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SIMULATING THE APOCALYPSE:
TOWARDS A GENEALOGY
OF ECOPOLITICAL GOVERNAMENTALITY

Abstract

Founded in 1968, the Club of Rome sought to address the «world problematique» – a complex set of global political, economic, and ecological crises – through long-term planning and risk management. Its 1972 report *The Limits to Growth*, developed at MIT, warned that unchecked resource consumption would lead to the collapse of economic and demographic growth within decades. Widely influential, the report helped shape ecological transition policies for the next fifty years.

This paper examines the report as an early instance of what Frédéric Neyrat terms the «biopolitics of catastrophe»: the ecological turn in biopolitical governance via cybernetic and predictive models. It also considers the radical critique offered by Giorgio Cesarano in 1973, who interpreted the report not as a warning for humanity, but as the ideological endpoint of capital itself. For Cesarano, *The Limits to Growth* unwittingly confirmed Marx’s insight: capital, driven by its logic of boundless self-valorization, inevitably encounters the ecological limits of its own reproduction.

Keywords: Apocalypse, Biopolitics, Ecopolitics, Giorgio Cesarano, Revolution, *The Limits to Growth*

Effective planetary stewardship must be achieved quickly, as the momentum of the Anthropocene threatens to tip the complex Earth System out of the cyclic glacial-interglacial pattern during which *Homo sapiens* has evolved and developed. Without such stewardship, the Anthropocene threatens to become for humanity a one-way trip to an uncertain future in a new, but very different, state of the Earth System.

(W. Steffen, Å. Persson, *et alii*, *The Anthropocene: From Global Change to Planetary Stewardship*)¹

In its state-run and regulated form, the ‘fight against pollution’ is bound, at first, to mean no more than new specializations, ministries, jobs for the boys and promotions within the bureaucracy.

(G. Debord, *A Sick Planet*)²

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1 W. Steffen, Å. Persson, L. Deutsch, *et alii*, *The Anthropocene: From Global Change to Planetary Stewardship*, in «Ambio», 40, n. 7, 2011, pp. 739-761.

2 G. Debord, *A Sick Planet*, translated by D. Nicholson-Smith, Seagull Books, Kolkata 2008, p. 90.

The great danger would be to replace the myth of the working classes as the bearers of future values with that of environmental protection and safeguarding the biosphere, which could just as easily take on an entirely totalizing, totalitarian character. [...] Industry would love nothing more than to harness the ecology movement in the same way it harnessed the trade union movement to structure its own society. [...] Therefore, in my opinion, the ecological movement should first worry about its own social and mental ecology.

(F. Guattari, *Chimères* n. 28)³

1. In a recent essay, Frédéric Neyrat attempted a decisive recoding of biopolitical discourse from an ecological perspective, framing the concept of a «biopolitics of catastrophe». The core of his proposal lies in the integration of Foucault's variations on biopolitics – from the final pages of *La volonté de savoir* to the lectures delivered at the *Collège de France* between 1976 and 1979 – with the sociological hypothesis Ulrich Beck called the «risk society»: the idea that, since the postwar period, emergencies and catastrophes of all kinds (social, institutional, environmental, geopolitical, etc.) have moved from the periphery to the center of Western sociopolitical perception – and thus of the apparatus of government. It is in this sense that Neyrat writes:

[...] a biopolitics of catastrophe does not use the precautionary principle to protect environments or populations in advance but to protect itself. [...] the biopolitics of catastrophe has two modes: an averting mode, through which events are averted in advance, and a regulating one, whose function is to erase the event after the fact.⁴

The central function of this biopolitics of catastrophe – a «time-oriented biopolitics, which is fueled by anticipations and a constant flow of information», and above all self-referential, aimed to 'protect' the apparatuses of prevention and emergency management – would thus be «changing everything in order to change nothing»⁵.

According to Neyrat, Foucault linked the genesis of biopolitical power and of the subject it constitutes – the population – to a weakening of the hold that death exerts over life. Only when death ceases to afflict life «from the outside» – through famines, epidemics, natural disasters, etc. – can life be taken up by politics as an object of care and management, through the use of specific power technologies. However, in the age of the Anthropocene, the daily proliferation of risks and catastrophes would bring about new

3 F. Guattari, *Chimères*, n. 28, 1991-1992, cit. in M. Dobruška, *How it all Began: The Strasbourg The- ses*, translated by Ill Will, <https://illwill.com/how-it-all-began> (last access 30-9-2025).

4 F. Neyrat, *The Biopolitics of Catastrophe, or How to Avert the Past and Regulate the Future*, in «The South Atlantic Quarterly», 115, n. 2, 2016, p. 249.

5 *Ibidem*.

forms of exposure of life to death, thereby rendering the forecasting and prevention of disasters structural components of the art of government⁶.

Foucauldian discourse on biopolitics would therefore require a revision that extends its scope to the ecological dimension and, in parallel, to an essentially apocalyptic temporal dimension: biopower – the apparatus that produces society by defending it, and defends it by producing it – would here coincide with a chrono-power centered on the defense and production of the future. In this framework, life can no longer be thought independently of its ecological context, nor exempted from the anticipatory projection of catastrophe. One could thus speak of a new rationality of government – an apocalyptic governmentality – whose central task would consist in *the administration of the catastrophe*.

Without further examining Neyrat's approach to the problem, let us move directly to the questions that concern us. How has biopolitical discourse been effectively extended to include the ecological question? And conversely, how has ecological discourse come to provide the basis for a recoding of the biopolitical framework – and specifically, how has it been absorbed into the logic of neoliberal governmentality? What notion of «life» can a biopower now recoded as ecopower refer to? And in this shift, what happens to the modern political conception of life as the central stake of politics?

In this sense, the ecological transition policies began in Europe and the United States in the 1980s should be understood primarily as a recoding internal to the biopolitical code. As Neyrat himself emphasizes, the «ecopolitical turn» of biopower would be unthinkable without the parallel computational turn in techniques of risk forecasting and prevention. As Matteo Pasquinelli recently stated, «the political perception of the Anthropocene itself is possible only thanks to an (apparently neutral) global network of sensors, data centers, supercomputers and science institutions»⁷.

My hypothesis takes the form of a genealogical inquiry: the point of emergence of this dual process – ecologization and digitalization of the biopolitical apparatus – should be situated in the early 1970s and finds its paradigmatic expression in the report commissioned by the Club of Rome to the MIT.

On the other hand, as Foucault writes in his reading of Nietzsche, the origin or emergence (*Herkunft*) of a phenomenon «always arises in a particular state of forces» and is, in this sense, «a place of confrontation»; a site of origin only insofar as it is, at the same time, a «non-place», a pure distance, which simply indicates «that adversaries do not belong to a common space»⁸. Any genealogy of ecopolitics must therefore not limit itself to shedding light on the discourse that emerged victorious from the battle of knowl-

6 For a genealogical analysis of the idea of crisis as a horizon, rather than an obstacle, of neoliberal governmentality, cfr. D. Gentili, *The Age of Precarity: Endless Crisis As an Art of Government*, translated by S. Porcelli, Verso, London 2021.

7 M. Pasquinelli, *The Eye of the Algorithm: Cognitive Anthropocene and the Making of the World Brain*, in «Fall semester», 2014, <https://fallsemester.org/2014> (last access 30-9-2025).

8 M. Foucault, *Nietzsche, Genealogy, History*, in Id., *Language, Counter-Memory, Practice: Selected Essays and Interviews*, translated by D.F. Bouchard, S. Simon, Cornell University Press, New York 1977, p. 150.

edge-powers, but must aim above all to make the «buried» and «subjugated» knowledge – overwritten by the hegemonic discourse – «rise up»⁹.

2. Before turning to the MIT report, it is important to bring to light a second aspect of the biopolitical discourse that remains in the shadow of Foucault's account: the question of capitalist valorization, understood as a central apparatus within the arsenal of neoliberal governmentality. Jason W. Moore has the undisputed merit of having recoded the discourse on the Anthropocene in explicitly political terms, displacing it from the terrain of climatology to that of political economy – while at the same time letting the former retroact on the latter.

In Moore's model of the Capitalocene, «the degradation of nature» is nothing but «the specific expression of labor organization»¹⁰. Such a statement, however, only makes sense if the Marxian theory of value is simultaneously reformulated in the terms of a general economy, where labor appears as a «multi-species geo-ecological process», and capital valorization comes to invest the life of the human animal itself and, ultimately, the biosphere as a whole. In the «'Age of Capital'-in-nature»¹¹ political economy can no longer be criticized as a separate sector of human activity; it must address the strategies for organizing the living in every sense. In other words, the critique of political economy must take the form of a critique of political ecology capable of breaking through every form of isolation: first and foremost, the dialectical isolation of «nature» or the «environment» as separate spheres of living life. There is, to paraphrase Georges Bataille,¹² no such thing as a *restricted* political ecology – there is only a *general* political ecology. And the core of its critique lies in the biopolitical and ecopolitical recoding of the theory of value.

It is worth noting that Moore's framework finds a striking point of convergence with Maurizio Lazzarato's redefinition of Foucault's approach to neoliberal governmentality and biopower. Lazzarato has repeatedly emphasized how Foucault's framework – from biopolitics to governmentality, from the notion of human capital to the theory of diffuse and horizontal power – contributed to eclipsing the resurgence of central dynamics in contemporary capitalism. These would include, in particular, «processes of capitalist centralization, of transcendent unification and global consolidation»¹³,

9 Cfr. Id., *Society Must Be Defended: Lectures at the Collège de France, 1975-1976*, translated by D. Macey, Picador, London 2003, pp. 7-10.

10 J.W. Moore, *Verso una politica radicale dell'energia-lavoro*, in Id. *Antropocene o Capitalocene? Scenari di ecologia-mondo nell'era della crisi planetaria*, edited by A. Barbero, E. Leonardi, Ombre Corte, Verona 2017, p. 186. The conclusion of Moore's book, from which I am quoting, was written specifically for the Italian edition. Where not otherwise indicated, all English translations of Italian texts are mine.

11 Id., *The Capitalocene, Part II: Abstract Social Nature and the Limits to Capital*, 2014; https://www.researchgate.net/publication/264457281_The_Capitalocene_Part_II_Abstract_Social_Nature_and_the_Limits_to_Capital (last access 30-9-2025).

12 Cfr. G. Bataille, *The Accursed Share: An Essay on General Economy*, translated by R. Hurley, Zone Books, New York 1988, vol. I, p. 19.

13 M. Lazzarato, *The Impasses of Western Critical Thought*, translated by Ill Will, <https://illwill.com/impasses> (last access 30-9-2025).

vertical and monopolistic mechanisms of valorization, as well as authoritarian and repressive technologies of power. In this sense, the biopolitical paradigm has cast into shadow not only the founding categories of Marx's critique of political economy, but also those of politics proper: capital and valorization, class struggle and war, monopoly and revolution. Today, in the age of catastrophic biopolitics and capital's apocalyptic ecopolitics, it is precisely these categories that are resurfacing with renewed theoretical and political urgency.

Upon closer inspection, the capitalist restructuring around interest-bearing capital in the second half of the 1970s, which is at the core of Lazzarato's analysis, appears as the reverse side of the «reproduction crisis» of capital which, according to André Gorz, should be located around the oil crisis of 1973. For Gorz, the oil crisis «did not cause the economic recession; it merely revealed and aggravated the recessionary tendencies which had been brewing for several years. Above all, the oil crisis revealed the fact that capitalist development had created absolute scarcities: in trying to overcome the economic obstacles to growth, capitalist development had given rise to physical obstacles»¹⁴.

It is in this conjuncture that climate change would emerge as the central political issue. From the 1970s onward, capitalism would shift from a regime of producing «relative scarcities» – in which accelerating circulation, and thus product obsolescence, served to bypass the falling rate of profit and the growing weight of dead labor over living labor in conditions of overproduction – to what we might call a regime of *management of absolute scarcities*, that is, of non-reproducible goods. Once capital collides with the natural limits of its own development, and with the impossibility of reabsorbing environmental costs into the valorization cycle, a shift occurs in mercantile rationality: the Anthropocene becomes the horizon of a form of governmentality structurally grounded in the green economy – understood as a dispositif for valorizing nature and biopolitically managing misery¹⁵.

But there is a second point of convergence between the framework of political ecology and Lazzarato's analysis of the economy of debt: what we might call, paraphrasing Bateson and Guattari, an ecology of subjectivity¹⁶. In a 2011 article, Paul Crutzen – the Nobel-winning chemist who a decade earlier had popularized the climatological-geological hypothesis of the Anthropocene – offered a striking prognosis: «humanity» itself, as an undifferentiated subject, both protagonist and culprit of the advent of this new geological era, must now shoulder unprecedented responsibility that comes with its technological power, and become the «steward of the Earth»¹⁷. In the face of such a prognosis,

14 A. Gorz, *Ecology as Freedom*, in Id. *Ecology as Politics*, translated by P. Vigderman, J. Cloud, South End Press, Boston 1978, p. 24.

15 Cfr. E. Leonardi, M. Benegiamo, *André Gorz's Labour-Based Political Ecology and Its Legacy for the Twenty-First Century*, in N. Räthzel et alii (eds.), *The Palgrave Handbook of Environmental Labour Studies*, Palgrave Macmillan, London 2021, pp. 721-741.

16 Cfr. F. Guattari, *The Three Ecologies*, translated by I. Pindar, P. Sutton, The Athlone Press, London 2000, p. 15.

17 P.J. Crutzen, C. Schwägerl, *Living in the Anthropocene: Toward a New Global Ethos*, in «Yale En-

it seems legitimate to ask, along with radical thinker Josep Rafanell i Orra, «whether this grand narrative of catastrophe does not aim, once again, to revive the idea of an original sin and of a Humanity that becomes ‘one’ precisely through its guilt, ignorant of Nature and now objectified by the ecological management of disaster»¹⁸.

The depoliticized model of the Anthropocene, by reactivating anthropocentric mechanisms of blame, would then function as a paradoxical political dispositif for reconstituting a post-political subject: generic Humanity or, as Marx would say, abstract Man.¹⁹ Just as Lazzarato’s subjective economy of debt revolves around the production of indebted subjectivities,²⁰ the subjective ecology of the Anthropocene would revolve around the production of guilty subjectivities – thus reproducing, within the microcosm of subjectivity, the same capitalist mechanism of inoculating and managing lack denounced by Gorz²¹.

3. Let us now go back to our genealogical hypothesis. The fundamental outlines of the Green New Deal – a term coined in 2007, in the wake of the subprime crisis, intentionally echoing the economic policies launched by Roosevelt in response to the 1929 Wall Street Crash – can be readily discerned in the foundational program of the Club of Rome. This non-governmental think tank, founded in 1968, brings together heads of state, United Nations officials, technocrats, diplomats, ecologists, economists, futurologists, and cyberneticists from a transnational, interdisciplinary perspective. Its agenda, explicitly characterized as «apolitical» («it has absolutely no political ambition»), according to former Club president Díez-Hochleitner²², involves the development of conceptual and operational tools to tackle what a 1991 publication, significantly titled *The First Global Revolution*, calls «the world problematique»: the heterogeneous and interconnected set of «political, economic, cultural, psychological, technological and environmental» issues that collectively weigh on humanity’s future in a systemic way²³.

vironment 360», 2011, https://e360.yale.edu/features/living_in_the_anthropocene_toward_a_new_global_ethos: «Rather than representing yet another sign of human hubris, this name change would stress the enormity of humanity’s responsibility as stewards of the Earth» (last access 30-9-2025).

18 J. Rafanell i Orra, *Frammenter le monde*, Éditions Divergances, Paris 2018. Archivio Anomia edited the Italian translation of the excerpt «Frammentare il mondo. Destituire la metropoli» from which I am quoting; <https://archivioanomia.it/frammentare-il-mondo/> (last access 30-9-2025).

19 Cfr. K. Marx, *Capital: A Critique of Political Economy, Volume I*, translated by B. Fowkes, Penguin Classics, London-New York 1976, p. 75.

20 M. Lazzarato, *The Making of the Indebted Man: An Essay on the Neoliberal Condition*, translated by J.D. Jordan, Semiotext(e), South Pasadena 2012, p. 42.

21 For the problem of the inoculation of lack in the social field under the capitalist mode of production, the reference is G. Deleuze, F. Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, translated by R. Hurley et alii, Continuum (University of Minnesota Press), London-New York 2004, p. 266. On the concept of an ‘economy of abundance,’ which forms the background to Deleuze and Guattari’s elaborations, see M. Sahlins, *Notes on the Original Affluent Society*, in R.B. Lee, I. DeVore (eds.), *Man the Hunter*, Aldine, Chicago 1968, pp. 85-89.

22 A. King, B. Schneider, *The First Global Revolution, a report from The Club of Rome*, Pantheon Books, New York 1991, p. X.

23 *Ibidem*. The 1991 publication draws on the conceptual framework of the Meadows’ report *The Limits to Growth*, to which the following section of this article is dedicated.

What is at stake here is the articulation of a plural, long-term, planetary-scale strategy for managing the emergencies and crises proliferating in the «global world». Interestingly, as the former Club president noted, this strategy did not aim so much at solving the «world problematique» as at formulating what the think tank called «the world resolutique»: a strategic conception steeped in complexity theory that, presupposing the impossibility of a comprehensive ecological solution, would instead aim at purely tactical interventions. As the former president wrote in 1993: «By the resolutique, we do not suggest a grand attack on the totality of the problematique in all its diversity. This would be impossible. Our proposal is rather a simultaneous attack on its main elements with, in every case, careful consideration of reciprocal impact from each of the others»²⁴. Within the Club of Rome's program, what is being developed here is precisely what, following Neyrat, we have called a «biopolitics of catastrophe»: a set of governance strategies aimed at managing a regime of «polycrisis», borrowing Edgar Morin's term from the 1990s²⁵.

A few months before the United Nations Conference on the Human Environment, held in Stockholm from June 6-15, 1972 – and now considered the birth of global environmentalism and the founding act of the United Nations Environment Programme (UNEP)²⁶ – the Club of Rome published the influential *The Limits to Growth*. Commissioned from MIT under the leadership of computer scientist and management theorist Jay Wright Forrester, today recognized as the founder of systems dynamics, the report was translated into 30 languages and sold 30 million copies. It has remained a constant reference point for ecological transition strategies, regularly updated in subsequent decades (the latest report by the original authors, titled *Limits and Beyond*, was released in 2022).

The Limits to Growth can be considered a crucial genealogical conjuncture in the development of ecological knowledge-powers for at least two reasons. First, from an epistemic and operational standpoint: its influence on transnational approaches to the «global problematique» is well documented – UNEP's agenda, for instance, reflects in many respects the style of ecological emergency conceptualization and management anticipated by the report²⁷. Second, methodologically: it was among the first studies to systematically employ a computer simulation model to develop global risk forecasting and prevention strategies²⁸.

By analyzing long-term interactions and feedback loops among five variables – «accelerating industrialization, rapid population growth, widespread malnutrition, deple-

24 Ivi, p. XI.

25 Cfr. E. Morin, *Homeland Earth: A Manifesto for the New Millennium*, translated by S. Kelly, R. Laing, Hampton Press, Cresskill 1999, p. 74.

26 Cfr. S. Lorenzini, *Barbara Ward and the Transformative Power of the Stockholm Conference at the Birth of Sustainable Development*, in «Annali della Fondazione Luigi Einaudi», LVI, n. 2, 2022, pp. 91-108.

27 M. Meyer, A. Best, *50 years 'Limits to Growth' – where are we now, where should we go?*, Ecologic Institute, European Resource Forum, 2022, pp. 1-12, <https://www.ecologic.eu/sites/default/files/publication/2023/50100-erf-50-years.pdf> (last access 30-9-2025).

28 J.S. Nørgård *et alii*, *The History of The Limits to Growth*, in «Donella Meadows Archive», 2010, <https://donellameadows.org/archives/the-history-of-the-limits-to-growth/> (last access 30-9-2025).

tion of nonrenewable resources, and a deteriorating environment»²⁹ – and by highlighting thresholds of collapse and nonlinearity within the world-system, the World3 model deployed, for the first time, the epistemic and technical devices necessary to realize a systemic abstraction of the world within a closed model. Based on the epistemic and methodological shift inaugurated by the systematic use of World3 model, the MIT report was able to encompass a world decoded into its variables and recoded as a system, in its full spatial – and crucially, *temporal* – extension. *The Limits to Growth* predicted that exponential resource consumption would lead, within a few decades, to an irreversible halt in economic, industrial, and demographic growth on a planetary scale – hence the urgency of a radical reformulation of economic policies to address the risk of systemic ecological crisis and to develop transition strategies toward a state of «global equilibrium».

On the one hand, the distinctly apocalyptic and managerial framework of the MIT report anticipates, in its essential features, the Anthropocene hypothesis; on the other, it resonates with the conception of biopolitics outlined in the *Cahiers de la biopolitique*, edited by André Birre³⁰, as a form of operational knowledge oriented toward the limitation of human praxis.

Within this framework, the reconfiguration of the relationship between humanity, life, and nature emerges as a necessary precondition for an «elevation of the human» that coincides with a «restoration of order»³¹. Biopolitics, in the sense proposed by the *Cahiers*, thus presents itself as an epistemic dispositif aimed at the elaboration of knowledges and techniques capable of containing and regulating human action – re-enrolling it within the limits dictated by the «laws of life». In light of Gorz's aforementioned ecopolitical hypothesis – that capital would overcome its reproduction crisis by taking on the management of that crisis itself, administering resources under a regime of absolute scarcity – the biopolitical program fully converges with the green-economy agenda.

4. Let us now turn to the dark side of what, according to our hypothesis, must be considered a crucial juncture in the *Herkunft* of ecopolitics – what, following Walter Benjamin, we may call «the tradition of the vanquished»³².

In the year following the publication of the MIT report, the poet, militant, and theorist of radical communism Giorgio Cesarano (1928-75) would publish, together with Gianni Collu, *Apocalypse and Revolution*, a «circumstantial writing» which recognized in the MIT report not the swan song of humanity, but that of capital itself: the distorted realization of Marx's prognosis, according to which capital, driven by the tendency toward the

29 D.H. Meadows, D.L. Meadows, J. Randers, W. W. Behrens III, *The Limits to Growth*, Potomac Associates Books, New York 1972, p. 21.

30 A. Birre (ed.), *Cahiers de la biopolitique*, 1, published by Organisation du Service de la Vie, Paris 1968.

31 Cfr. Tiqqun, *This is Not a Program*, translated by J.D. Jordan, Semiotext(e), Los Angeles 2011, pp. 41-42; and S. Chignola, *2000 d.c. Biopotere e biopolitica: sulle tracce della discussione*, in «Euro-nomade», 2016, <https://www.euronomade.info/2000-d-c-biopotere-biopolitica-sulle-tracce-della-discussione/> (last access 30-9-2025).

32 W. Benjamin, *On the Concept of History*, translated by H. Zohn, in Id., *Selected Writings, Vol. 4, 1938-1940*, edited by H. Eiland, M.W. Jennings, Harvard University Press, Cambridge 2003, p. 389.

expansion and generalization of the self-valorization process, would inevitably collide with the very limits of its own development.

«The final map of the conquered planet», write Cesarano and Collu referring to the World3 system simulated in *Limits to Growth*, «has provided [capital] with the diagram of its imminent end. From the terminals of computers, the sums of its history flow into the system's brain: the accounts balance, but they are Marx's accounts»³³.

At the core of Cesarano's critical inquiry lies precisely the use of the notion of limit in the MIT report – a notion which, as we have seen, plays an essential role in the elaboration of an art of government both in the ecopolitical and in the biopolitical programme:

The final period we are now experiencing is the moment in which, having completed the teleological colonization of both the thermodynamic system and the 'human system', having filled every possible remaining space [...] in the direction of productive development expressed in exponential terms, capital collides with its own insurmountable limits, finding itself deprived of any further dimension of transcendence toward higher levels of organization. At this point, [...] a reversal of tendency imposes itself: the transition [...] from a mode of development expressible in terms of exponential growth to a mode of equilibrium with zero growth.³⁴

What is at stake, in the MIT report, is for Cesarano nothing less than the transition to what Guy Debord, two years earlier in his well-known pamphlet *A Sick Planet*, had called «the realization of *political economy*»: namely, the extension of its dominion on a planetary scale and over the *longue durée* of geological eras, as well as its deepening into the microphysical and molecular dimensions of living life. The society of «overdeveloped economy», Debord wrote in 1971, «turns everything – even spring water and city air – into *economic goods*, which is to say that everything has become *economic ill* [...]. The rate of production of non-life has risen continually on its linear and cumulative course; a final threshold having just been passed in this progression, what is now produced, directly, is *death*»³⁵.

For Cesarano and Debord alike, the final threshold of valorization lies precisely in the elaboration of something like an *ecopolitics of the limit*. What is at stake for capital is, to borrow the conceptual pair that Marx takes from Kant, the infinite reconversion of the *Grenze* of the capitalist system – the developmental limit of the mode of production – into a *Schranke*, a barrier whose overcoming would enable, time and again, the

33 G. Cesarano, G. Collu, *Apocalisse e rivoluzione*, Dedalo, Bari 1973, p. 67 (all quotations from Cesarano's works have been translated by myself). For an effective historical, political, and theoretical framing of Cesarano's thought, of radical communism in Italy, and the political experience of Ludd, see Francesco 'Kukki' Santini, *Apocalypse and Survival*, translated by Ill Will, <https://illwill.com/print/apocalypse-and-survival> (last access 30-9-2025).

34 G. Cesarano, G. Collu, *Apocalisse e rivoluzione*, cit., p. 15.

35 G. Debord, *A Sick Planet*, cit., pp. 84-85. For a post-situationist approach to what we called «general ecology», see J. Cray, *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World*, Verso Books, London 2022.

restructuring of the capitalist apparatus³⁶. By recoding the historically and materially determined limit of the mode of production as a natural-absolute limit, capital inaugurates a new phase of reconfiguration for the apparatuses of valorization and domination.

Whereas the formal subsumption of capital remained confined to the sphere of political economy (for instance, by espousing a ‘restricted’ and anthropocentric conception of production, which could thus appear primarily in the form of ‘generically human labor’), in the phase of real subsumption the process unfolds that Cesarano – drawing on Jacques Camatte – calls the «anthropomorphosis of capital»: the real subsumption of life and the biosphere into the process of self-valorization³⁷.

In this perspective, it is worth noting that, according to the *Working Group on the Anthropocene*, the so-called golden spike – the chronostratigraphic marker identifying the starting point of the Anthropocene as a geological epoch – should be placed around the time of the Second World War, in the era of the «Great Acceleration»³⁸: at the point of convergence between the beginning of the atomic age and the global expansion of energy dependence on coal and oil.

In an apparently surprising way, this periodization coincides with the one proposed by Camatte – and taken up by Cesarano and Collu – to mark capital’s entry into the phase of real domination. In fact, for Camatte – who here closely echoes Foucault’s analyses of the biopolitical turn in Europe during the 1930s – Nazism and Fascism, with their State-non-State apparatuses³⁹, would have functioned as operators of the paradoxical recomposition of the subject required for capital’s access to the government of bodies and souls. That is, to what we might call the production of a territoriality capable of embracing and stabilizing the entire series of capitalist deterritorializations⁴⁰: the *Volksgemeinschaft*, understood as a rooting within the very movement of capitalist uprooting, which would find its consummation in the postwar forms of European social democracy⁴¹.

36 Cfr. K. Marx, *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)*, translated by M. Nicolaus, Penguin Books/New Left Review, London 1973, pp. 397-400.

37 J. Camatte, *Glossaire*, in «Invariance», n. 2, updated to 09/2022, https://www.ilcovile.it/Print_Camate_fr_glossaire.pdf (last access 30-9-2025).

38 C. Schwägerl, *A Golden Spike Would Mark the Earth’s Next Epoch: But Where?*, in «Yale Environment 360», 2023, <https://e360.yale.edu/features/anthropocene-site-competition-golden-spike> (last access 30-9-2025).

39 I borrow the expression from the excellent book by A. Toscano, *Late Fascism: Race, Capitalism and the Politics of Crisis*, Verso, London 2023, p. 155.

40 The categorical pair territorialization/deterritorialization is borrowed from Deleuze and Guattari, who employ it extensively throughout virtually all of their co-authored works.

41 Cfr. J. Camatte, *L’eco del tempo*, in Id., *Comunità e divenire. Prima parte*, Il Covile, 2020, p. 71, https://www.ilcovile.it/V3_camatte_all_per_Scaricabili.html#it (last access 30-9-2025). For the thesis on European fascism as the vanguard of social democracy and, therefore, the material community of capital, see Id., *Capital and Community: The Results of the Immediate Process of Production and the Economic Work of Marx*, translated by D. Brown, Unpopular Books, London 1988, p. 109, <https://www.marxists.org/archive/camate/capcom/camate-capcom.pdf> (last access 30-9-2025). For a general overview of Camatte’s theoretical work, with particular reference to the first phase of his thought (which ended in 1970, the year of Bordiga’s death), see M. Garau, *Lo scisma da un mondo che muore. Jacques Camatte e la rivoluzione*, DeriveApprodi, Bologna 2024.

What is at stake, in the phase of capital's real domination, is thus the total recomposition – on the abstract plane of value – of all that capital had previously fragmented in the human animal into the binary forms of production and circulation, labor time and leisure time, abstract labor and sensory activity, economy and politics, private and public – and, it must be added, human life and non-human lives.

5. According to Cesarano, it is in its global projection that the ecological crisis erupts into the terrain of biopolitics. The epistemological turning point inaugurated by the MIT report is, in this sense, also an eminently political turning point: with the shift from restricted economy and ecology to general economy and ecology, borrowing Debord's words, «our environment has become a social issue, and that the management of everything has become directly political, [...] – in such circumstances, it is obvious that the old specialized politics must perforce declare itself utterly bankrupt»⁴².

It is in this sense that Cesarano outlines the radical alternative: *apocalypse or revolution* – a technopolitical management of catastrophe through the perpetual recoding of developmental limits, or the direct politicization of a living life no longer anthropomorphizable and, consequently, the redemption of life from its isolation on the separate plane of value, administration, and representation.

At the bifurcation point between the ecopolitical administration of catastrophe and the dimension of immediate coincidence between life and politics that Cesarano calls «biological revolution»⁴³, lies the notion of *species*. As Chakrabarty writes, «climate change is an unintended consequence of human actions and shows, only through scientific analysis, the effects of our actions as a species. Species may indeed be the name of a placeholder for an emergent, new universal history of humans that flashes up in the moment of the danger that is climate change. [...]. It is [...] like a universal that arises from a shared sense of a catastrophe»⁴⁴.

Chakrabarty's remarkable formulation reconnects here, in its general outlines, to the Foucauldian idea of a «bio-history», the epistemic framework from which it would be possible to appreciate the biopolitical turn of the West. In this perspective, it is interesting to note how Foucault's initial delimitation of the terrain of biopolitics revolves precisely around the notion of species: with the diminishing imminence of death and catastrophe, «Western man was gradually learning what it meant to be a living species in a living world [...]. For the first time in history, no doubt, biological existence was reflected in political existence [...]»⁴⁵.

42 Guy Debord, *A Sick Planet*, cit., p. 87.

43 See, for instance, G. Cesarano, G. Collu, *Apocalisse e rivoluzione*, cit., p. 87. On the concept of biological revolution in Cesarano's work, see also O. Wisyam, *Giorgio Cesarano e la critica capitale*, Il Covile, 2019, https://www.ilcovile.it/raccolte/A5_Giorgio_Cesarano_critica_capitale.pdf (last access 30-9-2025).

44 D. Chakrabarty, *The Climate of History: Four Theses*, in «Critical Inquiry», 35, n. 2, 2009, pp. 221-222.

45 M. Foucault, *The History of Sexuality, Vol. 1: An Introduction*, translated by R. Hurley, Pantheon Books, New York 1978, p. 143. For an introduction to the biopolitical turn from Foucauldian variations around the concept, see T. Campbell, A. Sitze, *Introduction*, in Id. (eds.), *Biopolitics: A Reader*, Duke University Press, Durham 2013, pp. 1-40.

It is thus in the space of the historical and political emergence of the species that the paths of ecopolitical capital and biological revolution intersect. It is primarily from the standpoint of subjective ecology that the gap between their respective epistemico-political strategies can be assessed.

In the discourse of capital – whose fundamental outlines are already visible in the 1972 MIT report – the species appears in the double guise of «problematique» and «resolutive»: as the object of a power that regulates life on the basis of a cybernetic simulation of the limits of the world-system, and as the subject of that power's exercise. Thirty years later, this very perspective would reemerge in Crutzen's above-mentioned formulation: the human species would be presented as the subject of the Anthropocene, a subject guilty of ecological catastrophe and, precisely for that reason, responsible for the world-system and thus charged with its management.

Retroacting on subjective ecology, the program of ecopolitics reterritorializes the species – through the dual device of imputation and delegation – onto the old code of the acting subject. It is in this way that, according to Cesarano, capital prepares the ground for the turn toward what he calls the «neo-Christian civilization» of Famine⁴⁶: with the exhaustion of material resources and the completion of globalization, capital displaces valorization onto the immaterial plane, recentering it on credit and thus on the apocalyptic imminence of repayment. As Cesarano writes elsewhere, «dominant capital is fictitious capital: its dominion is the power of dilatory emptiness over every form of human existence, chained to it by the compulsion to hope to collect, 'tomorrow', the meaning and fullness promised in exchange for the total performance of his 'life'»⁴⁷.

At the opposite pole, the discourse of biological revolution aims at something like a total deterritorialization of the species: the coincidence of *bios* and *zoé*, of politics and unqualified life, does not take place on the separate plane of valorization-administration – where capital performs the recomposition of the subject-humanity – but rather on the plane of consistency that Cesarano calls «being»⁴⁸. As he writes in the *Manuale di sopravvivenza* (1974), summarizing the conclusions of *Apocalisse*:

What is now foregrounded is being. The being of the species and thus of the individual, indissolubly [...] since the development of the species' means of production – and of its world – has reached its historical end: that of conquering the totality of the biosphere as a natural habitat (*Umwelt*) (beyond the alienation of nature), and that of potentially ensuring

46 G. Cesarano, G. Collu, *Apocalisse e rivoluzione*, cit., p. 89.

47 Id., *Cronache di un ballo mascherato*, edited by Archivio Anomia, Italian version <https://archivioanomia.it/cronache-di-un-ballo-mascherato-capitale/> (last access 30-9-2025).

48 The “plane of consistency” was introduced by Deleuze and Guattari in *A Thousand Plateaus*, in the chapter *Geology of Morals*, translated by B. Massumi, University of Minnesota Press, Minneapolis 1987, p. 42. For chronological reasons, this notion was unknown to Cesarano. His preparatory notes for *Utopia capitale* summarize Foucault, Cooper, Marcuse, and Laing, but make no mention of Deleuze or Guattari, precluding any direct influence. Nonetheless, the parallel seems relevant: Cesarano's inquiry engaged with a constellation of immanent life – which we will examine further in a forthcoming study – also explored at the time by Debord and Foucault, and perhaps most fully articulated by Deleuze and Guattari.

biological survival (beyond the alienation to labor, to poverty, and to profit). [...]. Capital is the cancer from which the species risks dying before truly beginning to live. In this sense, the revolution is biological.⁴⁹

The biological revolution can therefore take place only at the point where the being of the species coincides with the being of the individual, and where the life of the species passes without rupture into the non-specific life that traverses the biosphere⁵⁰. It is the bare body of the living, in what Cesarano calls «global corporeality»⁵¹, where everyday life opens into what Deleuze and Guattari would have called «biocosmic memory»⁵², and the indeterminable singularity of a life touches the indeterminate plurality of lives – pointing to the plane of immanence of a revolution entirely opposed point by point to the «global revolution» of which the Club of Rome would not cease to speak: the biological revolution as the expression of the real movement «which abolishes the present state of things»⁵³.

If it is through the projective simulation of global apocalypse that the capitalist apparatus for the administration of living life – after having carried out, throughout the 19th and the first half of the 20th century, the biopolitical program of «defending society» – would aim, from the second half of the 20th century onward, to assume responsibility for defending the environment and thus for producing itself as environment (if, with Camatte, we can designate the becoming-society of capital with the notion of «anthropomorphosis», we might perhaps call *cosmomorphosis* its becoming-environmental)⁵⁴, then it is in the form of biological, molecular, and intrasubjective revolution that life-political immanence may access the truly global dimension of corporeality.

49 G. Cesarano, *Manuale di sopravvivenza*, Bollati Boringhieri, Torino 2000, p. 19.

50 Cfr. G. Deleuze, *Immanence: A Life*, in Id., *Pure Immanence: Essays on a Life*, translated by A. Boyman, Zone Books, New York 2001. See also the illuminating reading by G. Agamben, *Absolute Immanence*, included in the volume *Potentialities: Collected Essays in Philosophy*, translated by D. Heller-Roazen, Stanford University Press, Redwood City 1999, pp. 220-239.

51 G. Cesarano, G. Collu, *Apocalisse e rivoluzione*, cit., p. 122.

52 G. Deleuze, F. Guattari, *Anti-Oedipus*, translated by R. Hurley, University of Minnesota Press, Minneapolis 1983, p. 190.

53 K. Marx, *Contribution to the Critique of Hegel's Philosophy of Law. Introduction*, in *Karl Marx: Early Writings*, translated by R. Livingstone, G. Benton, Penguin Classics, London 1992, pp. 244-245.

54 On the concept of the becoming-environmental of capital, see the insightful essay by E. Hörl, *The Environmentalitarian Situation: Reflections on the Becoming-Environmental of Thinking, Power, and Capital*, in M. Kesting, M. Muhle, J. Nachtigall, S. Witzgall *Hybrid Ecologies*, Diaphanes, Zurich 2018, pp. 53-58. For an eco-ontological critique of cybernetics, see Y. Hui, *Machine and Ecology*, in Y. Hui (ed.), *Cybernetics for the 21st Century Vol. 1: Epistemological Reconstruction*, Hanart Press, Hong Kong 2024, pp. 85-100.