Synthesis

Dyrehaugen Web Notebook

2023-12-09

Contents

1

THE FUTURE OF OUR WORLD

This web-book is an effort to synthesize the tremendous research reported on other Dyrehaugen sites (See Appendix B for the sites list). As always: this is Work In Progress - expect changes and updates.

2

OVERVIEW

In my youth a wise teacher taught me that *history is the resultant in the parallogram of opposing forces.*

After retirement I started *looking back* on how the world had moved in my lifetime - and found *tremendeous change.*

Entering old age I am searching for *wisdom* - the reasons and forces behind all this change - and I basically found *modernity* or more specifically *capitalism.*

Preparing to leave this world I get *concerned* about the *violence of the current driving forces of development.*

I now feel *responsibility* for what my generation has achieved to put in motion - and *guilt* for the damage to come.

- We are headed for *+4C in this Century.*
- We are headed for *The 6th Mass Extinction.*
- We are headed for *Civilizational Breakdown.*
- We are headed for *Transition away from Capitalism.*
- We are headed for *Emergence of Eco-Socialism.*

2.1 On Climate

The world is *heating* - and has been doing so for all my lifetime. As climate change becomes *observable* we are slowly waking up from our *industrial business*.

But the observed warming is only the *precursor* - the canary in the mine - of what is in the *pipeline* of global warming.

The climate system is full of *lags* and *feedbacks*. What we in our ignorance have ignited will spill out long after science understood what was happening. The lagged effects of what we have already completed will stay with us however much we now regret.

Ironically - as our fight against atmosperic pollution helps improve health - the clearer sky accelerates global warming. We are headed for *+4C in this century*.

2.2 On Nature

Wild mammal biomass has declined by 85% since the rise of humans.

The Living Planet Index tells us that studied animal populations have seen an average decline of 68% since 1970.

We are headed for *The 6th Mass Extinction*

2.3 On Civilization

Enlightenment brought us *science* - the explanations of the links between *causes* and *effects*.

Enlightenment also brought us *democracy* and the *rule of law*.

As *feudalism* vaned, *capitalism* took hold.

Accumulation entered center stage.

Industrial business became the name of the game.

Conquistadors and *colonialism* after the *great exploarations* brought us *raw-materials* and *slavery* to found the new *Western Civilisation*.

Energy and *technology* merged to boost *development*.

The *four cheaps* - cheap labour, cheap food, cheap energy, cheap raw-materials - build *modernity* and the *population explosion*.

As Capitalism was build the Labour Movement's rise became a threat. Capital bribed Labour with the *class-compromise* and secured the system - for a while.

More recently, neo-liberialism broke Labour and created the *New Inequality* - a society of the super-rich and the precariate.

Despite *financial crises* Capitalism has thrived for all my lifetime. Capitalism as an era of free nature and free atmosphere is now hitting the wall.

No longer so: Capitalism's boom has spawned failures of systemic context. The so-called green revolution of food solutions has produced a lot of food and made profits for large corporations, but depleted soil nutrients, spread toxins, severed mycelial networks, and disrupted nutrient cycles, creating eutrophic lakes and dead zones in our oceans.

Capitalism is up for a reckoning - cheap nature is striking back on modernity.

We are headed for *Civilizational Breakdown*.

2.4 On Transition

Progress without Growth

The ongoing *Great Acceleration* with loss of biodiversity, climate change, pollution and urban expansion is inherent to capitalism as an economic system.

Doughnut economics, post-growth and degrowth are new ideologies that challenge mainstream conceptions of economic growth and offer valuable insights, but without breaking the current societal order.

But 'Green transition' to sustainability is an illusion. Decoupling of GDP-growth and resource consumption at a global level is not possible.

Technological change combined with voluntary changes in consumption and social practices are efforts to reduce the pressure on climate and nature while staying within the current economic order - it may dampen and delay the breakdowns.

Economic Growth - Capitalistic Accumulation - is a defining characteristic of Western Civilisation. As long as Capitalism prevails the breakdowns of Climate and Nature will go on.

But in the end broken climate and nature will undermine continued accumulation. Capitalism is over when economic growth stops.

New cultures, politics and institutions will have be be build democratically on the ruins of Capitalism.Change requires us to address these barriers democratically. Communities that live simply offer inspiration for social innovation in the new era.

The ongowing debate moves on an *idealistic* level:

> "societies need to *rethink* what is meant by growth and progress and their meaning for global sustainability"

and stops there!

Progress without Capital

The deep structural changes needed affects the *constituting features of Capitalism.*

This means *depowering* today's capitalists - and *empower* a new breed of *sustainabilitilists.*

Doughnut economy and degrowth are preludes to the required abandonment of capital accumulation.

We are headed for *Transition away from Capitalism.*

2.5 On Emergence

Capitalism has created problems that cannot be solved by - Capitalism!

> I remember thinking, in the 1970s, that once people became aware of the ecological crisis — disappearing species, polluted rivers, poisoned air — that the necessary changes would be simple to achieve. Humanity only had to curb industrial waste and destruction, preserve wilderness for other species, put limits on our consumption, stabilize human population, and just be smart about how to live on Earth without destroying it. Of course, I was naive to think any of that would be easy.
>
> Since that time, human population has doubled, consumption of material resources has quadrupled, biodiversity collapse has accelerated, and after 34 international climate meetings, we are emitting more carbon than ever before. Meanwhile, we have not exactly ended war, vanquished racism, nor achieved gender or economic parity. Even worse, giant corporate interests actively work to halt and reverse any ecological regulation on industrial activity. (Weyler (2020) Thresholds, cascades, and wicked problems[1])

We are in a war-like situation and need war-like instruments. The neo-liberal ideology of always relaying on *markets* has brought us the problems - and are unfit to correct them.

We have to scrap standard economists mode of thinking about *steering through incentives and nudging*.

We do not have the time for designing sophisticated *indirect* measures.

We know what the problems are and have to attack them *directly*. This means *New Economic Planning*.

We are headed for the emergence of a new civilization: *Eco-Socialism*.

[1] https://mahb.stanford.edu/blog/thresholds-cascades-and-wicked-problems/

2.6 Figures

2.6.1 Climate

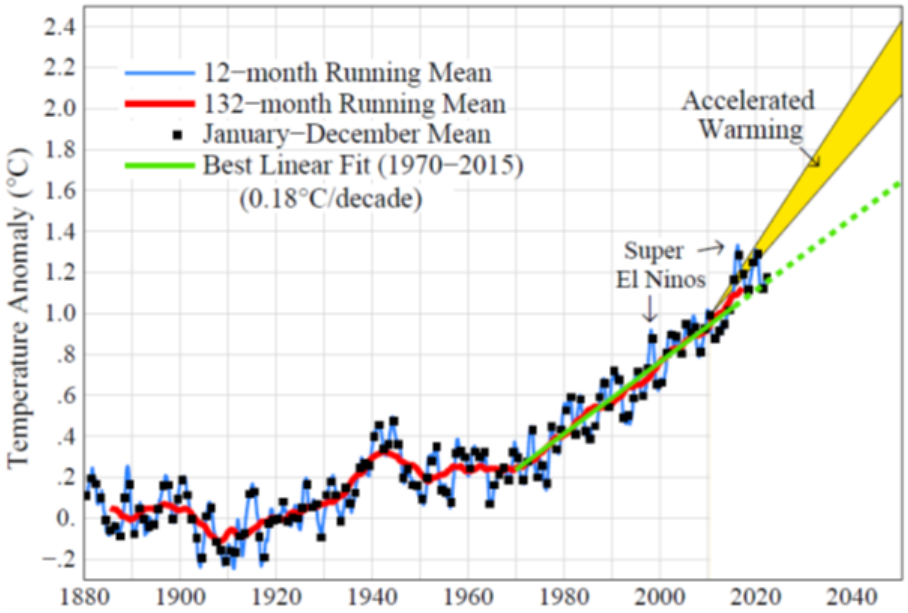

Fig: Accelerated Warming in the Pipline.[2]

[2]https://mailchi.mp/caa/earths-energy-imbalance-and-climate-response-time (Hansen (2022) Global Warming in the Pipeline (pdf) gives the broader background.)

2.6.2 Nature

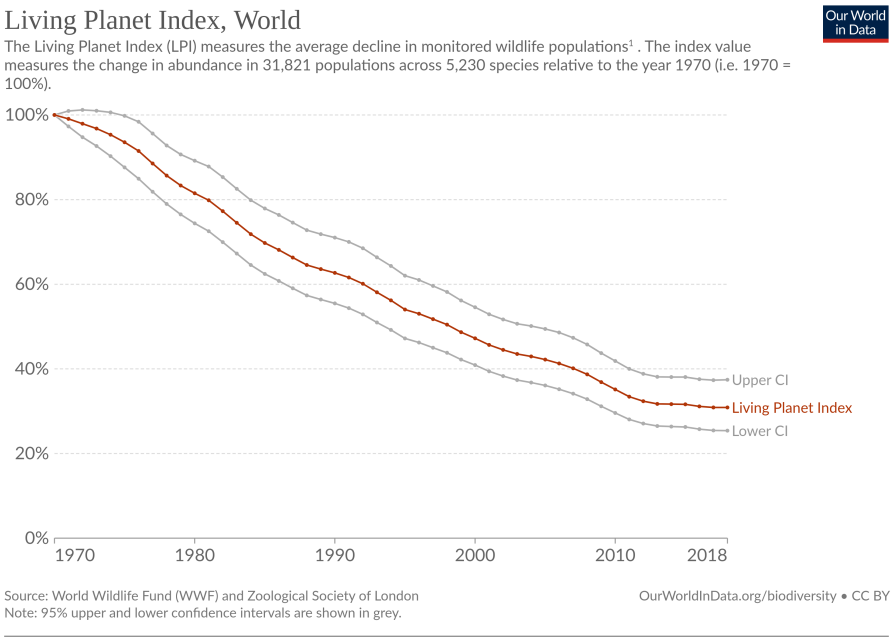

Fig: The Living Planet Index tells us that studied animal populations have seen an average decline of 68% since 1970[3]

[3] https://ourworldindata.org/grapher/global-living-planet-index

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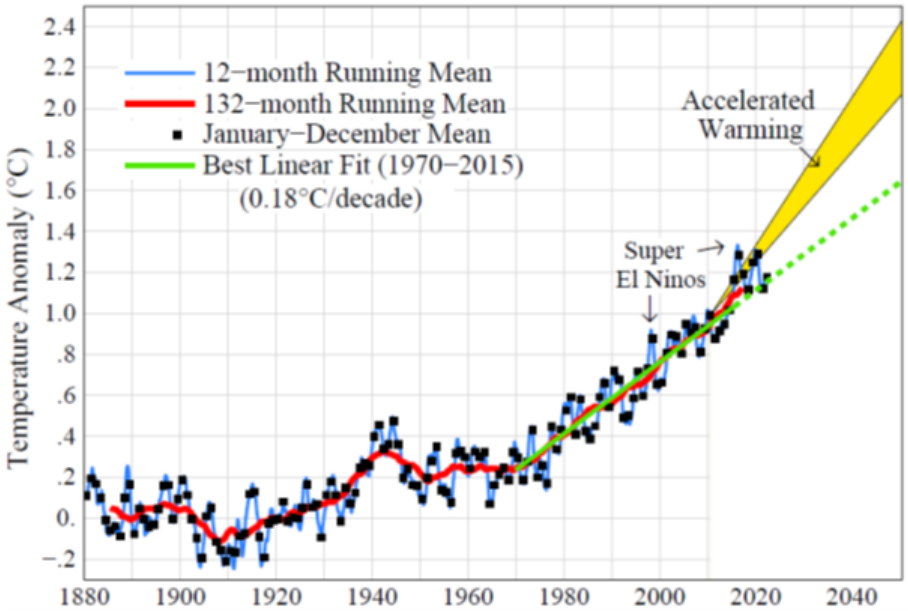
3.1 Earths Energy Imbalance

https://mailchi.mp/caa/earths-energy-imbalance-and-climate-response-time

3.2 Figures

3.2.1 Warming



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4.1 Mass Extinction

4.2 Urban Expansion

4.3 Land Degradation

In the last 30 years, humans have cut down 420 million hectares of forest. That's an area larger than the European Union.

Between 20-40% of the global land area is degraded or degrading. (jason Hickel toot ref UNCCD)

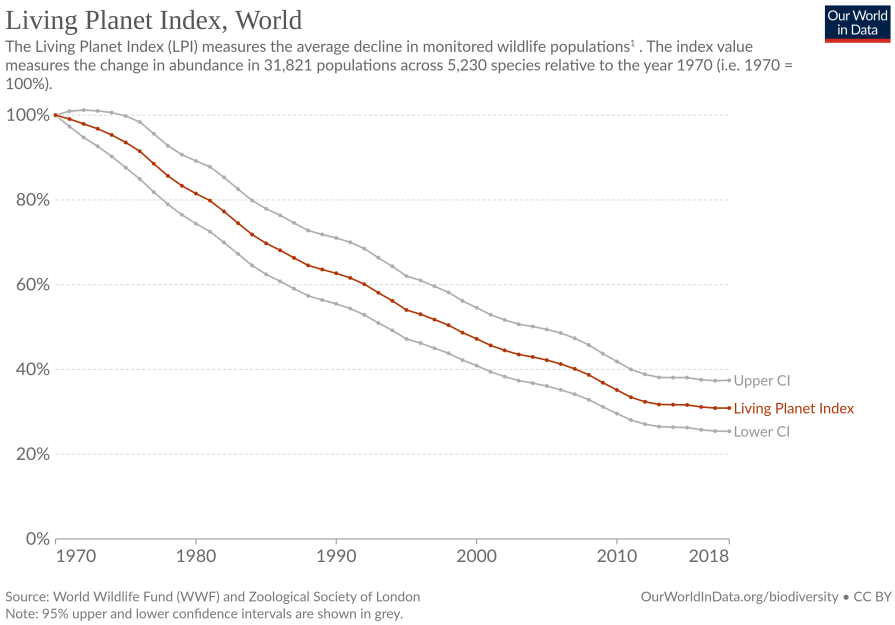
Of nine planetary boundaries used to define a 'safe operating space for humanity', four have already been exceeded: climate change, biodiversity loss, land use change, and geochemical cycles.

(UNCCD Global Land Outlook 2022)

4.4 Rewilding

4.5 Figures

4.5.1 Mass Extinction



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MEMO CIVILIZATION

☐ This should be about capitalism proper - imminent contradictions choking it

☐ Schwartz on finanzialisation

☐ Emergence of non-capitalist spheres within dying capitalism

☐ Willfull/revolutionary killing of the beast vs suicide vs strangulation by nature breakdon.

☐ With the onset of globalization, the system is running out of new ecosystems.

☐ x

☐ x

☐ x

☐ x

5.1 Strangulated Accumulation

Traditional fordist manufacturing has in recent decades been surpassed by monopolies based on intellectual property rights (IPR).

The fordist regime was based on control over physical capital embedded in vertically integrated company structures with many employees and strong labour unions. Success in this era required wage/profit sharing and continous investment to maintain market power.

The IPR regime comprises vertically disintegrated company structures with few employees ('Franchise era'). IPRs generate monopoly rents with no need to share profits or invest to maintain market power.

Today, in the franchise era, firms with large profits don't need to invest while firms that might invest are starved of profits.[1]

5.2 Financialization

Profits from the non-reinvesting firms are funneled into bloated financial intermediaries.

5.3 Globalization

These financials search for unrelated investment opportunities globally.

5.4 Decline of Profit Rate

Growing financial flows with limited real-economy investmest opportunities brings down the economy-wide profit rate and strangulates economic growth in the advanced countries.

(Roberts:)

5.5 New Imperialism

The new empires (US/EU, China/Russia, India) will compete for access to investment opportunities worldwide.

The Ukraine war may be seen as the first of many new imperial wars to come.

5.6 The four cheaps

Jason Moore

[1] Schwartz (2022)Global secular stagnation and the rise of intellectual property monopoly

5.7 Externalities

Khachiyan - Convolution Neural Network analysis of economic growth (zecon/AI) (Ref. jtw - comment on Noah Smith) [Growth eats nature!]

Ecological Footprint vs HDI (fig)

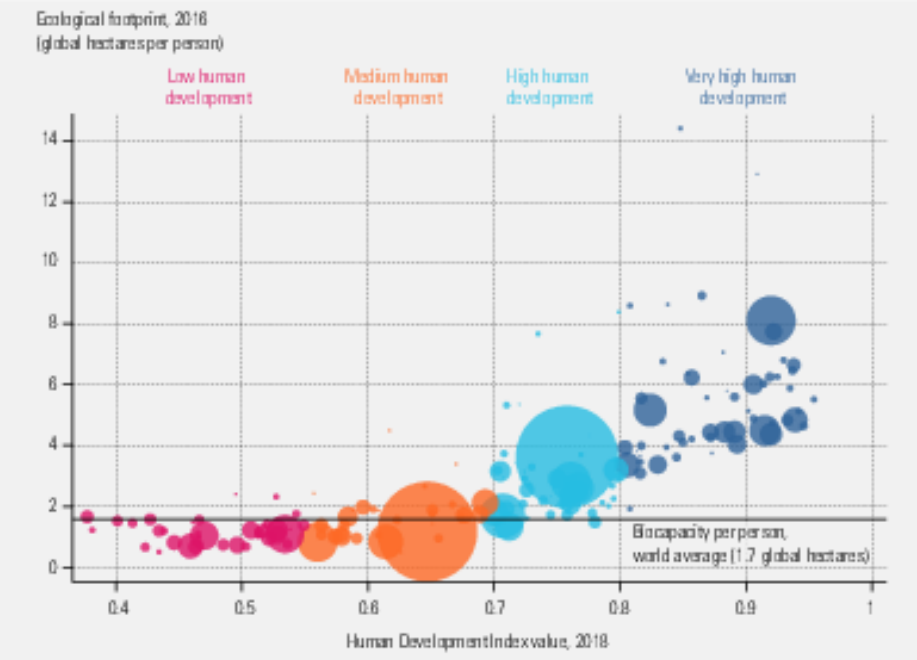
5.8 Inequality

As driver of breakdown!

5.9 Figures

5.9.1 Externality Denial

Per capita ecological footprints increase with human development



Note: Covers 175 countries in the Global Ecological Footprint Network database (www.footprintnetwork.org/resources/data/, accessed 17 July 2018). As used here, the ecological footprint is a per capita measure of how much area of biologically productive land and water a country requires, domestically and abroad, to produce all the resources it consumes and to absorb the waste it generates. Each bubble represents a country, and the size of the bubble is proportional to the country's population.
Source: Cumming and von Cramon-Taubadel 2018.

6

Collapse

> "What looks like apocalypse in prospect often feels more like grim normality when it arrives in the present." - David Wallace Wells

Welsh

This year has seen the constant shattering of temperature records. Temperatures in the high thirties, in winter, have been common.

The majority of the Mediterranean is going to be uninhabitable without air conditioning for months every year. This includes North Africa and the European areas. The same will be true of most areas of the tropics. Time scale is ten to fifteen years.

Because climate change includes weather instability, it will become impossible to get property insurance in increasing areas, starting with the coasts and areas prone to wildfires.

Wildfires will continue until the ecology of areas has changed to one suitable to their new temperature and rainfall pattern.

In the short to mid term, there will be a lot of river floods, then rivers based on snow pack or coming from glaciers will reduce in size or dry up. Most of the world's aquifers are drained, and many are poisoned. This means vast areas will become unsuitable for agriculture, which will lead to genuine food shortages. We haven't had those in a long time, our current shortages are because we can't be bothered to distribute food, of which we have great excess. But by 2030 we'll see some real famines, and by 2040 almost everyone's going to be eating less, even if they aren't going hungry.

The oceans will become increasingly lifeless, and most fisheries will collapse. Even sea farming will be difficult, as oxygen content drops and acidification increases. If you're middle aged, you'll see the start of the Sea of Jellyfish. The

real danger is if CO2 fixing and O2 emitting plankton collapse, in which case we'll see some real problems.

On land, the great rainforests will mostly die. This includes the Amazon and Congo. They will be replaced by wastelands, and will be almost impossible to regrow under the new circumstances. This will, again, lead to vast increases in CO2. The effect on Brazil will be catastrophic.

The first ocean inundations will come sooner than almost anyone thinks and low lying countries and areas which have not built sea walls and pumps will go underwater. Bangladesh is a good weather vane here, but the northern Chinese breadbasket is at risk in the second wave.

If this was only about CO2 and global warming the realist optimist types would be right that it'd suck mightily, but whatever. The danger is that we've also go ecological collapse going on. I can't estimate the odds correctly, but collapse of food chains, and in particular collapses of microbes, insects, plankton and so on could lead to drastic issues. The old line is that if the bees go extinct, so do we, but there's a lot more risk than that, and that's the "apocalyptic" scenario.

In your personal life, you should be preparing. Find a way to get your own water, even if it's condensation. Food is important but understand that growing it outside is going to be tricky because of climate instability. Food you can count on will have some form of environmental control.

Expect everything to come in faster than the consensus ICC estimates. They've almost all been wrong to the upside, so consider them the "best case scenario" and don't plan for that.

Climate change and ecological collapse are going to play into geopolitics in a big way. Normally, as I wrote yesterday, the ascendance of China would be all over except the shooting, but China's going to get hit hard. They're not stupid, and they know this. They just penned an absolutely massive deal for food from Russia, for example. But they need to do a lot more, and they and everyone else are going to have to change lifestyles. An economy of millions of cars, with sprawling cities makes no damn sense if the future that is coming.

Refugee waves are going to be absolutely massive, with hundreds of millions of people on the move. Multiple countries will collapse into warlordism and anarchy. There will be real revolutions, with elite murdered en-masse, because when people start starving and going without water, they will freak.

There just isn't going to be enough to go around, it's that simple.

If you want to survive, beyond the obvious, make friends and join or create strong community groups. You want a lot of people to like you and want you to live. Find a way to be useful, if possible, too. Plumbers and handymen and makers will be taken care of.

This is still some ways off, but understand clearly, civilization collapse has started, we are past the peak and past the point where we can stop it with any

actions which it is even slightly conceivable we are capable of taking politically.
Welsh (2023) Climate Change and Environmental Collapse

7

TRANSITION

INTRO

Progress without Growth

The ongoing *Great Acceleration* with loss of biodiversity, climate change, pollution and urban expansion is inherent to capitalism as an economic system.

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MEMO TRANSITION

- ☐ This should be about transition proper - i.e. the period between Titanic hit the iceberg untill it disapears in the deep watched by the survivivors from their lifeboats.
- ☐ Quick/Abrupt vs Protracted/Long transition
- ☐ Emergence of non-capitalist spheres within dying capitalism
- ☐ Willfull/revolutionary killing of the beast vs suicide vs strangulation by nature breakdon.
- ☐ Social movements are to weak to raise eco-socialism today. Will have to wait for breakdown events that adds support to movement. Which event could that be?
- ☐ that which does not confront the system becomes its instrument
- ☐ elected governments should abolish poverty through a citizens income scheme, regulate against social and environmental malpractice and encourage environmental good practice through state procurement. At the same time, economic and political power should be devolved as far as is possible through co-operatives and increased local decision making. By putting political and economic power into the hands of the people most likely to be affected by environmental injustice, it is less likely that the injustice will take place.
- ☐ the alternatives will emerge in the struggle.
- ☐ Criticall mass - how can it be assessed. Speed of change. Acceleration?
- ☐ Indicators of speed of change / critial mass?
- ☐ Rød tråd: Energi ! Hall-Klitgaard
- ☐ "We define a global polycrisis as any combination of three or more interacting systemic risks with the potential to cause a cascading, runaway failure of Earth's natural and social systems that irreversibly and catastrophically degrades humanity's prospects…A global polycrisis, should it occur, will inherit the four core properties of systemic risks—extreme complexity, high nonlinearity, transboundary causality, and deep uncertainty—while also exhibiting causal synchronization among risks." https://boharvey.substack.com/p/on-the-polycrisis-part-i "there is no single vital problem," yet simultaneously, "the general crisis of the planet is the number one vital problem A world subsumed by polycrisis becomes a kind of nightmarish 'emergent system, A more worthwhile critic is Guney Isikara, who argues that 'obscure jargon' like 'overlapping emergencies' (a term adopted by the UN)13 and 'polycrisis' function primarily to conceal the way in which these crises are determined by capitalist social relations. https://developingeconomics.org/author/guneyisikara/

- ☐ stricter constraints on private actions
- ☐ escape the expansionary and accelerating dynamics of the capitalist economic 'by design, not disaster' (se durand_2023)
- ☐ complexity tainter energy EROEI: we cannot expect ever-higher levels of complexity to always be achievable. (tverberg) According to Tainter, energy and complexity build on each other. At first, growing complexity can be helpful to a growing economy by encouraging the uptake of available energy products. Unfortunately, this growing complexity reaches diminishing returns because the easiest, most beneficial solutions are found first. When the benefit of added complexity becomes too small relative to the additional energy required, the overall economy tends to collapse–something he says is equivalent to "rapidly losing complexity." simplification usually doesn't happen voluntarily. growing complexity is seductive; the overall cost of complexity tends to grow over time.
- ☐ left productivism - left libertarianism (Schmelzer intro)
- ☐ changed metabolism !!!
- ☐ changed property rights
- ☐ The whole of capitalism has to be pulled down. Else the evil will bounce back see https://noahpinion.substack.com/p/europe-is-not-ready-to-be-a-third : There's a parable we tell ourselves about the Ming and Qing dynasties that ruled China from 1368 to 1911. The conventional wisdom is that during this period, China turned its back on the outside world and on new technologies, choosing instead to look inward and cultivate a tranquil, harmonious, static society. The Ming burned their oceangoing ships in the 1500s and sealed the country off from most trade. In 1793, the Qing emperor declared to a British trade mission that "Our Celestial Empire [has] no need to import the manufactures of outside barbarians." That isolationism was brought to an abrupt end when China's technological backwardness and military weakness made it incapable of resisting foreign aggression in the 1800s, leading to the "century of humiliation". That is the story we like to tell, and perhaps there's some truth in it. But even if it's just a fable, Europe seems in danger of making that sort of mistake in the modern day. It risks becoming a backward but tranquil society, smug in its relatively high quality of life, refusing to engage with what Macron calls "crises that are not ours". That strategy might work for a while, as France and Germany buy off the Russian barbarians and make a quick buck selling a century of accumulated technological leadership to the Chinese at bargain-basement prices. But in the long run, a decline into weakness, irrelevance, and backwardness will not work out for Europe any better in the 21st century than it did for China in the 19th. The consequence won't just be the failure of Macron's ridiculous dreams of being a "third superpower". Someday someone will show up on Europe's

doorstep who can't easily be bought off, and the era of harmonious stasis will come to a nasty end.

- ☐ Branko on Turchin 'End Notes': https://branko2f7.substack.com/p/the-chronicle-of-the-revolutions : Turchin's model of decay has one variable: inequality in income or wealth. That variable which is often adduced as a source of political discord is given a very concrete meaning by Turchin. (Here, I have to mention the often uncomfortable personal experience when people keen to praise my work on inequality would claim that it is important because high inequality leads to social conflict, yet without either them or me being able to pinpoint exactly how it does it. Now, Peter Turchin comes with an explanation). Rising inequality means by definition that the median-income person will fall further behind the mean-income person, and increasingly behind the top 10% or the top 1 percent. The median-income person could be, as in today's United States (a county to whose analysis most of the book is dedicated), an insufficiently credentialed manufacturing or service sector worker; or it could be a semi-skilled laborer in the 19th century Great Britain, or a small landholder in the 1830s France and 1850s Russia. Thus, precise occupation or class does not matter: income position does. What happens on the top of income distribution? Increased inequality means, again by definition, that people at the top are getting richer compared to the rest, or put differently, that the advantage of being in the top decile or top percentile is increasing. This, as every economist knows, implies that the "demand" for such top slots will go up. If the elite (the top decile or the top percentile) is composed, as in today's US, of executives, investment bankers, corporate lawyers there will be an increasing attempt to study the most lucrative fields and to adopt the type of behavior (including the beliefs) most likely to lead to joining the elite. If more people do so than there are numbers of elite positions, a game of empty chairs follows. Not everyone among the aspiring elite will make it. The split in the elite, created by the disappointed would-be elite fighting for top positions, comes next.

  In conditions where (a) the distance between the median and the top goes up (what Turchin calls "immiseration" although it is important to note that this is a relative immiseration; i.e., the median-income person can in real terms become better off), and (b) there is elite overproduction, a pre-revolutionary situation ensues. Immiseration is not enough. To produce a breakdown, we have to have different elites fighting each other, with one of them enlisting the support of the "people" (or others) in order to win.

END MEMO

7.1 Development Dynamics

It always seems impossible, untill it's done.(Neslon Mandela)

Modern society has been able to grow far beyond Earth's carrying capacity by using nonrenewable resources.

Civilizations are fragile, impermanent things.

7.1.1 Collapse of Societies

Societies become more complex as they try to solve problems.[1] Social complexity can be recognized by numerous differentiated and specialised social and economic roles and many mechanisms through which they are coordinated, and by reliance on symbolic and abstract communication, and the existence of a class of information producers and analysts who are not involved in primary resource production. Such complexity requires a substantial "energy" subsidy (meaning the consumption of resources, or other forms of wealth).

When a society confronts a "problem," such as a shortage of energy, or difficulty in gaining access to it, it tends to create new layers of bureaucracy, infrastructure, or social class to address the challenge.

Sustainability or collapse of societies follow from the success or failure of problem-solving institutions. Societies collapse when their investments in social complexity and their energy subsidies reach a point of diminishing marginal returns. Collapse occurs when a society involuntarily sheds a significant portion of its complexity.

7.1.2 State Crisis

Increasingly deminishing returns on exploitation of natural resources trigger state crises.[2]

Societies invest in increasing complexity of organisations to solve problems- requiring increasing amounts of energy for their maintenance. At the point where additional complexity costs more energy than it returns, societies are no longer able to solve their problems via more complexity. Complexity becomes a less attractive strategy, and some parts of society may make efforts to break away since secession and rebellion become more attractive. As productive capacity and accumulated surpluses decline, there are fewer reserves with which to deal with any shocks that occur.

Growing awareness of the finiteness of sources and sinks leads to more conflicts, social polarisation and political instability.

[1] Joseph Tainter (1988) The Collapse of Complex Societies (pdf)

[2] Hartley (2022) State crisis theory: A unification of institutional, socio-ecological, demographic-structural, world-systems, and peace and conflict research (pdf)

There are two broad kinds of crises: those that occur in conditions of ecological-economic sufficiency, and those that occur in conditions of worsening scarcity.

Scarcity crises occur when population growth and intensification leads to environmental degradation, in turn leading to increased conflict

State crises arise when the state starts to become perceived as ineffective or unjust, i.e. the legitimacy of state structures declines.

Disruption and diversion of trade flows may sharpen crisis

Potential outcomes of state crisis are:

- Repression
- Coup
- Entrenchment (of the elite)
- Reform
- Civil war
- Breakdown, conflict becomes protracted, violent, and divisive.
- Collapse, extensive depopulation, socio-political devolution, and loss of culture.

Breakdown and collapse are violent processes.

Prefigurative steps (from ecs - to be edited)

To get to an eco-socialist society, eco-socialists advocate working-class anti-capitalist
resistance but also believe that there is potential for agency in autonomous, grassroots
individuals and groups across the world who can build "prefigurative" projects for non-v
iolent radical social change.

Revolution

These prefigurative steps go "beyond the market and the state" and base production on the enhancement of use values, leading to the internationalization of resistance communities in an 'Eco-socialist Party' or network of grassroots groups focused on non-violent, radical social transformation. An 'Eco-socialist revolution' is then carried out.

Critical Mass

The main prefigurative steps "are that people ruthlessly criticize the capitalist system…. seizing the mind of the masses of people", leading to "dynamic" and "exponential", rather than "incremental" and "linear", victories that spread rapidly.

Activities that have the "promise of breaking down the commodity form". This includes organizing labor, which is a "reconfiguring of the use-value of labor

power"; forming cooperatives, allowing "a relatively free association of labor"; forming localised currencies, which "undercuts the value-basis of money"

Building prefigurations around forms of production based on use values, which will provide a practical vision of a post-capitalist, post-statist system.

"go beyond the market and the state" by rejecting the supposed dichotomy between private enterprise and state-owned production, while also rejecting any combination of the two through a mixed economy. These present forms of "amphibious politics" are "half in the dirty water of the present but seeking to move on to a new, unexplored territory.

Open-source software, for example, opens up "a new form of commons regime in cyberspace", is production "for the pleasure of invention" that gives "access to resources without exchange".

Open source software has "bypassed" both the market and the state

A reform of the nature of money and the formation of a World People's Trade Organisation (WPTO) that democratizes and improves world trade through the calculation of an Ecological Price (EP) for goods.

Followed by a transformation of socioeconomic conditions towards ecological production, commons land and notions of usufruct (that seek to improve the common property possessed by society) to end private property.

Wesley[3]

Human design and planning models are only beginning to glimpse how we might interact with these dynamic features of ecosystems and social systems, with, for example, flexibility and adaptive preparedness.

"Wicked problems" that defied linear solutions, contained contradictions, and implied solutions that may create or aggravate other problems. The climate crisis presents a wicked problem, beset with social, political, ecological, economic, thermodynamic, and chemical complexity, involving lags, thresholds, and feedbacks.

7.1.3 Rise and fall of market dominance

Development cycle of market based societies[4]

1. Markets emerge in an equitable setting and grow by creation of institutions that secure easy access to broad groups.

2. The opportunities of market exchange push up economic growth and well-being as long as the fruits of growth are fairly evenly distributed.

[3] Wesley (2020) Thresholds, cascades, and wicked problems
[4] van Bavel (2019)

3. As markets become dominant - especially the markets for land, labour and capital - inequality grows in a slow process as ownership of land and capital concentrates.

4. As inequality grow, economic growth initially continues, but to a lesser degree get translated into broad well-being. Purchasing power stagnates for large parts of the population. Shrinking demand and declining profitability shift investments to financial markets away from productive sectors.

5. Wealth is instead used to acquire political leverage through patronage and buying political positions. Through their dominance in financial markets and their role as creditors of the state the wealthy acquire key positions in the fiscal regime, bureaucracy and finance.

6. Over time markets become less open and equitable, through both large wealth owners' economic weight and their ability to skew the institutional organization. Productive investments declines and the economy stagnates. Economic inequality rises further, feeding into growing political inequity and social unrest, resulting in coercion, rebellion and breakdown.

After breakdown the process starts to build up anew from a position of more equal distribution of wealth and power.

7.1.4 Socio-environmental interaction

Complex systems modelling can reveal new and complex patterns and processes not evident when studied partially. Nonlinear systems often feature important dynamics which would be missed without bidirectional interactions between subsystems.

By adding accumulated wealth and economic inequality to a predator–prey model of human–nature interaction Motesharrei et al.[5] developed a two-way coupled Human and Nature Dynamic model. The model shows that both economic inequality and resource overdepletion can lead to collapse, in agreement with the historical record. If total consumption does not stay within the carrying capacity collapse will emerge.

Results from the model show that an unsustainable scenario can be made sustainable by reducing per capita depletion rates, reducing inequality to decrease excessive consumption by the wealthiest, and reducing birth rates to stabilize the population. If such changes cannot be made in time, collapse will occur.

Thus timing of counteractions to the current development is critical. When we are too late breakdown is imminent.

[5]Motesharrei (2014) Human and nature dynamics (HANDY): Modeling inequality and use of resources in the collapse or sustainability of societies (pdf)

7.2 Transition

> Local populations in many cases greeted the barbarians as liberators.
> (Wikipedia / Tainter on Collapse of Roman Empire)

7.2.1 Breaking up trade patterns

The global economy is split regarding how economies and natural resources interact. Two different self-reinforcing feedback regimes exist.[6]

With "green-loop" feedbacks, economies depend directly on local ecosystems with visible environmental impacts.

With "red-loop" feedbacks, economies depend more on distant ecosystems with hidden environmental impacts.

The red loop, occurs when economies industrialize and urbanize. When entering the red loop, the dominant drivers of social–ecological interactions shift from ecosystem- based production (and a strong, direct reliance on local ecosystem services) to nonecosystem-based production, an increasing demand for nonecosystem services, and spatial upscaling of resource use due to increased reliance on nonlocal ecosystem services.

The green loop, occurs when the economies of countries with growing populations remain directly reliant on ecosystem goods. This situation is typical of nations in which a majority of people depend directly on natural resources (e.g., agriculture, forests, or fishing). Increasing populations and traditional cultural practices (e.g., inherited land is divided between surviving children) often lead to reduced per capita resource availability, and typical wealth-generating red-loop industries (e.g., manufacturing, service provision) remain stagnant in a less productive economy.

The red and green loops represent a continuum in their early stages, but they gradually intensify and differentiate.

The coupling between income and population growth pushes countries farther away from sustainability through the red loop.

Economic growth alone cannot lead to environmental sustainability.

Sustainability requires breaking red feedback loops.

7.2.2 Flexible Dynamic Planning

Human design and planning models are only beginning to glimpse how we might interact with the dynamic features of ecosystems and social systems, with, for example, flexibility and adaptive preparedness.[7]

[6] Cumming (2018) Linking economic growth pathways and environmental sustainability by understanding development as alternate social–ecological regimes (pdf)

[7] Wesley (2020) Thresholds, cascades, and wicked problems

Tools for solving ecological problems must account for how living systems possess non-intuitive characteristics.

Living ecosystems are dynamic, always changing, and possess qualities such as thresholds, cascades, feedback loops, tipping points, lags, and generally unintended consequences to input.

Living systems exhibit both patterns and chaos, simultaneously, always changing, but change is neither continuous nor purely chaotic. Rather, change in complex systems appears to fluctuate among long periods of relative stability, punctuated by bursts of rapid change. These systems have no central control, and abrupt shifts can be triggered by a random input Some feedbacks self-regulate, some self-amplify. Events in such systems can stabilize or run out of control. Not all effects are immediately observable; some are delayed by centuries.

Some effects build up slowly over time and eventually reach a biological or physical threshold, a tipping point at which point tiny changes can yield a large and sudden response.

Sometimes random events or tipping points will trigger other tipping points in a cascade of effects similar to a nuclear chain reaction. A cascade can cause a complete, irreversible state shift in a complex system

Government of economies interacting with living ecosystems requires development of a quite new breed of dynamic and flexible planning institutions, methods and tools.

7.2.3 Collective Learning

Our emotional responses to crisis evolved over millennia, primarily to meet immediate needs, perhaps to benefit our tribe or community, not necessarily to solve complex, multi-dimensional, long-term dilemmas. Our ideas about "solutions" tend to be linear, short-term, and linked to a perception of simple cause and effect. Our educational institutions encourage this linear thinking about problems and solutions. Meanwhile, our social and ecological challenges are systemic, multidimensional, and complex.[8]

To avoid this 'lack-of-learning-trap' new institutions to ensure collective learning over generations must be developed - history matters.

7.2.4 Repress re-emergence of capitalism

{Qing/Ming/Macron} Guard out against externality-deniers striking back.

[8] Wesley (2020) Thresholds, cascades, and wicked problems

7.3 Figures

7.3.1 Development Dynamics

7.3.1.1 Rise and fall of market dominance

Stages in development of Market Societies

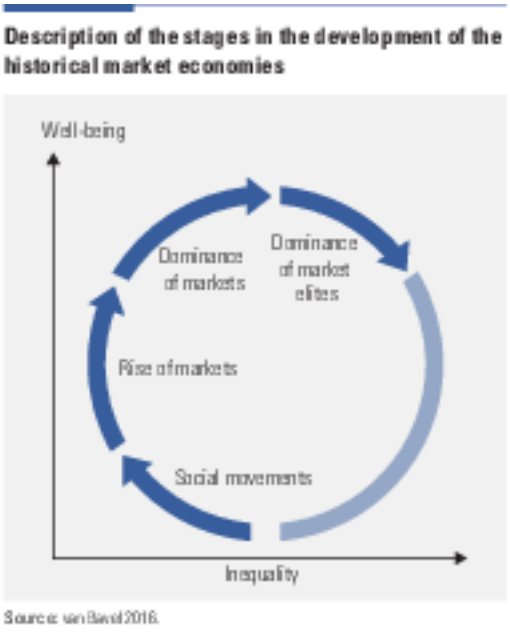
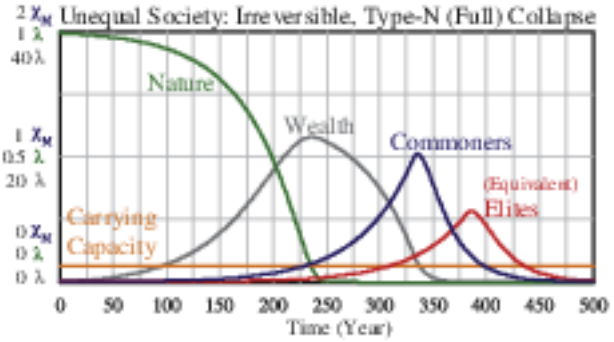


Fig: Description of the stages in the development of the historical market economies. Source: Bas van Bavel (2019) Power concentration and state capture: Insights from history on consequences of market dominance for inequality and environmental calamities. (Spotlight 1.1 in UNDP Human Development Report 2019).

7.3.1.2 Socio-environmental interaction

Emergent Collapse by Depletion and Inequality



b) A fast full collapse due to both over-depletion and inequality ($\kappa = 100$).

Fig: Simulation of Societal Collapse under depletion and inequality.Adding fossil fuels to the model will postpone the collapse by ~200 years and will increase the peak population by a factor of ~20! Reminiscent of the Industrial Revolution![9]

[9]Motesharrei (2014) Human and nature dynamics (HANDY): Modeling inequality and use of resources in the collapse or sustainability of societies (pdf)

7.3.1.3 Breaking up trade patterns

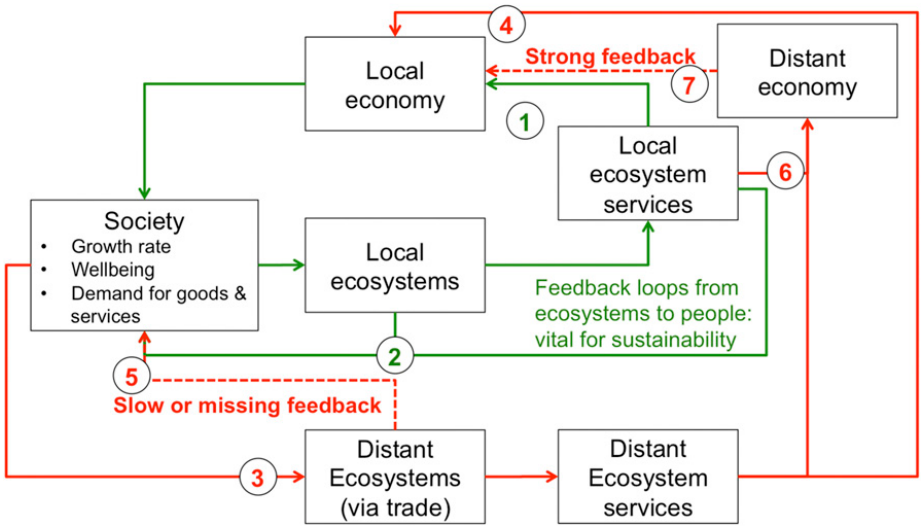


Fig: Local and Global sourcing loops for natural resources[10]

[10] Cumming (2018) Linking economic growth pathways and environmental sustainability by understanding development as alternate social–ecological regimes (pdf)

7.4 Notes

7.5 Links

https://www.eea.europa.eu/publications/growth-without-economic-growth

https://www.pnas.org/doi/epdf/10.1073/pnas.1807026115 (Cumming)

7.6 Pdfs

van Bavel (2019)

7.7 References

8

EMERGENCE

Capitalism has created problems that cannot be solved by - Capitalism!

> I remember thinking, in the 1970s, that once people became aware of the ecological crisis — disappearing species, polluted rivers, poisoned air — that the necessary changes would be simple to achieve. Humanity only had to curb industrial waste and destruction, preserve wilderness for other species, put limits on our consumption, stabilize human population, and just be smart about how to live on Earth without destroying it. Of course, I was naive to think any of that would be easy.
>
> Since that time, human population has doubled, consumption of material resources has quadrupled, biodiversity collapse has accelerated, and after 34 international climate meetings, we are emitting more carbon than ever before. Meanwhile, we have not exactly ended war, vanquished racism, nor achieved gender or economic parity. Even worse, giant corporate interests actively work to halt and reverse any ecological regulation on industrial activity. (Weyler (2020) Thresholds, cascades, and wicked problems[1])
>
> Our emotional responses to crisis evolved over millennia, primarily to meet immediate needs, perhaps to benefit our tribe or community, not necessarily to solve complex, multi-dimensional, long-term dilemmas. Our ideas about "solutions" tend to be linear, short-term, and linked to a perception of simple cause and effect. Our educational institutions encourage this linear thinking about problems and solutions. Meanwhile, our social and ecological challenges are systemic, multidimensional, and complex.

We are in a war-like situation and need war-like instruments. The neo-liberal

[1] https://mahb.stanford.edu/blog/thresholds-cascades-and-wicked-problems/

ideology of always relaying on *markets* has brought us the problems - and are unfit to correct them.

We have to scrap standard economists mode of thinking about *steering through incentives and nudging.*

We do not have the time for designing sophisticated *indirect* measures.

We know what the problems are and have to attack them *directly.* This means *New Economic Planning.*

We are headed for the *Emergence of Eco-Socialism.*

MEMO EMERGENCE

- ☐ *This should be about societal and environmetal developments **after** transition - not about transition itself (prior chapter)*
- ☐ Eco-socialism as something to raise from the ashes of new imperial wars? i.e. no transition phase!
- ☐ Working within the system vs
- ☐ voluntarism = "ecopolitics without struggle" small scale,localized
- ☐ *Critique of bioregionalism* (Kovel) Belief in the self-sufficiency of "appropriate bioregional boundaries" drawn up by inhabitants of "an area". Such ideas are impossible to translate to populations of modern proportions. bioregions that do "not require connections with the outside
- ☐ *Critique of actually-existing socialisms*
- ☐ society an inert mass requiring leadership from above.
- ☐ The guardians of the current system are making sure to protect the modus operandi that has served us, 10% of the world population, for such a long time. Growth, scale, consumption. Repeat. The middle classes of the western world will not start radical system change movements. Why? What is in it for them? How would that improve their life? I think that one of the major flaws of the climate emergency movement across the world, and in the financial so-called ESG world, has been the focus on how to cut CO2 emissions. That is probably the third question to be asked. The first one is: "What is the root cause of the situation we are in?" The second should be: "Who is responsible and accountable?" And then the third question is how to cut CO2 emissions. Which is done by changing the underlying root cause and making people responsible for it to act and assume that responsibility. https://esgonasunday.substack.com/p/week-2-in-a-world-of-contradictions
- ☐ With the onset of globalization, the system is running out of new ecosystems.
- ☐ more important to restructure societies to reduce energy use before relying on renewable energy technologies
- ☐ Marxist aversion to utopian thought, which Neurath saw less as daydreaming than the practical work of building a new society. (Vettese)
- ☐ /home/jmh/zdocs/Themes/Environment/Planning/Combet_2020_Planning_and_Sustainable_Development

- [ ]
- [ ]
- [ ]

8.1 Aim

A good life for all in a society in harmony with nature.

8.2 Scope

When capitalism became global it met global boundaries and broke down. The emergent society willhave to be global - international. - International, i.e. global scope. It has to be international - or it will be nothing.

8.3 Features

8.3.1 Equal

- ownership of the means of production by freely associated producers

8.3.2 Communal

- democratic
- restoring the commons.

8.3.3 Sustainable

- use values, not exchange values

After decades of commodity delirium, a turn to democratic planning—channelling investment according to social need and ecological boundaries—would be the revenge of use value. (Cedric Durand)

- renewable energy cannot power a high-consumption civilization.

8.4 Institutions

8.4.1 Democracy

8.4.2 Economy

BASICS

- renewable energy cannot power a high-consumption civilization.
- sacrificing consumption as a way of life

8.4.2.1 Ownership

Full liability - No more limited liability - no corporate power Joint ownership

8.4.2.2 Planning

> The claim made by the advocates of planning has never been that it will deliver ultimate perfection - the best of all possible worlds - rather it's that planning ought to be able to do better than the market at satisfying the needs of the majority of the population while avoiding the gross inequality generated by the market mechanism, plus that it's arguably better at achieving substantial economic restructuring in a short time.[2]

Planning decisions will be taken directly based on the available productive resources and not some measure of 'value'. The availability of the means of production and labour power constraints a feasible plan. Cybersocialist models rely on computer networks and algorithms to derive an optimal production plan.

Economic planning does not rely on monetary payment or exchange.

?object function?

8.4.2.3 Distribution

Distribution - not exchange

8.4.2.3.1 Vouchers - not money *Dapprich*

Money is thus a kind of IOU issued by the state which circulates in the economy, as it is being used for exchange between private agents and for settling of payments in the private sector.

Socialist labour token proposals suggest that this be done through vouchers or tokens denominated in labour time that can be redeemed for consumer goods of equivalent value. The most influential discussion of this is found in Marx's *Critique of the Gotha Programme*.

Tokens on the other hand, are only or primarily used to mobilise labour for socialised production and to distribute consumer goods out of the social supply of goods to individual consumers.

The token prices of consumer products should not be linked to labour values but should instead be responsive to supply and demand.

Socialised production yields some mix of consumer products. Considering how the collectively produced consumer goods should subsequently be distributed to individual citizens.

Vouchers are not money. They do not circulate.

Tokens are issued to individuals by society or the socialist state and then redeemed for products out of socialised production.

[2] Cockshott (2022) Economic Planning in an Age of Climate Crisis

Cockshott

8.4.3 Defence

{Qing/Ming/Macron} Guard out against externality-deniers striking back.

8.5 Figures

Part I

Appendices

Appendix A

About

Dyre Haugen and *Dyrehaugen* is Webian for *Jon Martin* - self-owned Globian, Webian, Norwegian and Canarian with a background from industrial research policy, urban planning and economic development consulting on global, regional and urban scales. I am deeply concerned about the (insane) way humanity (i.e. capitalism) interfere with nature. In an effort to gain insights in how and why this happens stuff is collected from around the web and put together in a linked set of web-sites. The sites are operated as personal notebooks. However, these days things can be easily published to the benefit of others concerned with the same issues. But be aware - this is not polished for presentation or peer-reviewed for exactness. I offer you just to have a look at my 'work-desk' as it appears in the moment. Any comment or suggestion can be mailed to dyrehaugen@gmail.com You can follow me on twitter as @dyrehaugen. Thanks for visiting!

Appendix B

Links

Current Dyrehaugen Sites:

- rcap - On Capitalism (loc)
- rclm - On Climate Change (loc)
- recs - On Economics (loc)
- rfin - On Finance (loc)
- rngy - On Energy (loc)
- renv - On Environment (loc)
- rsts - On Statistics (loc)
- rtch - On Technology (loc)
- rurb - On Urbanization (loc)
- rvar - On Varia (loc)
- rwsd - On Wisdom (loc)

Blogs:

- rde - Blog in English (loc)
- rdn - Blog in Norwegian (loc)

Discontinued:

- jdt - Collection (Jekyll) (loc)
- hdt - Collection (Hugo) (loc)

Not listed:

- (q:) dhe dhn jrw56
- (z:) rcsa rpad rstart

Appendix C

NEWS

Appendix D

Sitelog

Latest Additions

Bibliography

van Bavel, B. (2019). *Power concentration and state capture: Insights from history on consequences of market dominance for inequality and environmental calamities*, pages 60–63. UNDP.