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RESEARCH ARTICLE

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What is Extinction? Ecopolitics of the End

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Abstract

In recent years, extinction has become something of a buzzword used to portray the state of consciousness of the epoch. Its definition as a concept, however, heavily oscillates between naturalistic, speculative, ethical and critical connotations. The aim of this paper is to build an original position around some of the most relevant issues raised by the concept of extinction, such as the position of humankind as both its perpetrator and victim, the role of extinction management in contemporary biocapitalism and a possible critical engagement with catastrophe that avoids both paralysis and underestimation. The first section addresses some aspects of the question on ‘what is extinction’ starting from its biological meaning and elaborating on its ontological implications. The second section scrutinizes two relevant approaches to extinction within contemporary humanities, that is speculative realism and extinction studies, and highlights their respective shortcomings. The third section advocates for a more explicitly political conceptualization of extinction and indicates in the biopolitical framework a relevant source of critical categories. The fourth and final section tentatively introduces a constructive claim around the possibility of an ecopolitics of extinction.

Keywords

Extinction studies, biopolitics, political ontology, thanatopolitics, speculative realism

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REVISED Amendments from Version 1

Following the reviewers' remarks, I have added references to literature from the natural sciences and the contemporary debates in ecopolitics.

Any further responses from the reviewers can be found at the end of the article

In recent years, extinction has become something of a buzzword used to portray the state of consciousness of the epoch, the one that Guattari (1997: 91) once defined as the “conjunction of all possible convulsions”. As scientists warn us that we are on the brink of a human-induced mass extinction (although a ‘slow’ and protracted one: see Rull, 2021; Cowie, Bouchet & Fontaine, 2022), it seems safe to say that “there is no better time to raise the question of ‘What is extinction?’” (Schuster, 2023: 4). The question, however, remains open. The concept of extinction, “polysemous if not overdetermined” (O’Key, 2023: 168), is conjured in many senses and with many different meanings, and not much clarity has yet been made on its various semantic and philosophical implications. This paper aims at introducing an original position that touches on some of its most relevant intricacies. The naturalistic approach to the concept will soon be abandoned in order to include the historical relevance of the current extinction for us. The answer on the *quid est* of extinction, then, will not be given from the perspective of scientific epistemology. Different approaches in the humanities will be taken into scrutiny and conceptualized as conveying different postures towards the extinctive event. Ultimately, the most urgent ground on which the question must be answered will be identified in critical and political theory. A political outlook on extinction is that which many (although not all) contemporary approaches explicitly recognize as the most pressing; and yet, only specialized contributions in the ecopolitics of extinction have taken this direction. The present paper aspires to deepen this kind of theoretical engagement with extinction with philosophical means, thus hoping to pave the way for future research.

1. Preliminary notes for a theory of extinction

What is extinction? Biology portrays it as the natural process of disappearing of a species (see Delord, 2010). *Mass* extinction, on the other hand, is a much rarer event of substantial and rapid decrease of biodiversity on a planetary scale. According to the landmark research by Raup and Sepkoski (1982), there have been at least five mass extinctions in the history of the Earth, all sharing these common traits. Natural sciences describe extinction according to their indirectly observable effects. If one looked instead at the causes of each extinctive event, one would face nature’s whole paraphernalia: asteroids, cyanobacteria, volcanic eruptions, glaciations... From this angle, every extinction looks different; so much so that an inquiry on the causes seems to contradict the possibility of producing a single concept of it.

On a philosophical level, however, one can identify a same element at the origin of all mass extinctions: a differential component, that is a distance, a hiatus between a relative equilibrium and an external agent that acts as a factor of disruption. Take the case of the world of non-avian dinosaurs and the asteroid. In this instance, the external agent was exterior to the planet itself, although still internal to what we may call ‘nature’, or the known universe. In the case of the Great Oxidation Event, instead, when the action of cyanobacteria killed the Archean’s procaryotes two and a half billion years ago, the disruptive agent was internal to the Earth system, but constituted itself as an exteriority to the Archean world and its inhabitants.

Today, there is sufficient consensus among the scientific community on the fact that we are on the brink or at the beginning of a new mass extinction, the sixth – and that denying it, as some do, “paves the way for it to happen” (Cowie, Bouchet & Fontaine, 2025). Just like in the Great Oxidation Event, an agent internal to the Earth system has become an innermost extraneity of the planet: humankind. The main peculiarity of the sixth mass extinction is precisely that its agents are the human beings. From the viewpoint of natural history, however, one cannot say that this peculiarity sets it apart from the other five, as human beings are natural agents just like the asteroid and the cyanobacteria. In this sense, for instance, O’Key (2023: 171) asserts too hastily that the sixth mass extinction is “an outcome not of natural (read: incidental) atmospheric and ecological upheavals alone but of a long chain of social decisions and actions”, as if the agent of the sixth extinction was a sovereign subject that, contrary to the rest of nature, understands all the consequences of their actions. In principle, those positions who interpret a human-induced extinction as something ontologically different from the other ones are wrong. As Steven Vogel (2003: 152–53) recalls, “you can’t distinguish between species that disrupt the stability of ‘naturally evolved checks and balances’ and those that remain within ‘naturally constrained ecological niches’ unless you’ve already decided that natural systems are all marked by stability”, that is unless you presuppose that nature is intrinsically stable and human action is (at least potentially) disruptive.

Extinction is something that nature does to itself, and many entities of nature can constitute themselves as extinctive agents depending on the circumstances: it is a vital and fully ‘normal’ aspect of earthly life’s development (Gould, 1989: 309, 318). As Ware (2024: 5–6) summarizes, “the subject that emerges from nature, and which separates itself off from nature in order to achieve a kind of self-relating independence, is, we might say, an effect of the *non-identity at the heart of nature*, the failure of nature to be fully natural”. The human difference is not the only possible difference within an otherwise pristine, smooth ‘first nature’, as reads the Hegelian argument on human culture as a “redoublement” of nature (see Bertram, 2020). Once one broadens their gaze to the apocalyptic course of planetary history, one realizes that earthly life could have disappeared much more easily than it has persisted; yet in no moment of this story a choice has been made for annihilation or survival.

If humans were the first beings to ever take a decision for the good or the bad of the planet – if they were the only species capable of separating itself from its natural conditions –, then extinction should not be a problem for them, because they could always steer the wheel and return on the right course. But extinction is a problem for humans because they are entangled with the complex of conditions in which earthly life consists – not because they can reflexively witness the results of their own doing, but because they can be damaged and even destroyed by what they do to their own environment. We are no such thing as the “shepherds of Being” (Heidegger, 1977: 210), nor there is an *ontological* difference between our “being-there” and the Being itself: the difference is rather a contrast between heterogeneous elements internal to the same ontological domain, one of which has become catastrophically relevant for the other. Humans can trigger a mass extinction precisely because they are nature.

From this perspective, it remains unclear why we should bother so much talking about extinction. In other words, a naturalism of extinction does not grasp the reasons of our concern revolving around this event, and leans towards a sort of materialist fatalism (we are nature, nature is the same thing as its extinction, we are able to become agents of extinction ...). Even if we avoid a moralization of nature, then, we have to surrender to the necessity of a double view: we are not ontologically different from any other agent of mass extinction in the past, but at the same time we are peculiar beings and we differ from the protagonists of the other extinctions as of our modes of existence, as much as the asteroid differs from the cyanobacteria. Therefore, extinction is *also* our concern: not only a planetary biological event, but also a human event. Here lies a shift from an objective to a subjective perspective internal to the concept, and a reflection on the subjectivity of extinction becomes imperative (as I will argue extensively in the last section). Extinction is no longer a ripple in the cosmic ocean, but also an event of death and conclusion along a much shorter timespan: not a simple deadly event, but also the Event itself, the catastrophe as the unthinkable (Lyotard, 1988); not a crisis that can find a new historical synthesis, but a collapse of history (Ware, 2024); not a future of endings, but the ending of the future (Berardi, 2011).

Time regains a sort of arcane power of destruction, as the deep time of natural history bursts into human time and diffracts it. The destructions of worlds in the human past (e.g., colonial genocides) enter into resonance with the catastrophes of pre-human history in light of a looming threat that seeps into the present on a material and an imaginative level. “For the majority of the world the collapse has already happened, but the scientific community is increasingly thinking that we are faced with a total collapse of civilization, most possibly in the lifetime of those of us who are reading these notes” (Jordan, 2021: 390). The here-and-now is stretched to a new complexity, invaded and destabilized. The end of the world, write Danowski and De Castro (2017: 19), “drags us in two opposing directions, toward a past and a future that are equally double, each with an ‘empirical’ and a ‘transcendental’ face: the obscure and violent past of generation (cosmogenesis, anthropogenesis) and the painful future of decadence and corruption, or of the expectation of death”, but also, as I mentioned, towards the cataclysmal events of the immediate past and future of humankind, which reveals itself as a record of worlds destruction.

The complex temporality of extinction is not accurately represented by any form of millenarism precisely because extinction is not only human, but both human and non-human, in the sense of the above-described duplicity. Millenarism is a symbolical (i.e., cultural) device that functions as a narrative or discursive expedient (Kermode, 1967): an entirely human phenomenon. Extinction too is also a grand meta-narration of our times, endowed with its own history on the discursive plane (Sepkoski, 2020), but it is not primarily symbolical. Commenting on the nuclear threat, Derrida (1984: 23) described catastrophe as a “fabulously textual” event, first generated by the human symbolic access to the world and then translated into a narration on ‘the human’ as a being capable of self-annihilation and responsibility. Extinction as well is characterized by a high degree of symbolism, both in its causes and its effects, and raises many fundamental questions on the symbolical level; but in itself, it is a non-symbolical event that challenges our very faculties of symbolization. Those who treat it as a “fabulously textual” phenomenon do so whether to deny it, defer it, or, on the contrary, to reduce it to a controllable element, that is to symbolically hide it. Critical thinking has the task of inventing alternative ways to engage with extinction on the symbolical level after having fully acknowledge its non-symbolical nature.

2. Stories and nothingness

We have come to a preliminary definition of extinction as a non-symbolical, more-than-human event that has primarily to do with time and that can and should be engaged with also on the symbolical level. Within the humanities, symbolical engagements with extinction range from a generalist use of the term denoting the present zeitgeist to in-depth analyses deriving from coherent approaches. Two major trends in philosophy and culture theory are particularly symptomatic of the ways in which extinction is often addressed today: speculative realism and extinction studies. In this section, I will briefly analyze these two trends in order to highlight their respective shortcomings.

Many contemporary authors ascribable to speculative realism conceptualize extinction via the ancient idea of a destructive irruption of the non-human into the human world. Be it in the nihilistic sense of a *fixum malum*, an evil order of the universe (Sgalambro, 2005: 61), or in the more vitalist meaning of a *turba gentium*, a transcendent event that floods the world to allow for a new creation (Grant, 2006: 202), extinction here functions as an anti-correlationist device to prove the limitedness of supposedly anthropomorphic approaches. One of the clearest examples is provided by the works of Ray Brassier. In his *Nihil Unbound*, Brassier (2007: 225, 228) claims that the “truth of extinction” lies in its being the “irrecusable factum” that “disarticulates the correlation” between human beings and things. Extinction is, in this sense, “the traumatic seizure of phenomenology” (Brassier, 2007: 232). More than Quentin Meillassoux’s “arche-fossil”, which finds the proof of the non-human in the ancestral past, Brassier’s concept of extinction rises to the role of a geological transcendental due to its temporal ubiquity: extinction is not only in the deep past, but everywhere around the fragile present of human experience – a horror beyond the limits of knowledge. The same cosmic pessimist inspiration can be found for example in Eugene Thacker’s *In the Dust of this Planet* (Thacker, 2011), where extinction is again amplified into one of the most important categories of speculation. But the themes of the end and human catastrophe are now relevant for speculative realism at large, not only in its nihilistic strands (Badiou & Tusa, 2019).

Brassier exemplarily argues that extinction is a “transcendental trauma”, “the conceptual transposition of a physical phenomenon which undoes the phenomenological resources through which the manifest image would make sense of it” (2007: 234). The idea of transcendental trauma or “geotrauma” is central to these positions (Kronic, 2012). Exactly like trauma in psychoanalytic theory, extinction has always already happened (“everything is dead already”, Brassier, 2007: 239) because the irruption of exteriority is not mainly historical (i.e., it does not occur at a certain point in time or along an independent story), but transcendental, which means that it determines the conditions of possibility of something (in this case, history) without being part of it. In psychoanalytic theory, trauma determines the conditions of possibility of a subject by constituting itself as an origin of the subjective structure. Trauma is absolutely meaningless in itself, because it gives rise to a reference system of meaning *without being part of it*, and is excluded by it as a repressed; the repressed ‘returns’ to the subjective system from another dimension without ever becoming present and finally revealing itself as the system’s ‘destiny’ (Lacan’s *tyche*), its inevitable necessity. The theorizers of geotrauma transpose this logic to characterize extinction as a generating event in the history of the Earth that is also its repressed and its absolute negation: the Earth is born from extinction(s) and extinction is its principle and its destiny, always already happened and also yet to happen.

The theory of geotrauma satisfies the philosophical palate at the price of sublimating the concept of extinction, which becomes an ontological transcendental, that is a metaphysical principle of the biological and the human world. There is no room here for human nor for natural history. On one hand, the human becomes a homogeneous hyper-subjectivity, an abstract universal concept that does not take into account the difference between human groups as regards the responsibility of triggering a mass extinction. And this is because, on the other hand, the humanity of the extinctive event (the fact that it is human-induced) is completely disregarded. However, by enshrining a human-induced phenomenon as a universal principle, speculative realists naturalize the historical result of concrete power dynamics. Speculative realism is ultimately a metaphysicization of extractivism and capitalist predation – which makes perfect sense, if capitalism is understood as a production system based on abstraction, acceleration and the dissipation of concreteness. Speculative realists intend to move a materialist criticism to phenomenological correlationism and end up producing a “fabulously textual” argument on extinction if ever there was one.

An opposite vision is conveyed by the recently emerged field of extinction studies, which aims to concretize extinction as a tangle of stories and encounters, and therefore as something that essentially relates to us. The founding volume of extinction studies, edited by Deborah Bird Rose, Thomas van Dooren and Matthew Chrulew in 2017, is a repertoire of convergences between humans and endangered species that aims to make extinction perspicuous as a concrete and complex phenomenon of the present. The underlying assumption of this view is that “there is no singular phenomenon of extinction: rather, extinction is experienced, resisted, measured, enunciated, performed and narrated in a variety of ways to which we must attend” (Rose *et al.*, 2017: 2–3). “This is not a book about extinction in the abstract”, the editors continue, “nor does it explore the complicity of responsibility of an amorphous ‘humanity’. Rather, it is an effort to inhabit

sites of incredible biological and cultural diversity – much of it, sadly, threatened – in a way that acknowledges that specificity matters”.

This perspective, prepared and continued by a good number of contributions (e.g., Skrimshire, 2022; van Dooren, 2014, and many articles in the journal *Environmental Humanities*), embodies the ‘narrative’ approach to extinction that has been popularized by works such as *The Sixth Extinction* by Elizabeth Kolbert (2014) and others before her (Leakey & Lewin, 1995). By treating extinction as a tangle of stories that can be participated in, this approach conveys an opposite sensibility than the one – strongly ‘philosophical’ – of speculative realism and makes an effort to produce an integration between cultures and the extinctive event. However, in renouncing to formulate a cultural critique of the causes (O’Key, 2023: 180) and emphasizing the pathos of grief and the sense of loss in “we who remain behind” (Rose, van Dooren, Chrulew: 11), it ends up appealing to the individual consciousness without providing any instrument to actively engage with the problem (even just on the level of understanding), thus contributing to naturalize extinction as an overwhelming destiny. The dominant tone of extinction studies remains emotional and ethical – the symmetrical counterpart of the cold, geometric nihilism of hyper-philosophical speculation. And yet, if it is not part of a political critique, the accent on radical compassion can become ambiguously close to speculative nihilism, as in the discourses on “embracing death” and the joy of life extinction (McCormack, 2020).

For these reasons I would claim that this sort of bio-existentialism is not a good alternative to speculative sublimation. Other contributions in the cultural studies are more attentive to the political and historical dimensions of extinction (Dawson, 2016; Heise, 2016) and other voices in philosophy offer relevant insight without surrendering to abstraction (Colebrook, 2014a; Colebrook, 2014b; Grusin, 2018); but none of these aims to a well-rounded political-philosophical critique of extinction, which still lays dormant. Marxist accounts of extinction (Crawford, 2022; Ware, 2024) are more promising in this respect, but they ultimately still fall into the “constructivist” pitfall (Danowski & De Castro, 2017: 46). The Marxist perspective has yielded invaluable results at the analytical level (e.g., Moore, 2015, 2016). At the prognostic level, it could serve to reveal that extinction is not a metaphysical threat to humankind, but a historical crisis of capitalism – i.e., not an instantiation of the *schöpferische Zerstörung*, the principle of creative destruction that is an integral part of capitalism itself, but a crisis of crises and a chance for revolution. However shareable, such view remains still too tied to a dialectical vision of history if it is not complemented by more ad hoc instruments of reflection.

3. The biopolitics of extinction

I have argued for the insufficiency of both speculative and narrative accounts of extinction. Extinction is not a transcendental event related to a hyper-subjectivity, but a constellation of material events that have to be engaged with by a multitude of political subjectivities. This most certainly has many ethical, psychological and epistemological implications; but in itself, it is not first and foremost an ethical, psychological or epistemological problem. In what follows, I would like to show the necessity of discussing extinction as a biopolitical device of contemporaneity. The core of this idea is that extinction today is first and foremost something that is managed in order to maintain the separation line between Life and Death. In other words, deciding how life survives is a way of deciding on who lives and who dies.

One of the latest chapters of the global attack on the commons perpetrated by capitalism is precisely the management of life and death and the environmental control of human and non-human populations. Once acknowledged the devastation of the biosocial commonwealth as a “tragedy” (Hardin, 1968) of which we are all responsible *and* as an epochal opportunity to evolve, capitalism entered its ‘eco’ phase (Corporate Watch, 2016). Eco-capitalism now aspires to redesign the spaces of biological life and possible inhabitation in the name of sustainability, biosocial diversity conservation and green development. This narration holds the power to synthesize previous biopolitical devices – such as biotechnology – by including them into a wider frame. Today, capitalism seems already morphing into another phase. The instruments of eco-capitalism, however, will most certainly be repurposed outside its ideological framework, which will make them even harder to become subjects of critique. This tendency is also inherent to capitalism at large, insofar as it “makes ‘economy’ depend on ‘nature’, while dividing them ontologically” (Fraser, 2022: 62).

Eco-capitalism avails itself of two complementary regimes of strategies: conservationism and constructivism. Conservationism is a deeply rooted approach in environmental culture (Caro *et al.*, 2012; Kupper & Wöbse, 2021; Lorimer, 2015) that has spread from the hard ecological sciences (Gafta & Akeroyd, 2006; Kareiva & Marvier, 2012; Kareiva & Marvier, 2014) to the humanities (de Smalen, 2022; Holmes *et al.*, 2022; Ritson *et al.*, 2024). The ecopolitical stakes of conservationism become particularly evident in the case of territorial and geographical management (Garlick & Symons, 2020), with strategies aimed at the creation of zones of environmental control (green corridors, parks, sustainable landscapes, reforestation zones, rewilding zones) to the purpose of conserving and preserving resources and biosocial diversity. Scholars have reconstructed how these policies have evolved from authoritarian models of conservation that participated in the strengthening of modern colonial states (“fortress conservation” models) to softer models based on the

participatory co-management of inhabited areas, where the knowledge of natural and cultural ecosystems becomes subservient to processes of domination (Gambon & Bottazzi, 2021), just to return in more recent years to a newly authoritarian, market-dominated form of management following the neoliberal model (Vaccaro *et al.*, 2013; Wilshusen *et al.*, 2002). More efficaciously than the others, this last model performs the collateral function of preventing climate action (Fremstad & Paul, 2022).

If conservationism per se is the prosecution of colonialism with other means (Dowie, 2009; Duffy, 2010), insofar as it is based on territorial exclusionary policies as tools of territorial homogenization and cultural universalization (Sullivan, 2010), neoliberal conservationism is the last declension of this strategy, characterized by commodification, deregulation and privatization (Brockington & Duffy, 2011; Igoe & Brockington, 2007), but also by the encouragement of displacement (Bezgrebelna *et al.*, 2023), anti-immigration policies and ethnic cleansing. Its purpose, of course, is not primarily political, but extractive (Le Billon, 2021). On a theoretical level, neoliberal conservationism has definitively abandoned the idea of restoring 'pristine nature' and embraced a constructivist spirit based on economic management and governance. Unlike eco-constructivism, however, conservationism predicates the necessity for human communities to adapt to unfavorable conditions as a justification for curtailing policies, to be intended as territorial repartitions of life and death.

The constructivist approach, on the other side, is based on strategies of environmental control through direct technological modification of ecosystems. It is the myth behind the large-scale strategies of geoengineering and climate control (e.g., solar radiation management, stratospheric aerosol injection, carbon capture, ocean regulation), considered by many the only viable ways to address the ecological crisis (Baskin, 2019; Buck, 2019; Kostigen, 2021; Lenton & Vaughan, 2013; Morton, 2015; Wagner, 2021). Such myth is typically supported by techno-positive narrations that see sustainability as a product of progress, like eco-modernism (Dawson, 2018: 181–188). Its "fundamental fantasy", as Frédéric Neyrat (2019: 2) has it, is "that the Earth, and everything contained on it – ecosystems and organisms – humans and nonhumans, can and must be reconstructed and entirely remade". This omnipoietic belief repeats and amplifies the capitalist delusions of unending progress and growth through a blind faith in technoscience in defiance of the most basic principles of ecology.

Such predatory misunderstanding of the environmental crisis radicalizes the biopolitical implications of conservationism by extending the principles of environmental design to entire ecosystems and virtually to the whole planet (Wahl, 2006). A planet that can be completely (re)designed is a planet where all forms of life are more or less thoroughly marked and controlled. It is no chance that all eco-constructivist strategies bracket the fragile balances of international law in the name of the greater good of humankind. A denial of alterity and finitude of such proportions is grounded in what is ultimately the capitalist power of abstraction of all conditions, and goes hand in hand with a spiritualist reformulation of "our sense of being human" (Clingerman, 2014: 10) – a whole theological anthropology that is well summarized in the words of Stewart Brand, co-author of the *Ecomodernist Manifesto*, in his article tellingly titled *Rethinking Extinction* (Brand, 2015): "What we might be seeing in response to climate change [...] is starting to look very much like a global acceleration of evolutionary rates". This malicious anthropofuturology is a rhetoric that has always accompanied the think tanks gathered to prophesize on the incipient planetarization since the middle of the last century: catastrophe is an opportunity to evolve. This kind of discourses fictitiously place a homogeneous hyper-subjectivity (the Anthropos, metaphysically godly and culpable) on an imaginary evolutionary slide in order to naturalize the continuation and the aggravation of a twisted state of things.

Conservationism and eco-constructivism are different but ultimately convergent answers to the problem of extinction that take advantage of it as governmental devices. They are two large-scale biopolitical attempts to harness extinction, whether as a chance to tighten the grip of current governance on human and other-than-human populations or to trigger a collective transformation towards the next restructuring of the capitalist production system. The difference between the two is the difference between creating wildlife parks and trying to resuscitate dead species, between forced control and delusion on omnipotence. If conservationism is the paranoid soul of the biopolitics of extinction, constructivism is its schizoid counterpart. Different dystopias emerge from their respective subconscious: an Earth in which the human population has been halved to make space for wilderness (Wilson, 2016) and an Earth where the human population can grow indefinitely by decoupling economic growth and environmental impact (Asafu-Adjaye *et al.*, 2015).

I employ the notion of biopolitics to designate such ways to control forms of lives, populations and fluxes of bodies that call for a wider understanding of the domain of politics. More recent extensions of this notion, however, may be even more explicative. For instance, the biopolitics of extinction is most clearly also a thanatopolitics (Murray, 2018), insofar as it literally consists in the management of death in a populationist sense. Its subject are populations (i.e., territorially determined portions of a species) that are dying and as such need to be managed; the concept of 'dying population' is then

extended indefinitely to all biological life located in certain ecosystem. The thanatopolitical gesture does not question the reasons of death: it harnesses death as a means of control and government. As a consequence, it turns into management of life.

Elizabeth Povinelli's political "geontology" (2016) is another useful instrument to further characterize the biopolitics of extinction. As the author points out, late liberal governance aims to maintain a determinate distinction between Life and Nonlife. The capital works precisely by maintaining and govern this difference. In this sense, extinction becomes entirely functional to governance: the very extension of extinction from a biological threat to planetary condition comes from the dramatization of the difference between Life and Nonlife (Povinelli, 2016: 44). "It may be that we could not anxiously reflect on the concept of the silent spring or the sixth extinction", writes Povinelli (2016: 174–75), "if we had not first been submerged in the biopolitical concept of population. [...] Here we find a tactic of power, or governance, or governmentality, you choose the word, [...] a tactic that also emerged with this science of species and populations in the eighteenth and nineteenth centuries. [...] Without species, without population, without Life and Nonlife, there is no extinction". It is not only that extinction is tied hand in glove with biopolitics: the very idea of extinction as we understand it today is biopolitical from the very start.

4. Towards an ecopolitics of extinction

Today, the concept of extinction remains firmly captured into a biopolitical framework of management and governance also because there is no real critical alternative to it yet. The previous section aimed at contributing to a critical work that is still at its beginnings. The other side of a critical reconceptualization of extinction must be the construction of a practical alternative, one that does not dismiss violent resistance (Crawford, 2022) but is also capable of imagining new paths into the age of extinction. It must be acknowledged that such constructive work is already well on its way (see e.g., Davies, 2015; Haraway, 2016). I shall now introduce a few more elements in this sense, trying to draw the conclusions of what I wrote so far. From this perspective, it should be possible to recover the Marxist intuition of extinction not as an endpoint but as an "inflection-point" (Büscher, 2021) while also producing new and specific critical instruments to engage with it.

One of the issues that has most frequently reemerged during our discussion is the issue of the subjectivity of extinction. It is a widespread temptation among neoliberal ideologues as well as environmentalist movements to place the 'human' in general at the center of the scene whether as a victim or as a perpetrator, thus fueling an exceptionalist anthropology that is directly contradicted by the more-than-human nature of the extinctive event. The sixth mass extinction is indeed the discovery of a deep and fragile entanglement of the human with its planetary otherness. This is not to claim that extinction is not linked to human action, but that this action, insofar as it is *political*, is not species-specific, or ontologically tied to the human as a species. The relevant distinction is not that between human and non-human species, but that between human groups that perpetrate the sixth extinction (oil corporations, indifferent policy-makers, climate deniers ...) and human and non-human groups that suffer it. As a wide body of literature has shown, the age of extinction is an age of nonequivalence (Gisinger, 2022) in which "the use of the 'we' becomes intolerable" (Demos, 2023: 99). Extinction is neither a mistake, a crime, nor an inevitable destiny (Cafaro, 2015), but an ontopolitical event related to earthly populations. Consequently, we should abandon once and for all every grand narrative grounded on the 'species', a notion that naturalizes abstract distinctions by hiding their historical and political status.

In fact, the survival of a species says nothing on the condition of populations. In extinction management as well as in moral ecocentrism, species have become an abstract sanctuary, a sort of last line of defense; but to save a species, a zoo is all it takes, whereas a population cannot be displaced and re-located, separated from its conditions and maintained *in vitro*. A species can be reduced to its last alienated specimens, even more, to its "evolutionary information" (Moeller, 1997: 175), completely severed from its forms of life. Populations can even be erased in order for the species to survive. And yet, there exists no such thing as a species: that of 'species' is a biological abstraction indicating phylogenetic uniformity (Persson, 2008, chapter 6.1), which of course can go beyond single populations bound to specific territories, but nonetheless should not be taken as the primary element of a living collective. There is an evident reason for this from the ecological viewpoint, that is the influence of the environment, which determines great variations between populations of the same species in contingent ways. From an ecopolitical viewpoint, it must also be established that what counts is the concreteness of the forms of life, which fundamentally includes the situated history of their development. As we have seen, the biopolitical discourse on extinction is ideologically speciesist, but populationist in reality. To oppose it, then, a counter-populationism must be developed once we got rid of speciesism once and for all. This does not mean to deny phylogenetic diverseness, but to avoid making it the ground of our worldview and instead assume a perspective based on mobile and historicized portions of territories inhabited by different populations.

This is not a shift that occurs entirely in the discursive realm. To ensure that extinction does not remain at the level of a textual phenomenon, we must acknowledge that it is a symbolically malleable yet *real* event facing human and

other-than-human populations together. This requires that the relationship between humans and their otherness, or their finitude, is put into question: in other words, it requires a realism that does not fall back on speculative nihilism. Speculative realism today conveys a passive understanding of reality, which – as I have argued in section 2 – leads to a misleading abstraction of the problem. An alternative position can be found in those contemporary ecopolitical positions which advocate for an active understanding of reality through acts of “worlding”. It is the case of Arturo Escobar’s proposal of a “pluriversal design”, which puts forward a different conception of design than biopolitical conservationism and eco-constructivism (Escobar, 2018). In fact, biopolitics too embraces an active understanding of reality as something that can and should be constantly redesigned (whether to be analyzed or synthetized), but it does so according to the values of economic abstraction and accumulation. In biopolitics, all active forces of worlding are canalized into an effort of governance, which is why a passive understanding of reality is thoroughly complementary to it: Life must fear Nonlife, their difference must be hold still (“to hold fast what is dead”, wrote Hegel, 1977: 19). This justifies the devices that govern the separation. Ecopolitical design, on the contrary, aspires to redistribute the potencies of worlding to their original holders: populations (or “*pueblos-territorio*”, Escobar, 2015: 349).

Pluriversal design is one particularly interesting declension of an ecopolitics of extinction, but it also reveals the ambiguous relationship between decolonial resistance and extinction. “I might get killed here but I am not leaving”, declares an activist from the community of La Toma in Colombia’s southwest quoted by Escobar (2015: 352). Decolonial resistance emerges precisely in the face of a threat of cancellation and biosocial collapse. The risk inherent to this defensive position is to become complementary to biopolitical governance as a result of the self-enclosure and passive resistance of existing ways of worlding. If it insists too much on the non-scalability of forms of life (Tsing, 2012; Tsing, 2021), ecopolitics risks becoming incapable of facing the omnivore biopolitics that appropriates communities in order to manage their life and death; and this because the breadth of biopolitical action is not primarily local, but unfolds at the global level of mega-technical infrastructures and macro-regions intoxication. The strategies of biocapitalism inform trans-scalar reductions and partitions that only at their end become effects on local communities. One of the main tasks, then, turns out to be inventing ways to produce an “onto-epistemic reorientation of technology” (Escobar, 2025). On the other hand, perspectives that postulate the necessity of re-composing a common world starting from the single worldings, like cosmopolitics (Stengers, 2005) and planetary thinking (Spivak, 2015), risk reintroducing some new kind of overarching rationality that serves the same function as the old universality, be it scientific (Stengers), parliamentary (Latour, 1999) or neo-rationalistic (Chakrabarty, 2023). It is a difficult bottleneck that will have to be crossed carefully in the near future. Extinction must be faced in many in-betweens, one hand in the great fabric of things and the other in the relations of power shaping the present.

Data availability

The data for this article consists of bibliographic references, which are included in the References section.

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Emiliano Guaraldo

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This piece is a philosophical intervention in the debate around the concept of extinction, especially in relation to current environmental and planetary crises. The author does an excellent job in summarizing the current debates and their origins in both scientific and humanities scholarship.

The essay builds its argument against the shortcomings of some of the current understandings of extinction and human political agency within the environmental humanities and philosophy. Against the fatalism of a naturalist position, and the abstraction of certain speculative realism, as well as the narrative-ethical orientation of extinction studies (which the author sees as politically insufficient).

the author calls for for a more openly political conceptualization of extinction (as extinction is a biopolitical device) based in biopolitical theory. this materializes in a proposal for an "ecopolitics of extinction" that shifts attention from species to populations, from universal narratives of the Anthropos to situated political subjectivities, and from passive or speculative engagement to active practices of "worlding." The author also warns of some of the limits encountered by pluriversal approaches (such as Arturo Escobar's).

The article is a valuable contribution that provides a well-organized critical map of current approaches and a productive reframing through biopolitical theory. Its greatest potential lies in potentially serving as a foundation for a more articulate political proposal that puts pluriversal politics in closer dialogue with planetary critiques of biocapitalist governance and thus bridging the gap the author identifies but, understandably at this stage, leaves open.

As a minor note, I would recommend the author consult Arturo Escobar's recent piece "Against Terricide: Envisioning paths towards pluriversal transitions"(2025), which attempts to address the tension between pluriversal politics and planetary-scale governance more directly than Designs for the Pluriverse, particularly through the concepts of "onto-epistemic slippages" and the pluriversalization of technology.

Is the work clearly and accurately presented and does it engage with the current literature?

Yes

Is the study design appropriate and does the work have academic merit?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

Are all the source data and materials underlying the results available?

No source data required

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: environmental humanities, visual culture, italian studies

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 03 May 2026

Gregorio Tenti

Thank you Emiliano! Indeed, the interview to Escobar clarifies some important points. I added it to the article.

Competing Interests: No competing interests were disclosed.

Reviewer Report 10 March 2026

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Ralf Gisinger 

1

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The author addresses a variety of important topics in critical theory, environmental humanities and philosophy – particularly regarding eco-/biopolitics – and provides an extraordinary and insightful contribution to the relatively new field of “extinction studies”.

The article succeeds in giving a broad overview of the existing literature on extinction, while simultaneously identifying gaps as well as problematic premises or implications of approaches dealing with extinction on a theoretical and political level. First, the text challenges and questions the ambiguous status of human(ity) in relation to nature itself. Humans are nature *and* (in the Anthropocene) act upon nature as a planetary force, yet must not be unified as an abstract, undifferentiated and universal category. This tension leads to the conclusion that extinction should be treated as a “more-than-human” phenomenon – in its symbolic as well as its material dimensions.

The text then presents examples from speculative realism and extinction studies as two different ways of dealing with extinction, identifying their respective shortcomings (metaphysical-speculative sublimation vs. narrative bio-existentialism). Both are limited in terms of their political viability, especially in today’s age of eco-capitalism between conservatism and constructivism. The author rightly proposes a politicisation of extinction studies through a Foucauldian framework of biopolitics that he expands to “ecopolitics” by showing the entanglement of neoliberal governance structures with not only ecomodernism, but also ecologically informed counter-positions. Thus, the contribution carves out a critical in-between stance – an “ecopolitics of extinction” – focusing on the concreteness of life-forms without idealising or romanticizing them. It does this by avoiding meta-narratives and undermining their constitutive categories like “species” or “humanity”, while also circumventing possible pitfalls of de-politicisation or aestheticism towards extinction. Due to the high number of different approaches presented by the author, some of the summaries of complex theoretical positions run the risk of becoming a bit schematic for the benefit of the proposed argument. For example, discussing Marxist perspectives – which for the author remain largely too constructivist, although they provide necessary historical and political methodology – he writes: “However shareable, such view [sic] remains still too tied to a dialectical vision of history if it is not complemented by more ad hoc instruments of reflection.” An example for an author working in the Marxist tradition, who tackles the issues that the author describes so succinctly would be Jason W. Moore.

I also agree with Reviewer 1 that the scientific background of the present situation on the brink of the sixth mass extinction could be critically examined and Reviewer 1 brings up very useful objections concerning the supposed scientific consensus. However, since the article deals primarily with the conceptual and political implications and framings of extinction, the argument in my opinion works regardless, even though some clarifications concerning the scientific basis could be beneficial. For example, the problems of a unified notion or theory of extinction are already outlined on page 4 in the text. If anything, the author’s own conclusion could be expanded at the end.

Regarding the conceptions and terminology of so-called “critical theory”, I can confirm that the usage and deployment in the text is absolutely on par with the highest standard of scholarship in these respective fields and I recommend the article without reservations.

Is the work clearly and accurately presented and does it engage with the current literature?

Yes

Is the study design appropriate and does the work have academic merit?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

Are all the source data and materials underlying the results available?

No source data required

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Philosophy, with specialisations in political philosophy, critical theory and philosophy of ecology.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 03 May 2026

Gregorio Tenti

Thank you Ralf! You are right, Moore is definitely worth mentioning. I added it to the text.

Competing Interests: No competing interests were disclosed.

Reviewer Report 06 February 2026

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The manuscript examines some of the issues raised by the concept of extinction, such as the

position of humankind as both its perpetrator and victim, the role of extinction management in contemporary civilization and ideas about *what is extinction* starting from its biological meaning and proceeding to its implications.

1. As a scientist who studies extinction, I should have much to say about this m.s. However, much of the paper seems to be written within a frame of "critical theory" and so relies on a framework with many assumptions and a syntax that is specific to this genre. There are many terms that are assumed without being defined here (biocapitalism, ontopolitical, biopolitical, ecopolitics...). For the general reader and specialists in other areas, it would help for some of these to be defined.
 2. The MS follows a number of assumptions that are made. At the very least, supply two or three relevant references for these statements.
 - "As scientists warn us that we are on the brink of a human-induced collapse of global ecosystems". This statement is only true in the mass media and it is not all scientists. Within the scientific literature, it is not known if ecosystems (subject to deterioration) actually collapse or where the critical threshold of collapse lies.
 - "Today, there is significant consensus among the scientific community on the fact that we are on the brink or at the beginning of a new mass extinction (the sixth)". There is not significant consensus, though there are some who say this. A big episode of extinction yes, but nothing on the scale of the 5 great mass extinctions. The problem is that the five mass extinctions involve changes over millions of years and losses of over 50% of species, whereas we are dealing with losses of less than 1% over hundreds of years of year.
 1. "Time regains a sort of arcane power of destruction (as in the famous words of Krishna in the Bhagavad Gita, 'I have become time, the destroyer of worlds')". Please give chapter and verse in the Gita. Most readers are only familiar with Oppenheimer's version of it ("I am become death...")
 2. "Brassier exemplarily argues that extinction is a 'transcendental trauma'". What does this mean here? The phenomenon of extinction as an existential threat is live also in many chapters of the Judeo-Christian scriptures. For example, "Then the carcasses of this people will become food for the birds and the wild animals, and there will be no one to frighten them away. I will bring an end to the sounds of joy and gladness and to the voices of bride and bridegroom in the towns of Judah and the streets of Jerusalem, for the land will become desolate". (Jeremiah 7:33-34). The author should explain if he is referring to a new phenomenon.
 3. "It is not only that extinction is tied hand in glove with biopolitics: the very idea of extinction as we understand it today is biopolitical from the very start". Is extinction the same as annihilation? Considering the threat in the West's scriptures above, this needs proving. It could be argued that extinction has always been an issue for people in the West.
- "The relevant distinction is not that between human and non-human species, but that between human groups that perpetrate the sixth extinction (oil corporations, indifferent policy-makers, climate deniers...) and human and non-human groups that suffer it". This needs support, since it might be argued that all who participate in the system are perpetrators of extinction

Is the work clearly and accurately presented and does it engage with the current literature?

Partly

Is the study design appropriate and does the work have academic merit?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

Are all the source data and materials underlying the results available?

No source data required

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are the conclusions drawn adequately supported by the results?

No

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Environmental scientist working on Extinction

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 06 Feb 2026

Gregorio Tenti

I sincerely thank the reviewer for his time and attention. The expertise of an environmental scientist is invaluable in relation to subjects such as extinction. I will treasure his remarks and integrate the next version of the article in light of his suggestions, especially those regarding the epistemic status of the sixth mass extinction. I believe that the reviewer's first comment regarding the fact that my article is written "in a frame of 'critical theory'" and therefore relies on a genre-specific syntax and terminology encapsulates the sense of his next observations. I never intended this paper for a general readership or even for specialists in other areas, which would have prevented me from making advances that I consider relevant in this very specific field. Consequently, it is normal that a non-specialist finds many terms, references and passages obscure, and even believes that the paper's conclusions are not adequately supported by the results. I for once would not be able to review an article in environmental science without clarifications and to judge on its being conclusive or not. That said, confronting with a scholar from hard sciences is always productive and necessary.

Competing Interests: No competing interests were disclosed.