the next section turns to the question of solutions, asking what alternatives might break with extractivist and

colonial paradigms while advancing ecological justice and technological ethics. By foregrounding decolonisation and relationality as central principles, it becomes possible to chart pathways that resist domination and foster more just, reciprocal, and sustainable futures.

5. What is the Solution Then?

The limitations of frameworks such as the Anthropocene and techno-primitivism highlight the need for alternative approaches to the ecological crisis. By attributing responsibility to “humanity as a whole,” these theories universalise culpability and obscure the structural inequalities that define the modern world. In doing so, they neglect the class antagonisms, colonial legacies, and exploitative dynamics that have historically driven environmental degradation and continue to shape its consequences today. To move beyond reductionist and dualistic perspectives, a more transformative path must be sought – one grounded in decolonial and relational approaches. Such an orientation emphasises plurality, reciprocity, and the active participation of those most directly impacted by ecological and technological exploitation, offering a framework for justice and sustainability that directly confronts the roots of the crisis.

5.1. Decolonisation

Decolonisation offers a necessary framework for addressing the ecological crisis because it confronts the structural inequalities and historical power imbalances that continue to shape global patterns of environmental degradation. While the crisis is often framed as a universal challenge, its origins lie in colonial and capitalist extractivism, which systematically depleted the resources of formerly colonised regions while consolidating wealth and political power in the Global North. The consequences of this history are evident in the disproportionate burdens borne by marginalised communities in the Global South, despite their minimal contribution to ecological harm – a dynamic often described as “ecological apartheid.” Conventional global governance mechanisms, including climate agreements and development strategies, frequently fail to redress these injustices, instead reinforcing market-based approaches that privilege powerful states and corporations. Against this backdrop, decolonisation entails more than recognising past harms: it requires dismantling the logics of class-based domination and exploitation that underpin both ecological collapse and digital dependency. In doing so, it envisions futures grounded in reciprocity, equality, and collective ownership, where technology is reimagined not as an instrument of extraction but as a resource for sustainability and justice.

Building on this imperative, it becomes clear that any attempt to decolonise both the ecological crisis and digital infrastructures must begin by re-evaluating whose knowledge and perspectives are recognised and valued. Reconsidering the notion of the “indigenous critique” means taking seriously contributions to social thought that originate outside the European canon – especially those from Indigenous peoples who have often been cast by Western philosophers as either the angels or demons of history (Graeber and Wengrow 2024, 20). Both positions, as Graeber and Wengrow argue, foreclose the possibility of genuine intellectual exchange or dialogue: it is just as difficult to debate with someone presumed demonic as it is with someone presumed divine, for whatever they think or say is dismissed as either irrelevant or overwhelmingly consequential. While direct conversation with many of these historical figures is no longer possible, Graeber and Wengrow insist on writing about them not as passive specimens or mere objects of prehistoric laws, but as people who, when alive, could have been engaged with as real interlocutors. Indigenous thought offers a powerful

lens for understanding and challenging the intertwined dynamics of ecological crisis and colonialism.

As Mario Blaser and Marisol de la Cadena (2018) explain, the dominant, extractivist worldview – shaped by the “one-world world” – reduces nature to a passive resource, denying the agency and reality of non-human beings and worlds. This extractivist logic enacts a form of contemporary colonial occupation by treating lands as empty (*terra nullius*), erasing diverse ways of being, and justifying the accelerated removal of natural resources for global economic growth. While such practices have become hegemonic across governments regardless of ideology, Indigenous peoples – often in alliance with peasants, NGOs, Afro-descendant groups, and others – play a significant role in resisting extractivism and articulating alternative, plural ontologies. By foregrounding the existence of “many worlds,” Indigenous perspectives expose the colonial foundations of the ecological crisis and propose decolonial approaches that challenge the universalising assumptions of Western modernity (Blaser & de la Cadena 2018, 2-3).

5.2. Relationality

Within this landscape, the imperative to decolonise the ecological crisis and digital infrastructures converges with a broader need to rethink the very foundations of knowledge, existence, and social change. The concept of relationality emerges here as a radical alternative to the individualistic, dualistic, and extractivist logics that underpin both modernity and global capitalism. As Arturo Escobar, Michal Osterweil, and Kirti Sharma argue, the dominant narrative of modernity has normalised certain “truths” – scarcity, competition, and rational self-interest – as if they were ahistorical laws of nature, while systematically marginalising or erasing deeply relational ways of living and knowing (Escobar, Osterweil and Sharma 2024, 3). This ontological dualism – separating subject from object, human from nature, and self from community – has served to naturalise domination, justify dispossession, and render the violence of colonialism and capitalism invisible (Escobar, Osterweil and Sharma 2024, 4-5). In contrast, Indigenous ontologies and practices, as well as critical social theories from the Global South, foreground relationality as the ground of being, insisting that individuals are always embedded in networks of relationships – with other people, with non-human beings, and with place (Escobar, Osterweil and Sharma 2024, 5-6).

This emphasis on relationality is not exclusive to indigenous worldviews; for instance, in African philosophy, Thaddeus Metz articulates a theory of moral status grounded in relational rather than individualistic or purely holistic foundations, proposing that moral consideration arises through specific interactions and mutual recognition rather than fixed group identity or abstract individual autonomy (Metz 2019, 11-14). To decolonise knowledge and address the ecological crisis requires not just the inclusion of marginalised voices but a reconfiguration of the very terms of engagement – a shift from knowing about others as objects, to knowing with others as co-creators of worlds. This relational paradigm does not merely acknowledge the interconnectedness of life; it actively cultivates practices of reciprocity, solidarity, and responsibility (Escobar, Osterweil and Sharma 2024, 6-7). The principle of *ubuntu* – “I am because you are” – is emblematic of this worldview, emphasising that our well-being and agency arise in and through relationship, rather than in isolation (Escobar, Osterweil and Sharma 2024, 6). Indeed, such relational ethics find parallels in Daoist philosophy as well, which is rooted in a non-dualistic epistemology that resists the objectification of nature and others, instead nurturing creative, peaceful, and ecologically attuned forms of knowing and being (Wang 2021, 100-102). The Daoist orientation toward fluidity and the dissolution of

fixed subject-object boundaries resonates with efforts to overcome alienation and hierarchy embedded in Western dualism, as well as with contemporary calls for integrative, relational creativity in the face of ecological crisis. This dynamic, however, is not confined to the West alone; with the hegemony of capitalism, it has assumed a globally dominant position.

Importantly, anti-colonial and intersectional theories have challenged both capitalist and traditional socialist frameworks for their neglect of these deeper dimensions of power, knowledge, and interdependence (Masquelier 2023, 3-4). Contemporary intersectional socialism, for example, affirms the “radical interdependence of all living beings” as foundational to any just and sustainable future (Masquelier 2023, 4-5; Escobar 2020, 40). This practical dimension is reflected in social psychology and policy as well: identity and moral reasoning are shaped not in isolation, but through embedded social ties and networks – a perspective which informs not only ethical theory, but also the development of public policy that recognises individuals as fundamentally relational beings, making decisions shaped by their interconnectedness with others (Lejano and Kan 2022, 11).

Relationality thus becomes not just a philosophical ideal, but an actionable method – a utopian technique – for reimagining social and ecological transformation (Masquelier 2023, 5). To adopt a relational perspective is to recognise that neither individuals nor societies exist in isolation, but are always constituted through dynamic, co-creative, and sometimes contested relations. It is in this light that the decolonisation of the ecological crisis – and of digital media – can be understood as a call to rebuild the world on the principles of reciprocity, mutual responsibility, and the recognition of many worlds, rather than the domination of one. In this sense, relationality serves as both an ethical and ontological foundation for genuinely transformative responses to the intertwined crises of the current time (Escobar, Osterweil and Sharma 2024, 7-9; Masquelier 2023, 19).

This shift toward decolonial, relational approaches is already visible in a growing number of community-led digital and environmental justice initiatives across the world. In the Amazon, Indigenous groups such as the Shipibo-Conibo have adopted drones and geographic information systems technologies to monitor illegal deforestation, combining digital surveillance with traditional ecological knowledge to co-manage forests and assert their authority in conservation. In subarctic Canada, the Food Equity and Environmental Data Sovereignty (FEEDS) is a Métis-led effort that co-develops smartphone applications and digital platforms to monitor environmental changes and food security in real time, with strict community control over all collected data. In Australia, Aboriginal and Torres Strait Islander collectives are developing a Digital Climate Stories Platform that blends Indigenous storytelling with climate data, fostering Indigenous data governance and building resilience through peer networks. On the African continent, the Masakhane Natural Language Processing Collective exemplifies a grassroots movement for data sovereignty by collaboratively creating open-source language technologies for African languages, while the Zenzeleni Mesh Network in South Africa provides solar-powered, community-owned internet infrastructure that empowers local governance of digital connectivity. In Cameroon, Indigenous communities are formulating ethical data governance frameworks to protect local knowledge from exploitation and to challenge algorithmic colonialism. Collectively, these examples illustrate how Indigenous and local actors are leveraging digital tools to reclaim knowledge production, assert rights over data and territory, and develop new forms of environmental and technological self-determination rooted in principles of reciprocity and pluralism.

In sum, addressing the ecological crisis in the digital age requires nothing less than a radical reconfiguration of the relationships between technology, knowledge, and power. By grounding responses in decolonisation and relationality, it becomes possible to move beyond technocratic, primitivist, or market-oriented paradigms and toward futures rooted in reciprocity, plurality, and collective responsibility. Such an orientation not only disrupts the colonial and extractivist logics embedded in global systems but also foregrounds the agency and wisdom of communities historically marginalised by dominant frameworks. A transformative response to the intertwined crises of ecology and digitalisation depends on embracing relational ethics – recognising interdependence, valuing diverse epistemologies, and cultivating solidarities that transcend borders. Only by weaving together these alternative frameworks can the structural roots of ecological injustice be dismantled and more equitable, resilient, and sustainable worlds be envisioned.

6. Conclusion

This study demonstrates that today's ecological crisis cannot be separated from the enduring histories of colonialism, extractivism, and the uneven development of digital capitalism. Rather than being a neutral outcome of undifferentiated "humanity," environmental destruction is the product of global processes that have systematically concentrated power, privilege, and resources in the Global North, while externalising environmental costs and risks onto marginalised communities, particularly in the Global South. Concepts like the Anthropocene, while useful in foregrounding planetary change, can inadvertently depoliticise the origins and ongoing mechanisms of ecological harm by masking the underlying structures of domination and historical responsibility.

Digitalisation, far from resolving ecological challenges, often deepens global inequalities and reproduces extractivist logics under new guises. The expansion of data infrastructures, the extraction of rare minerals for digital technologies, and the proliferation of e-waste all disproportionately impact those already rendered vulnerable by colonial and capitalist legacies. At the same time, the rise of data and digital colonialism has led to the concentration of informational, economic, and cultural power in the hands of a few, while perpetuating global patterns of dependency, exclusion, and epistemic injustice.

In this context, the critical evaluation of techno-primitivist thought is vital. While techno-primitivism foregrounds the alienating effects of modern technology, it risks reproducing colonial binaries and positioning non-Western or Indigenous epistemologies as static and backwards rather than dynamic and generative. A truly emancipatory response requires moving beyond both technocratic and primitivist paradigms and instead adopting a relational approach that centres the agency, rights, and knowledge of those most impacted by ecological and digital exploitation, as well as a non-market-oriented understanding.

Encouragingly, these alternatives are already visible in Indigenous- and community-led initiatives across the globe. From Amazonian drone monitoring that blends digital tools with traditional ecological knowledge, to African grassroots data sovereignty movements like Masakhane and Zenzeleni, and Métis and Aboriginal projects governing environmental and climate data, these examples offer practical models for decolonising both ecological and digital futures. Such efforts demonstrate that relationality, pluralism, and solidarity are not abstract ideals, but concrete strategies for justice and sustainability. In the end, meaningful engagement with the intertwined crises of ecol-

ogy and digitalisation depends on integrating ethical, ontological, and political commitments to relationality and decolonisation. Building on these commitments, future pathways should explicitly prioritise non-market-oriented approaches that resist commodification and instead foster reciprocity, collective responsibility, and ecological care.

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