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Sentences on Nature Accelerationism

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I.

The world grows.

In the future time block:

The world population will have peaked at 9.7 bn in 2064 (up from 7.8 bn today),¹ zeroing the current gap of 140 m people being born vs. 58 m people dying every year.²

By 2030, 1.9 bn additional people will be global middle class (= 5.3 bn in total).³

By 2050, “more than twice as many people in the world will be living in urban than in rural settings” (up from 50% in 2007).⁴

Global GDP will have more than doubled by 2050.⁵

Required agricultural production will have doubled by 2050,⁶ not least because:

„Between 2010 and 2050, global meat and dairy consumption is on a course to increase by nearly 70 percent, with beef consumption increasing by more than 80 percent.“⁷

“[W]orld energy consumption will grow by nearly 50% between 2018 and 2050. Most of this growth comes from countries that are not in the OECD.”⁸

Global Average life expectancy at birth will be at 79 by 2070 (up from 73 today).⁹

“Even if all nations party to the Paris Agreement ratify their commitments, warming would still reach between 2.6°C and 3.1°C by 2100.”¹⁰ –

Marks/brushstrokes in the time block:

SOLARFOODS will produce 400 Million meals/year by 2025.¹¹

The ITER fusion reactor in Cadarache, France will start its deuterium-tritium operation by 2035.¹²

The EU will (by own admission) be carbon neutral by 2050 (European Green Deal).

The US too (Biden/Harris plan, but Biden will not see that day).

China by 2060 (but Xi Jinping will not see that day).¹³ –

“This [Elon Musk’s \$100M prize for best carbon capture tech] will get ~10X the attention, but to keep things in perspective: MSFT announced a \$1B carbon removal fund, Carbon Engineering has already raised about \$100M – and \$100M is probably about 1/5th the cost of a full-size DAC plant.”¹⁴

The total solar eclipse in Antarctica on December 26, 2057. –

2030, 2040, 2050, 2070.

“What does a date actually do?”¹⁵ –

These are all possible dates of my/your death. –

The time block is a spectral space where things go from nonexistence to existence and from existence to nonexistence.

A modulation of what’s part of the world. –

Bodies and things being drawn out of nothing (*but the Earth*). –

A material spook of the Earth.

II.

You cannot develop the ‘modern’ (= 19th-century) concept of nature in the absence of processes of industrialization and urbanization powered by fossil fuel use (cf. romantic poets).

You cannot have a 1st-wave (= late 20th-century) environmental movement and nature love without historically novel levels of material prosperity created by global capitalism based on fossil fuels.

(Environmentalism is an effect of past accelerations.)

Without fossil fuel based technoscientific civilization, you cannot (= do not have the cognitive means to) develop the ecosystems concept and Earth Systems science, count the species that are being lost, the ppm CO₂ in the atmosphere, computationally model future climate trajectories.¹⁶ –

You cannot get to 7,8 bn people on the planet without having used fossil fuels (not one of us would exist without climate change [individually and quantitatively]).

(Carbon capitalism produced 7 bn extra people [800 m in 1750 to 7.8 bn today].)

There is *not a single person* too many on the planet. –

Without fossil fuel industrial civilization, you cannot develop CO₂-free energy and agricultural (social) technologies to power and feed 9 billion people.

“[Wind turbines] are pure embodiments of fossil fuels.”¹⁷ –

That’s why I *embrace* climate change.

(@baroquespiral: “Climate change can and should be seen as a positive opportunity”¹⁸).

III.

Marx (= *arche-accelerationist*¹⁹) wanted to selectively intensify ongoing trends of capitalist economies, Ecomodernists²⁰ aim at (non-dialectically) intensifying certain trends of capitalist ecologies/in capitalism’s metabolism.

(Cf. the ‘futures’ in ‘unequally distributed futures’.)

Trends they want to accelerate:

– Ongoing gains in resilience (to climate change and environmental hazards generally) that come with increasing prosperity; which equates to accelerating

– The ongoing demographic transition, whereby tendential middle-class-ification of everyone slows and ends population growth

– Ongoing urbanization trends that condense people into decreasing portions of the Earth’s surface, freeing up land they left for other uses including nature restoration²¹

– Ongoing efficiency gains in energy and materials use that reduce the material footprint of a given bag of goods and services to intensify ongoing relative and absolute decoupling of prosperity and material footprint²²

– The ongoing progression towards increased energy density of materials and technologies of energy production (biomass, preindustrial wind and hydro – fossil fuels – nuclear fission – ongoing energy density gains in wind,²³ solar,²⁴ hydro [cf. further falling prices] – nuclear fusion) to generate more carbon free energy and reduce waste²⁵

– Ongoing vectors of agricultural innovation to decrease land and resource use to eventually get off the land (*GMOs, plant-based meat, clean meat*) and thus also accelerate

– Ongoing conservation area growth²⁶

– Ongoing growth of ecological knowledge, monitoring systems (the role AI in these)

– Investments in ongoing research into and development of geoengineering solutions for climate change mitigation (carbon capture, solar geoengineering)²⁷ [see quote above].

(Terraforming the Earth). –

That’s a framework for Nature Accelerationism.

(These *Sentences* assemble existing ideas from different strands of accelerationist thought and put them into contact.)

(That certain parameters must and will have peaked and then declined – CO₂-emissions, land use, raw materials use, world population, etc. – is correct, and the timeline of these trajectories is crucial, especially re climate. But the desired parameter trajectories will not come about through, or in any way be connected to, framings, rhetoric, and experiences of general shrinking, (moral) embrace of scarcity, displays of individual virtue (neoliberal consumer ethics), punishment for our ‘hubris’ etc.

The core ‘paradox’ is none: Driving parameters down (e.g., CO₂ ‘back to’ 1990 levels) is *acceleration, not deceleration* – not going back,²⁸ going small, going local etc.: Managing the parameters requires as well as intensifies the acceleration of nature.²⁹) –

IV.

The positioning of the biologist in the biological world is itself a new biological fact in nature.

The development and employment at scale of genetic engineering is.

The industrial animal fertilization complex is.

The demographic transition is.

Tinder is.

The actions of the ecologist in an ecology are a new ecological fact in nature.

Sensing-based ecologies in agriculture and conservation are.

Factory farms are.

Clean meat (*a still further unfolding*) is: Organ-less meat, a new ontology of flesh/life.

Decoupling is.

The new supercomputer-prognoses (I.) – and acting on them – are.

The sociability of the internet is a new social phenomenon in nature (social are natural phenomena, cf. bonobo sociability).

“Our skyscrapers are not separate from nature; they are nature, as much as a termite colony’s cathedral mound or a chaffinch nest or a beehive.”³⁰

CERN is new physical phenomenon in nature.

Atomic waste is.

“[N]uclear waste is dense, discrete, and tangible, so the actions necessary in order to deal with its disposal should be harder to pass along to the commons, deferred elsewhere and into another time.”³¹

The buildout of ITER is.

Anthropocene-level material extractions and flows are a new geological phenomenon in nature.

Stratospheric aerosols or sun-covers and carbon removal is new climatic phenomenon in nature.

The CO₂ ppm-curve is, as it turns on its heels, stunned by spirit.

The Three Gorges Dam is new hydrological phenomenon in nature. –

Nature accelerationism understands ‘nature’ as the unfolding of the Earth’s possibility space (a process that requires every more energy throughput in each step?); such that today, this unfolding (i.e., nature) is largely happening within ‘human societies’ (part of their escalating niche construction activity). This is the domain where new nature emerges today: In the general vectors of capitalist human ecology, in the new physical, geological, chemical, biological, and social phenomena they bring forth. The technological and socio-technological ways of bringing them forth. –

Natural history is a history of technofixes. –

The unfolding of nature accelerates through geologic time because the unfolding changes its mode of operation over time, it is first purely physical (as in solar system formation), then evolutionary, then cultural evolutionary (transgenerational accumulation of cultural knowledge), then warped (cognitive on intragenerational timescales), then...

With natural history today unfolding at the scale of the individual human’s lifespan (at the scale of a life), we have the privilege (specific of this age of the Earth) *of observing nature’s unfolding first hand*, not after the fact (like Hubble, Curie, everyone else).

As if being present at – and existing at the timescale of – the onset of the stelliferous era, or the transition from prokaryotes to eukaryotes. –

The Earth today is not broken or damaged, but *excels*.

We are doing nature’s job. –

V.

The ‘rest’ of the biosphere is a residual of past trials of nature’s unfolding.

The difference between human societies and their environments is not qualitative but temporal – it is the difference of earlier and later instances of nature. –

This multi-footed animal population plus green stuff that is – while fidgeting with their extremities – violently shoved around by the Anthropocene bulldozers etc., as if you had a bunch of little moving animals in a salad bowl that you violently shake. –

“As Raudsepp-Hearne et al. point out, human welfare has improved significantly on a global level over the last few decades, even as a majority of ecosystem services have declined.”³²

Keep biodiversity around like King Louis XIV garments.

“Biodiversity loss is an act of cultural vandalism”³³ – in the Natural History Museum and Spa that is the biosphere.

VI.

That nature excels does not imply that people and nonhuman animals are fine.

Nature’s unfolding per biological evolution was never particularly well aligned with its products’ wellbeing.

The biosphere never has been a place of species-appropriate animal husbandry.

Nature’s unfolding per cultural evolution also is not a priori aligned with the wellbeing and interests of people at a given time, and there is no overall (improvement in) alignment in time. The story of nature accelerationism is not part of the Enlightenment story, involves no ‘techno’-optimism – or any optimism. It is a story of environmental realism in a disturbing universe. The unfolding of nature is the unfolding of a logic that is fundamentally alien to the individual beings it brings forth as its temporary hosts (they do not choose the content of the unfoldings, nor the sequence of natural history itself which their lives have been inserted into).

Still, better alignment is possible – not overall (as in Pinkerism³⁴) but at any given moment.

The temporal space of alignment is the individual lifespan – a life, basically.

(Alignment is temporally local, not global.) –

Nature accelerationism is the argument that absent Enlightenment/eschatological dynamics to fall back on, there are better or worse ways of tailoring the unstoppable process of nature's unfolding (in a given contemporary sequence) to the living, and that better alignment arises mainly through the selective acceleration of nature's unfoldings.

Today, mitigating actual and potential costs associated with humans' footprint on the planet³⁵ requires the embrace and shaping of the ongoing unfoldings listed (III.) – including, crucially, a much more prognostics- and foresight-based style of engagement. –

That's the politics of the time block, spook of the Earth.

You cannot accelerate without the time block. (Cf. planning³⁶/guided innovation/managed deterritorialization.³⁷) –

These *Sentences* are a propaedeutics to planning. –

Acceleration is linked to the time block/its prognostics, and the time block is linked to a life.

VII.

The 1% use of carbon and materials.

“From 1990 to 2015, a critical period in which annual emissions grew 60% and cumulative emissions doubled, we estimate that: The richest 10% of the world's population (c.630 million people) were responsible for 52% of the cumulative carbon emissions – depleting the global carbon budget by nearly a third (31%) in those 25 years alone; [...] The richest 1% (c.63 million people) alone were responsible for 15% of cumulative emissions, and 9% of the carbon budget – twice as much as the poorest half of the world's population.”³⁸

This is the only place where degrowth makes sense (income ceiling³⁹).

Degrowth in the global 1% or the global 10% is acceleration.

(Fisher and Graeber [and Thiel...] and Buck and Phillips and Srnicek and Williams note that the past decades have brought scientific, technological, social and cultural *deceleration*.⁴⁰

That's why accelerationists want to get over with neoliberalism: It's a proponent of deceleration (by administering workers and publics degrowth, lobbying for energy company tax breaks, fossil fuel RD spending, Koch brothers sponsored climate denialism thinktanks, reluctance to big state investments, defunding basic research etc.).

(May I even say: Climate change must be reversed *for it decelerates the unfolding of nature*? By propelling human societies into chaos, it decelerates the unfolding of nature that is going on inside them. "Green acceleration strives for integration which keeps pace with change, thereby preventing the collapse of change onto fixed equilibrium states such as extinction."⁴¹)

Accelerationism is socialist.⁴²

(„Socialism“ gestures towards a level of *tailored-ness* of future natural history to the living that amounts to *gamification*:

For fully cared-for, affluent, leisure-time spending future humans with maxed out QUALI-lifespans, the pursuit of the future is itself a type of leisure activity, advent of novelty and unfolding of new nature – of all future technological trajectories etc., of all alienations – under such conditions turns into a *game* being played that is intellectually interesting, aesthetically pleasing, but decoupled from one's own material or physical wellbeing, which is guaranteed regardless.) –

VIII.

1% lifestyles demonstrate:

There are no fixed limits on Earth (1% not affected by crossing them). The hoax of 'given' carrying capacities and/or 'biophysical limits' to the Earth system as illustrated by the climate change resilience of billionaires or skiing facilities in the Saudi desert or or or.

„The human enterprise has continued to expand beyond natural limits for millennia“.⁴³

(The empty planes of the Earth before the agricultural evolution...; no cities where there are cities now..., no people where there are people.)

(A coin, falling off a table and now spinning on the wooden floor, with the engraving THE EARTH IS INFINITE.)

Malthusian *vomit* from the *Population Bomb* to *Limits to Growth* up to “A safe operating space for humanity”.⁴⁴ –

Climate change is a pure social justice issue (*Geopower*⁴⁵). –

IX.

Shavero thinks accelerationist art is sci-fi.⁴⁶

But one must specify: It's the sci-fi of the time block (I). –

Buck's intro to her *After Geoengineering* exemplifies (as piece of conceptual proto-literature) nature accelerationist art as an art of the time block 2020–2070.

Buck shows readers a portfolio of vignettes from the 2030s, 2040s, 2050s, and 2070s regarding possible trajectories of the development and employment of geoengineering capabilities such that readers navigate the portfolio based on their answer to questions posed along the way. Accordingly, different readers may see different episodes from each decade – the conceptual lynchpin being that of course you will not just read through ‘your’ assigned trajectory but the other vignettes from each decade as well, such that you don't see just this or that possible trajectory, but the (assumed) possibility space itself of geoengineering in the time block.

Most poignant about this in my mind is this quality that each time you wake up a decade later *as if out of nothing* (one vignette in fact involves waking up in the morning), that each awakening really comes a full decade after the last, and that within a couple of pages you have thus switched forward 50 years: As if there were not many moments in a life but just 4 or 5 – and then you are already at the end of the time block as a life's *absolute* frame (Buck does not continue beyond 2070 – the average reader of her book will be not around longer).

A second moment of absoluteness is encapsulated by the way that Buck's vignettes iterate versions of the same scenes:

"You take your sandwich out of its wrapper..."

"You eat your sandwich at your desk..."

"No more stories,' you tell your grandson and granddaughter. 'It's really time for bed'..."

"You're getting ready for bed..." –

There's a deep sense of enclosure to these scenes, not just because they are indeed enclosed in seas of unexamined life (decades in-between), but also because the alternative versions, however tangible they may seem put side by side, are obviously *not present to the inhabitants of each given scene*. That's all there is for them. Buck's time block proto-literature thus sets the notion of absolute enclosure in any given path through the geoengineering possibility space sharply against the display of the possibility space itself, and in some sense invites us to inhabit the latter rather than the former.

To inhabit the time block as navigational space.

To engage not with a particular future world (mostly the case in sci-fi), but with a world of worlds (in the time block).

X.

The time block is a space of projections, it plots out a world that will manifest when nothing changes (when today's change does not radically change).

Like the time block in Buck's *After Geoengineering*, the time block sketched at the beginning (I.) is overall the default scenario (even the margins/bandwidth of projected outcomes still part of the default case; different scenarios, but all in some sense standard = non-black-swan). –

The time block is the canvas of nature accelerationist art.

Nature accelerationist art is about the disruption of the default image.

It is the art of a war time-type effort and mobilization⁴⁷ for an acceleration of nature.

It instantiates an aesthetic/poetic navigation of the world of worlds to shape the material spook of the Earth that is ongoing no matter what.

It slides on the vectors of Nature Accelerationism (III.)/paths of unfolding nature that pierce into the future/path dependent sticks into time (something very precise and local, like the thread of a fire (fuze) burning through a wood) whilst around them, the quantities/parameters of material throughput etc. are being modulated by that. –

For nature accelerationist art, a thing is not what it is (condemning the Earth to zero-sum-ism). –

For nature accelerationist art, a thing *is that thing in 2030, 2040, 2050...* –

For nature accelerationist art, every moment of a life happens at once. –

Its addiction to the spectral/kaleidoscope effect whereby the block *changes as a whole* every time things happen beyond the default image (ripple effects across decades plotting out new vignettes to wake up to).

X.

The time block/its prognoses are at the scale of your life.

(The time block lays your life bare (for it reaches to the end of it).)

(The time block is all there is to your life.) –

Natural history today unfolds at the scale of your life. As in:

“When the DNA structure was discovered, I was 24, and when the first human genome was sequenced I was 74”: Overlap of natural history and biography.

(The completion of the scan of the first human genome coincides with your first thyroid cancer episode, and with the marriage of your grand daughter.)

Nature accelerationist art is hence art of *a life* – and of how long of a life? –, in which natural history unfolds/as measure of natural history unfolding in it. –

The time block going forward is also the time block in which you pass through stages and periods in your life and get older.

We accelerate into our aging.

Nature accelerationist art is about the entirety of a life until its end.

To accelerate means to accelerate until/up to the end of one's life.

As in:

“By 2070, the price of a solar panel will have fallen to... and I will be 93.”

A new reactor type going online in China the day you move in to an old people's home.

“I never thought I'd see the day.”

Hearing aid with Siri growing into your head.

The *growth* of clean meat production facilities, their supplies, the *growth* of clean meat itself – its drawing itself/self-assemblage from the nutrient solution –, all beginning from the spore of that Eat Just/Good Meat chicken nuggets rollout at 1880 in Singapore in the Covid-19 winter of 2020.⁴⁸

The 100.000th dependence of Good Meat opening on the day that you, adopted child, take your mother into your home to care for her, with daily grocery deliveries. –

Nature accelerationist art is art of Greta at 100, 110, 120...

(Increasing life expectancy is acceleration.)

XI.

This idea that climate change is a 1-time thing is extended into the notion that it is a 1-generation thing.

Natural history comes in sequences that at some point come to some kind of logical conclusion – see the exhaustive evolutionary exploration of feasible multi-cellular body plans during the Cambrian Explosion, or the process of circuit miniaturization in (classical) chip production that will ultimately hit a barrier (quantum effects).

I believe that ‘climate and biodiversity stabilization’ is such a sequence, too, and that this episode may per accelerations be turned into a 1-generation thing.

As in:

„I was born in 1972, when John Sawyer’s “Man-made Carbon Dioxide and the ‘Greenhouse’ Effect” was first published, and by the time of my death in 2072, the episode of natural history called ‘fixing anthropogenic climate change’, will have come to its logical conclusion. I witnessed an *entire episode* of natural history.“

Spectral exuberance in the time block. –

Let’s get it over with! push through deeper into the unfolding of the planet, grasp as much of this unfolding as we can into our lifetimes.

That’s great.

That is the telos of the generational or time-block thinking. –

The existential *excitement* of having witnessed an entire sequence of this kind within a lifetime, whilst large sequences of earlier natural history were vastly multigenerational – even the Cambrian ‘Explosion’ took 500 Million years, the Oxygen Catastrophe took so many generations of microbes. –

This excitement of entire sequences of natural history within a life is what nature accelerationist art rehearses (cf. the gamification of nature).

The *joy* of making nature fast is what nature accelerationist art rehearses. –

Climate change is a one-time thing.

Urbanization is a one-time thing.

Transition to clean meat/getting off agriculture is a one-time thing.

Etc.

They (these episodes of natural history) don’t come back and will be eternally connected with our lives in this time block.

They are frozen with us in this time block.

We wrap them up and take them with us into pure pastness and leave behind the unfolding.

FIN.

¹ Stein Emil Vollset et al., “Fertility, Mortality, Migration, and Population Scenarios for 195 Countries and Territories from 2017 to 2100: A Forecasting Analysis for the Global Burden of Disease Study,” *The Lancet* 396, no. 10258 (October 2020): 1285–1306, [https://doi.org/10.1016/S0140-6736\(20\)30677-2](https://doi.org/10.1016/S0140-6736(20)30677-2).

² See data sheets at <https://ourworldindata.org/grapher/population-by-age-group-to-2100>.

³ Homi Kharas and Kristofer Hamel, “A Global Tipping Point: Half the World Is Now Middle Class or Wealthier,” *Brookings* (blog), September 27, 2018, <https://www.brookings.edu/blog/future-development/2018/09/27/a-global-tipping-point-half-the-world-is-now-middle-class-or-wealthier/>.

⁴ See <https://ourworldindata.org/urbanization>.

⁵ OECD (2018), GDP long-term forecast (indicator). doi: 10.1787/d927bc18-en (Accessed on 06 February 2021)

⁶ Jonathan Foley, “Feeding 9 Billion,” National Geographic, accessed February 7, 2021, <http://www.nationalgeographic.com/foodfeatures/feeding-9-billion/>.

⁷ Richard Waite, Daniel Vennard, “Without Changing Diets, Agriculture Alone Could Produce Enough Emissions to Surpass 1.5°C of Global Warming,” World Resources Institute, October 17, 2018, <https://www.wri.org/blog/2018/10/we-cant-limit-global-warming-15c-without-changing-diets>.

⁸ “EIA Projects Nearly 50% Increase in World Energy Usage by 2050, Led by Growth in Asia - Today in Energy - U.S. Energy Information Administration (EIA),” accessed February 7, 2021, <https://www.eia.gov/todayinenergy/detail.php?id=41433>.

⁹ See <https://www.statista.com/statistics/673420/projected-global-life-expectancy/>.

¹⁰ See <https://www.ipcc.ch/sr15/chapter/spm/>.

¹¹ See <https://solarfoods.fi/about-us/#roadmap>.

¹² Iter press release, 17 November 2016, https://www.iter.org/doc/www/content/com/Lists/list_items/Attachments/708/2016_11_IC-19.pdf.

¹³ Ted Nordhaus Wang Seaver, “China Breaks Decades of Climate Gridlock,” *Foreign Policy* (blog), accessed February 4, 2021, <https://foreignpolicy.com/2021/01/11/china-climate-diplomacy-decarbonize-net-zero-separate-and-differentiated/>. Cf. “For an Ecological Realpolitik,” accessed February 4, 2021, <https://www.e-flux.com/journal/114/365035/for-an-ecological-realpolitik/>. – China will add 6–8 new nuclear power plants each year in the process, see “China to Dominate Nuclear as Beijing Bets on Homegrown Reactors,” *Bloomberg.Com*, June 1, 2020, <https://www.bloomberg.com/news/articles/2020-06-01/china-to-dominate-nuclear-as-beijing-bets-on-homegrown-reactors>.

¹⁴ See <https://twitter.com/jtemple/status/1352395770243112960>.

¹⁵ Benjamin Bratton, *The Terraforming* (Moscow: Strelka Press, 2019), 16.

¹⁶ The whole suit of sciences and knowledges that allow people to understand human ecology, its interconnections and interactions with nonhuman ecologies and the Earth system at large (like Biology, Ecology, Earth System Science etc.), and hence the cognitive tools to identify, modify and prevent detrimental interactions, is itself a product of carbon capitalism, of its demography, of the prosperity it created.

¹⁷ Vaclav Smil, “To Get Wind Power You Need Oil - IEEE Spectrum,” *IEEE Spectrum: Technology, Engineering, and Science News*, accessed January 20, 2021, <https://spectrum.ieee.org/energy/renewables/to-get-wind-power-you-need-oil>.

¹⁸ @baroquespiral, “7 Points of Green Accelerationism,” <https://baroquespiral.tumblr.com/post/183966564134/7-points-of-green-accelerationism>. Green Accelerationism is the label of some ideas around accelerationism and ecology that have popped up recently (2019/20). The present paper represent a slightly different take on that same motif. See also Celia Sphinxter, “From Green Accelerationism to Appropriate Accelerationism (App/ACC),” *Diffractions Collective* (blog), November 2, 2019, <https://diffractionscollective.org/from-green-accelerationism-to-appropriate-accelerationism-app-acc/>; @baroquespiral, “Green Accelerationism: Multicentrism and Multipolarity,”

Diffractions Collective (blog), March 5, 2020, <https://diffractionscollective.org/green-accelerationism-multicentrism-and-multipolarity/>.

¹⁹ For an intro to accelerationism, see Steven Shaviro, *No Speed Limit: Three Essays on Accelerationism* (Minneapolis: University of Minnesota Press, 2015); Robin Mackay and Armen Anessian, eds., *Accelerate: The Accelerationist Reader*, Second edition (Falmouth, UK: Urbanomic Media Ltd, 2017). The term accelerationism was originally coined in Benjamin Noys, *The Persistence of the Negative: A Critique of Contemporary Continental Theory* (Edinburgh: Edinburgh University Press, 2010) and popularized by the 2013 *#Accelerate: Manifesto for an Accelerationist Politics* by Nick Srnicek and Alex Williams (included in the *Accelerationist Reader*).

²⁰ John Asafu-Adjaye et al., “An Ecomodernist Manifesto” (Breakthrough Institute, 2015), <https://doi.org/10.13140/RG.2.1.1974.0646>. Erle Ellis, “The Planet of No Return - Human Resilience on an Artificial Earth,” Winter 2012, <https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-planet-of-no-return>. Ecomodernism as a new environmentalist paradigm was kicked off by Michael Shellenberger and Ted Nordhaus, “The Death of Environmentalism,” 2004, <https://grist.org/article/doc-reprint/>. See also the material on <https://thebreakthrough.org>.

²¹ David Owen, *Green Metropolis: Why Living Smaller, Living Closer, and Driving Less Are the Keys to Sustainability* (London: Penguin, 2011).

²² Linus Blomqvist, Ted Nordhaus, and Michael Shellenberger, “Nature Unbound: Decoupling for Conservation” (The Breakthrough Institute, 2015); Ted Nordhaus, “Must Growth Doom the Planet?,” *The New Atlantis* (blog), accessed February 4, 2021, <http://www.thenewatlantis.com/publications/must-growth-doom-the-planet>.

²³ Stanley Reed, “A Monster Wind Turbine Is Upending an Industry,” *The New York Times*, January 1, 2021, sec. Business, <https://www.nytimes.com/2021/01/01/business/GE-wind-turbine.html>; “Boxing Day Sets New Record for Wind Power Generation in Britain,” *The Independent*, December 28, 2020, <https://www.independent.co.uk/climate-change/news/wind-power-record-britain-boxing-day-b1779523.html>.

²⁴ “Startup Backed by Billionaires Creates Superhot Solar Power,” *Big Think*, November 21, 2019, <https://bigthink.com/surprising-science/startup-backed-by-billionaires-superhot-solar-power?rebellitem=2#rebellitem2?rebellitem=2>.

²⁵ See <https://energycentral.com/c/ec/future-energy-why-power-density-matters>.

²⁶ James E. M. Watson et al., “The Performance and Potential of Protected Areas,” *Nature* 515, no. 7525 (November 2014): 67–73, <https://doi.org/10.1038/nature13947>.

²⁷ Holly Jean Buck, *After Geoengineering: Climate Tragedy, Repair, and Restoration* (London ; New York: Verso, 2019); J. P. Sapinski, Holly Jean Buck, and Andreas Malm, eds., *Has It Come to This? The Promises and Perils of Geoengineering on the Brink*, Nature, Society, and Culture (New Brunswick, Camden: Rutgers University Press, 2020).

²⁸ Jesse Ausubel, “The Liberation of the Environment”, in Jesse Ausubel, H. Dale Langford, and National Academy of Engineering, eds., *Technological Trajectories and the Human Environment* (Washington, D.C: National Academy Press, 1997), 1–13.

²⁹ While climate change figures prominently in the aforementioned *Accelerationist Manifesto* [FN. X] (“Most significant is the breakdown of the planetary climatic system. In time, this threatens the continued existence of the present global human population.”), the *Manifesto* remains conspicuously silent on accelerationist approaches towards it – possibly because it has not yet quite seen through the ‘paradox.’

³⁰ Leigh Phillips, *Austerity Ecology & the Collapse-Porn Addicts: A Defence of Growth, Progress, Industry and Stuff* (Winchester, UK ; Washington, USA: Zero Books, 2015). Cf. Kevin Kelly, *What Technology Wants*, A Penguin Book Technology, Science (New York Toronto London: Penguin books, 2011).

³¹ Bratton, *The Terraforming*, 60.

³² Linus Blomqvist, Michael Shellenberger, and Ted Nordhaus, “Planetary Boundaries: A Review of the Evidence,” *The Breakthrough Institute*, 2012, https://thebreakthrough.org/archive/planetary_boundaries_a_mislead, 34. Ciara Raudsepp-Hearne et al., “Untangling the Environmentalist’s Paradox: Why Is Human Well-Being Increasing as Ecosystem Services Degrade?,” *BioScience* 60, no. 8 (September 2010): 576–89, <https://doi.org/10.1525/bio.2010.60.8.4>.

³³ Leigh Phillips, *Austerity Ecology & the Collapse-Porn Addicts: A Defence of Growth, Progress, Industry and Stuff* (Winchester, UK ; Washington, USA: Zero Books, 2015); emphasis added.

³⁴ Steven Pinker, *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress* (New York: Viking, 2018).

³⁵ “All the Stuff Humans Make Now Outweighs Earth’s Organisms,” *Wired*, accessed February 4, 2021, <https://www.wired.com/story/all-the-stuff-humans-make-now-outweighs-earths-organisms/>.

³⁶ Cf. Phillips; cf. Malm, “Planning the Planet: Geoengineering Our Way Out of and Back into a Planned Economy”; Leigh Phillips and Michal Rozworski, *The People’s Republic of Walmart: How the World’s Biggest Corporations Are Laying the Foundation for Socialism* (London ; New York: Verso, 2019). “Planning the Earth System,” The Breakthrough Institute, accessed February 4, 2021, <https://thebreakthrough.org/journal/no-11-summer-2019/planning-the-earth-system>. See Bratton, *The Terraforming*, 60.

³⁷ Phillips, *Austerity Ecology & the Collapse-Porn Addicts*.

³⁸ “Confronting Carbon Inequality,” Oxfam Media Briefing, 21 September 2020, 2; <https://www.oxfam.org/en/research/confronting-carbon-inequality>

³⁹ “[W]e’ve got to be talking about taxes ... all the rest is bullshit” Guardian News, *Rutger Bregman Tells Davos to Talk about Tax: ‘This Is Not Rocket Science,’* 2019, <https://www.youtube.com/watch?v=P8ijiLqfXP0>. See also Aaron Vansintjan, “Accelerationism... and Degrowth? The Left’s Strange Bedfellows,” Institute for Social Ecology, September 28, 2016, <https://social-ecology.org/wp/2016/09/accelerationism-degrowth-lefts-strangest-bedfellows/>.

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⁴³ Ellis, “The Planet of No Return.”

⁴⁴ Johan Rockström et al., “A Safe Operating Space for Humanity,” *Nature* 461, no. 7263 (September 2009): 472–75, <https://doi.org/10.1038/461472a>.

⁴⁵ On Geopower, see Daniel Falb, “Poetik für Anthropozän Institutionen,” *Edit* 80, 40–57.

⁴⁶ Shaviro, *No Speed Limit*.

⁴⁷ Andreas Malm, *Corona, Climate, Chronic Emergency: War Communism in the Twenty-First Century*, First edition paperback (Brooklyn: Verso Books, 2020). See also <https://www.theclimatemobilization.org>.

⁴⁸ “Singapore Approves Lab-Grown ‘chicken’ Meat,” *BBC News*, December 2, 2020, sec. Business, <https://www.bbc.com/news/business-55155741>.