

ANTHROPOCENES & THE CAPITALOCENE ALTERNATIVE

The Anthropocene has become the most important – and also the most dangerous – environmentalist concept of our times. It is dangerous not because it gets planetary crisis so wrong, but because it simultaneously clarifies ongoing ‘state shifts’ in planetary natures while mystifying the history behind them¹. No phrase crystallizes this danger more than the words *anthropogenic global warming*. Of course this is a colossal falsification. Global warming is not the accomplishment of an abstract humanity, the *Anthropos*. Global warming is capital’s crowning achievement. Global warming is *capitalogenic*².

The Anthropocene’s popularity derives from something more than impressive research. Its influence has been won on the strength of its story-telling power, and on its capacity to unify humans and the earth-system within a singular narrative. *How* it unifies earth-system and humanity within a singular narrative is precisely its weakness, and the source of its falsifying power. For the unification is not dialectical; it is the unity of the cyberneticist – a unity of fragments, an idealist unity that severs the constitutive historical relations that have brought the planet to its present age of extinction.

¹ A. D. Barnosky *et alii*, *Approaching a State Shift in Earth’s Biosphere*, «Nature», 486 (2012), pp. 52-58.

² P. Street, *How to Stop Capitalism’s Deadly War With Nature*, «Truthdig» (16 September), http://www.truthdig.com/report/item/how_to_stop_capitalisms_deadly_war_with_nature_20160913.

In the three years since my initial sketch of the Capitalocene³, the concept has gone viral⁴. For me, the Capitalocene is partly a play on words. It is a *geopoetics*⁵, a counterpoint to the Anthropocene's extraordinary popularity. It is a means of cutting to the heart of the conversation initiated by Crutzen and Stoermer⁶. That conversation has been twofold⁷. One is an argument about stratigraphy. In this, the necessary criterion for designating a new geological era turns on a 'geological signal' that «must be sufficiently large, clear and distinctive» on a global scale⁸. This is the Geological Anthropocene. It begins, we are now told, at the mid-century dawn of the atomic age⁹.

The Geological Anthropocene – a useful, «formal concept to the scientific community» – has, however, been eclipsed by the Popular Anthropocene: a way of thinking the origins and evolution of modern ecological crisis. This is debate joined by the Capitalocene – and the stakes are anything but silly¹⁰. The Popular Anthropocene poses several daunting questions: 1) What is the character of 21st century ecological crisis?; 2) When did that crisis originate?;

³ J. W. Moore, *Anthropocene, Capitalocene, and the Myth of Industrialization, Part I*, «World-Ecological Imaginations», 2013 (13 May), <https://jasonwmoore.wordpress.com/2013/05/13/anthropocene-or-capitalocene/>; Id., *Anthropocene, Capitalocene, and the Myth of Industrialization, Part II*, «World-Ecological Imaginations», 2013 (16 May), <https://jasonwmoore.wordpress.com/2013/05/16/anthropocene-or-capitalocene-part-ii/>; Id., *Anthropocene, Capitalocene, and the Myth of Industrialization, Part III*, «World-Ecological Imaginations», 2013 (19 May), <https://jasonwmoore.wordpress.com/2013/05/19/anthropocene-or-capitalocene-part-iii/>.

⁴ I chart the genealogy of the Capitalocene elsewhere (see J. W. Moore [eds.], *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*, in *Anthropocene or Capitalocene?*, Oakland, PM Press, 2016, pp. 1-11). The term originates with Andreas Malm. The use of the Capitalocene to signify capitalism as a system of power, capital, and nature is broadly shared with Donna Haraway (see *Staying with the Trouble*, in J. W. Moore [eds.], *Anthropocene or Capitalocene?*, pp. 34-76). Haraway and I began experimenting with the concept independently before discovering each other in 2013.

⁵ A. Last, *We are the world?*, «Theory, Culture & Society», 2015.

⁶ P. J. Crutzen – E. F. Stoermer, *The Anthropocene*, «IGBP [International Geosphere-Biosphere Programme] Newsletter», 41 (2000), pp. 17-18.

⁷ J. W. Moore, *The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis*, and *The Capitalocene, Part II: Accumulation by Appropriation and the Centrality of Unpaid Work/Energy*, «Journal of Peasant Studies», 2017.

⁸ See Working Group on the 'Anthropocene', <http://quaternary.stratigraphy.org/workinggroups/anthropocene/>, accessed 21 September, 2016.

⁹ D. Carrington, *The Anthropocene Epoch: Scientists Declare Dawn of Human-Influenced Age*, «The Guardian», 29 August, 2016, <https://www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth>.

¹⁰ Contra D. Chakrabarty, *Inteviw*, «Cultures of Energy Podcast», 16 June 2016, <http://culturesofenergy.com/ep-19-dipesh-chakrabarty/>.

and 3) What forces drive that crisis? That conversation, except for a brief moment in the 1970s¹¹, was marginal until the new millennium.

Crutzen and Stoermer's Anthropocene enjoyed the necessary virtue required of all Big Ideas – timing. It helped that the Anthropocene was one of those quasi-empty signifiers – like globalization in the 1990s – that could be filled with the aspirations and arguments of otherwise radically divergent thinkers¹². Quasi-empty, however, was not completely vacant. The Popular Anthropocene has worked not only because it is plastic, but because it fits comfortably with a view of population, environment, and history governed by food and resource use – and abstracted from class and empire (and not only class and empire).

If that sounds neo-Malthusian, it is. Not for its emphasis on population, but for ignoring modernity's «special laws of population»¹³ – human and non-human alike¹⁴. In Anthropocenic thought, history is the first casualty; like Malthus in the eighteenth century, its major exponents substitute an abstract time for history, evacuating the very historical perspective that might give real explanatory flesh and blood to their quantitative reckonings. Among Malthus's greatest errors was his inability to situate the late eighteenth century's quite real combination of agricultural stagnation and population increase within longer waves of agricultural revolution and demographic change¹⁵.

The Capitalocene is therefore precisely *not* an argument about geological history¹⁶. For starters, the 'Age of Capital' necessarily precedes and precipitates the 'geological signals' necessary to discern a new geological era. That era – the Anthropocene – will outlast capitalism by a great many millennia. The biospheric conditions of the ongoing planetary 'state shift' will shape the conditions of human organization for a very *longue durée* indeed.

¹¹ E.g. D. H. Meadows *et alii*, *The Limits to Growth*, New York, Signet, 1972.

¹² Compare W. Steffen *et alii*, *The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?*, «Ambio», 36(8), 2007, pp. 614-621; M. Davis, *Who will build the ark?*, «New Left Review», II/61 (2010), pp. 29-46.

¹³ K. Marx, *Capital*, 3 vols, New York, International Publishers, 1967, I, p. 592.

¹⁴ W. Secombe, *A Millennium of Family Change*, London, Verso, 1992; T. Weis, *The Ecological Hoofprint*, London, Zed, 2013.

¹⁵ See Moore, *The End of the Road? Agricultural Revolutions in the Capitalist World-Ecology, 1450-2010*, «Journal of Agrarian Change», 10(3), 2010, pp. 389-413; W. Secombe, *A Millennium of Family Change*, and Id., *Weathering the Storm*, London, Verso, 1995.

¹⁶ Contra, e.g. A. Vansintjan *The Anthropocene Debate*, «Uneven Earth», 2015, <http://www.unevenearth.org/2015/06/the-anthropocene-debate/>.

The Capitalocene *is* an argument about thinking ecological crisis. It is a conversation about geo-history rather than geological history – although of course the two are related. The Capitalocene challenges the Popular Anthropocene’s Two Century model of modernity – a model that has been the lodestar of Green Thought since the 1970s¹⁷. The origins of modern ecological crisis – and therefore of capitalism – cannot be reduced to England, to the long 19th century, to coal, or to the steam engine. The Anthropocene’s historical myopia, moreover, seems to be immanent to its intellectual culture. In this respect, the Capitalocene challenges not just the earth system scientists – but also those on the ‘other’ side of the Two Cultures¹⁸ – *who refuse to name the system*. The Popular Anthropocene is but the latest of a long series of environmental concepts whose function is to deny the multi-species violence and inequality of capitalism and to assert that the problems created by capital are the responsibility of all humans. The politics of the Anthropocene – an *anti-politics* in Ferguson’s sense¹⁹ – is resolutely committed to the erasure of capitalism and the capitalogenesis of planetary crisis.

The Anthropocene helpfully poses the question of Nature/Society dualism, but cannot resolve that dualism in favor of a new synthesis. That synthesis, in my view, rests on rethinking capitalism in the web of life. While it is now commonplace to invoke – quite properly – «system change, not climate change», we should take care with how we think that system. A critique of capitalism that accepts its self-definition – as a market or social system abstracted from the web of life – is unlikely to guide us helpfully towards sustainability and liberation. We should be wary of views of capitalism reduced to their economic and social moments: the practice of «human exceptionalism»²⁰. Exceptionalisms are always dangerous; especially so when it comes to Humanity, a real abstraction active in a long history of racialized, gendered, and colonial violence²¹. The world-ecology conversation has argued the opposite: capitalism develops through the web of life.

¹⁷ Moore, *The Capitalocene, Part I*.

¹⁸ G. Pálsson *et alii*, *Reconceptualizing the ‘Anthropos’ in the Anthropocene*, «Environmental Science & Policy», 28 (2013), pp. 3-13; E. S. Brondizio *et alii*, *Re-conceptualizing the Anthropocene*, «Global Environmental Change», 39 (2016), pp. 318-337; J. R. McNeill – P. Engelke, *The Great Acceleration*, Cambridge, Harvard University Press, 2016.

¹⁹ J. Ferguson, *The Anti-Politics Machine*, Cambridge, Cambridge University Press, 1990.

²⁰ D. Haraway, *When Species Meet*, Minnesota, Univ. of Minnesota Press, 2008.

²¹ Moore, *Anthropocene or Capitalocene?*; Id., *The Capitalocene, Part I*, and Id., *Metabolic Rift or Metabolic Shift? Dialectics, Nature, and the World-Historical Method*, «Theory & Society», forthcoming.

In this movement, human *sociality* has been brutally reshaped through Nature/Society as real abstractions, enabling modernity's successive racialized and gendered orders²². This doubly-layered question of nature – as the real abstractions Nature/Society and as the web of life – is fundamentally implicated in every moment and movement of modern history.

Finally, the Capitalocene embodies world-ecology's rejection of two frames that dominate environmental social science. On the one hand, it seeks an alternative to concept-indicator approaches characterized by influential metaphors such as the 'ecological footprint' and the 'metabolic rift'. Such approaches conceptualize human organization – respectively markets and capitalism – independently of the web of life, then mobilize indicators of the 'degree-of or amount-of' stress or degradation²³. A relational approach, in contrast, follows part-whole movements in successive determinations and juxtapositions – through which the 'whole' in question (capitalism, imperialism, industrialization, etc.) undergoes qualitative transformation. This logic of inquiry opens analytical pathways that emphasize capitalism's extraordinary flexibility through its socio-ecological conditions. The Capitalocene argument consequently treads a different path from the governing procedures of global environmental change research: it is not a quest for «underlying [social] causes» of environmental change, nor for connecting 'social organization' to environmental consequences²⁴.

On the other hand, in arguing that climate change is capitalogenic, world-ecology argues *against* the view that climate change is created by Society. That may seem a fine point. It is in fact anything but. The conflation of human sociality (modes of re/production) with Society is a conceptual

²² See V. Plumwood, *Feminism and the Mastery of Nature*, New York, Routledge, 1993; J. W. Moore, *Capitalism in the Web of Life*, London, Verso, 2015; C. von Werlhof, *On the Concept of Nature and Society in Capitalism*, in *Women*, edited by M. Mies *et alii*, London, Zed, 1985, pp. 96-112. Real abstractions «are not mental categories that ideally precede the concrete totality; they are real abstractions that are truly caught up in the [socio-ecological] whole» (A. Toscano, *The Open Secret of Real Abstraction*, «Rethinking Marxism», 20[2], 2008, pp. 273-287: 274-75).

²³ T. K. Hopkins, *World-Systems Analysis*, in T. K. Hopkins *et alii*, *World-Systems Analysis*, Beverly Hills, Sage, 1982, pp. 145-158; e.g. M. Wackernagel *et alii*, *Tracking the Ecological Overshoot of the Human Economy*, «Proceedings of the National Academy of Science», 99(14), 2002, pp. 9266-9271; J. B. Foster *et alii*, *The Ecological Rift*, New York, Monthly Review Press, 2010.

²⁴ Respectively, E. S. Brondizio *et alii*, *Re-Conceptualizing the Anthropocene*, «Global Environmental Change», 39 (2016), pp. 318-337; S. Dalby, *Anthropocene Discourse*, Paper presented to the annual meeting of the Institute of British Geographers, Exeter, September 2015.

move indebted to a long history of gendered, racialized, and colonial violence²⁵. The Capitalocene pursues a different approach, privileging a triple helix of environment-making: the mutually constitutive transformation of ideas, environments, and organization, co-producing the relations of production and reproduction²⁶. This challenges a vulgar materialism implicit in many global environmental change studies, for which ideas, culture, and even scientific revolutions have little traction – a problem besetting radical as well as mainstream accounts²⁷. Even that, however, does not go nearly far enough:

The challenge for us may then be to use descriptive tools that do not give to Capitalocene the power to explain away the entanglement of earthly, resilient matters of concern, while adding that no Capitalocene story, starting with the ‘long sixteenth century’, can go very far without being entangled with the on-going invention-production-appropriation-exploitation of (...) ‘cheap nature’. In other words, we should not indulge in the very Capitalocene gesture of appropriation, of giving to an abstraction the power to define as ‘cheap’ – an inexhaustible resource that may be dismembered or debunked at will and reduced to illusory beliefs – whatever escapes its grasp²⁸.

The Capitalocene, then, is a key conceptual and methodological move in rethinking capitalism as «a historically situated complex of metabolisms and assemblages»²⁹. This complex includes – but cannot be reduced to – capital’s circuit of expanded reproduction. The concept’s virtue, in relation to alternatives, is its historical-relational focus. Alternative naming has proliferated – a hopeful and positive indicator of flourishing discontent with the Popular Anthropocene. The equally ungainly terms offered as

²⁵ Moore, *The Capitalocene*, Part I.

²⁶ Moore, *Capitalism in the Web of Life*; C. Merchant, *Ecological Revolutions*, Chapel Hill, University of North Carolina Press, 1989; D. Worster, *Transformations of the Earth*, «Journal of American History», 76(4), 1990, pp. 1087-1106; Seccombe, *A Millennium of Family Change*.

²⁷ E.g. Foster *et alii*, *The Ecological Rift*; W. Steffen *et alii*, *The Anthropocene: Conceptual and Historical Perspectives*, «Philosophical Transactions of the Royal Society A», 369 (2011), pp. 842-867.

²⁸ I. Stengers, *Accepting the Reality of Gaia*, in *The Anthropocene and the Global Environmental Crisis*, edited by C. Hamilton *et alii*, London, Routledge, 2015, pp. 134-144: 142; also Haraway, *Staying with the Trouble*; Moore, *Capitalism in the Web of Life*; Id., *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*, Oakland, PM Press, 2016; Id. (edited by), *The Rise of Cheap Nature*, in *Anthropocene or Capitalocene?*, pp. 78-115.

²⁹ Donna Haraway, Noboru Ishikawa, Scott F. Gilbert, Kenneth Olwig, Anna L. Tsing & Nils Bubandt (2016) *Anthropologists Are Talking – About the Anthropocene*, *Ethnos*, 81:3, 535-564, DOI: 10.1080/00141844.2015.1105838.

complementary, even alternative, to Anthropocene/Capitalocene frequently reveal innovative thinking. Some are oriented towards Braudel's 'very *longue durée*'³⁰; others to modernity's phenomenal forms of production (e.g. Tsing's Plantationocene³¹); still others to violent abstractions created by the past century's colonial developmentalism (e.g. Growthocene, Econocene³²).

The argument that the Capitalocene elides the experience of Communist projects is framed by a concept-indicator epistemology – a surprising critique when offered by otherwise relational thinkers³³. But the Capitalocene is a dialectical – not 'generalizing' – claim³⁴. In contrast to positivist generalization, dialectical arguments proceed *through*, not in spite of, variation. Does anyone seriously argue that the Soviet and Chinese 'communist' experiences have marked a fundamental rupture with capitalism's long-run patterns of environment-making? The Capitalocene names a historical process in Marx's sense of the tendency of the rate of profit to fall³⁵: as a general law constituted *through* counter-acting tendencies. To what degree either the Soviet or Chinese projects represented a fundamental break with previous waves of capitalist environment-making is an important question but beside the point. The question is whether or not such partial moments have overwhelmed the «developing tendencies of history»³⁶ – established and reproduced in the capitalist world-ecology over the *longue durée*³⁷.

³⁰ F. Braudel, *History and the Social Sciences*, «Review», 32(3), 2009, pp. 171-203; E.g. Pyne's Pyrocene (S. J. Pyne, *The Fire Age*, «Aeon» [May 15, 2015], <https://aeon.co/essays/how-humans-made-fire-and-fire-made-us-human>).

³¹ A. L. Tsing, *A Feminist Approach to the Anthropocene*, public lecture, Barnard Center for Research on Women, Barnard College, 10 November 2015, <http://bcrw.barnard.edu/videos/anna-lowenhaupt-tsing-a-feminist-approach-to-the-anthropocene-earth-stalked-by-man/>.

³² E. Chertkovskaya, A. Paulsson, *The Growthocene*, ENTITLE blog, 19 February 2016, <https://entitleblog.org/2016/02/19/the-growthocene-thinking-through-what-de-growth-is-criticising/>; R. B. Norgaard, *The Econocene and the Delta*, «San Francisco Estuary and Watershed Science», 11(3), 2013, pp. 1-5.

³³ E.g. T. Morton, *Dark Ecology*, New York, Columbia University Press, 2016.

³⁴ Moore, *The Capitalocene, Part I*, and *The Capitalocene, Part II*.

³⁵ K. Marx, *Capital*, Vol. III, New York, Penguin, 1981.

³⁶ G. Lukács, *History and Class Consciousness*, Cambridge, MIT Press, 1971, p. 184.

³⁷ It is difficult for me to read the Soviet project as a fundamental rupture. The great industrialization drive of the 1930s relied – *massively* – on the importation of fixed capital, which by 1931 constituted 90 percent of Soviet imports. The Soviets were so desperate to obtain hard currency that «the state was prepared to export anything and everything, from gold, oil and furs to the pictures in the Hermitage Museum» (B. Kagarlitsky, *Empire of the Periphery*, London, Pluto, 2007, pp. 272-273). If the Soviet project resembles other modes of production, it is surely the tributary, not socialist, mode of production, through which the state directly extracts the surplus. Nor did the Soviets turn inwards after 1945. Soviet trade

A politics of nature premised on degradation rather than work renders the radical vision vulnerable to a powerful critique. That critique says, in effect, that pristine nature has never really existed; that we are living through another of many eras of environmental change that can be resolved through technological innovation³⁸. Of course such arguments are rubbish. The counterargument – for the Capitalocene – understands the degradation of nature as a specific expression of capitalism’s organization of work. ‘Work’ takes many forms in this conception; it is a multispecies and manifold geo-ecological process. This allows us to think of technology as rooted in the natures co-produced by capitalism. It allows us to see that capitalism has thrived by mobilizing the work of nature as a whole; and to mobilize human work in configurations of ‘paid’ and ‘unpaid’ work.

Human organizations are at once producers and products of the web of life, understood in its evolving mosaic of diversity. From this perspective, capitalism becomes something more-than-human. It becomes a world-ecology of power, capital, and nature³⁹. This incorporates geological history

with OECD countries (in constant dollars) increased 8.9 percent annually between 1950 and 1970, rising to 17.9 percent a year in the following decade (calculated from Y. Gaidar, *Lessons of the USSR*, «Herald of Europe», 4, 2007, pp. 1-36: 14) – a trend accompanied by sharply deteriorating terms of trade and rising debt across the Soviet-led zone (Kagarlitsky, *Empire of the periphery*). Need we recall that the 1980s debt crisis was detonated not by Mexico but by Poland in 1981 (P. Green, *Debt, the Banks and Latin America*, «International Socialism», 2(21), 1983, pp. 3-57)?

³⁸ M. Lynas, *The God Species*, London, Fourth Estate, 2011; *Love Your Monsters*, M. Shellenberger – T. Nordhaus (eds.), San Francisco, The Breakthrough Institute, 2011.

³⁹ J. W. Moore, *Capitalism as World-Ecology*, «Organization & Environment», 16(4), 2003, pp. 431-458; Id., *Transcending the Metabolic Rift*; Id., *Capitalism in the Web of Life*; Id., *Anthropocene or Capitalocene?*; E. Altvater, *The Capitalocene, or, Geoengineering against Capitalism’s Planetary Boundaries*, in *Anthropocene or Capitalocene?*, edited by J. W. Moore, pp. 138-152; J. Bolthouse, *Rethinking Capital’s Relations to Nature*, «Japanese Journal of Human Geography», 66(6), 2014, pp. 580-594; A. A. Camba, *From Colonialism to Neoliberalism*, «Extractive Industries and Society», 2 (2015), pp. 287-301; C. R. Cox, *Faulty Presuppositions and False Dichotomies: The Problematic Nature of ‘the Anthropocene’*, «Telos», 172, Fall 2015; S. Deckard, *World-Ecology and Ireland: The Neoliberal Ecological Regime*, «Journal of World-Systems Research», 22(1), 2015, pp. 145-176; M. Dixon, *Biosecurity and the Multiplication of Crises in the Egyptian Agri-Food Industry*, «Geoforum», 61 (2015), pp. 90-100; A. El Khoury, *Globalization, Development, and Social Justice*, New York, Routledge, 2015; B. Gill, *Can the River Speak?*, «Environment and Planning A», 48(4), 2016, pp. 699-717; D. Hartley, *Anthropocene, Capitalocene and the Problem of Culture*, in *Anthropocene or Capitalocene?*, edited by J. W. Moore, pp. 154-165; A. Jakes, *Booms, Bugs, Bust*, «Antipode» (forthcoming); B. J. Marley, *The Coal Crisis in Appalachia*, «Journal of Agrarian Change» (forthcoming); J. McBrien, *Accumulating Extinction*, in *Anthropocene or Capitalocene?*, edit-

but does not substitute for it. World-ecology refuses naturalism and constructivism – not in favor a balance between the two but in pursuit of their transcendence. It incorporates geobiophysical processes *and* social and economic history within a relational field. That wider field is crucial. It allows world-ecology to situate the histories of culture and knowledge production, frequently excised from the historiography of capitalism⁴⁰. The Capitalocene therefore contests social as well as environmental reductionism, and resists any periodization of capitalism derived from the mythic category of Society (humans without nature)⁴¹.

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⁴⁰ Moore, *Capitalism in the Web of Life*, pp. 193-217; Id., *The Capitalocene, Part II*; Hartley, *Anthropocene, Capitalocene and the Problem of Culture*.

⁴¹ Although this is how A. Malm (*Fossil Capital*, London, Verso, 2016) uses it.