The Jus Semper Global Alliance

In Pursuit of the People and Planet Paradigm

Sustainable Human Development

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ESSAYS ON TRUE DEMOCRACY AND CAPITALISM

The Most Dangerous Climate Catastrophe Delusions

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uman activities have unequivocally overheated our planet (Lee et al., 2023). According to the sixth and latest report of the United Nations Intergovernmental Panel on Climate Change (IPCC), without radical changes, the current global trajectory of greenhouse gas emissions will lead to an average global temperature increase of 3.2°C above pre-industrial levels by the end of the 21st century (Lee et al., 2023). If this occurs, the lives of almost half of the human population would be threatened (Lee et al., 2023), as large areas of the planet would become uninhabitable. Even though we have had a solid scientific consensus for decades on the causes and consequences of the climate crisis, the increase in emissions has not been slowed, and in fact they are now 60% higher than in the 1990s (Stoddard et al., 2021). Every year, emissions and



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temperature records are broken, and increasingly extreme weather events hit us. In order to change the trajectory we are on, it is necessary to debunk several myths that proliferate, which are listed below (IPCC, 2022).

1. "The crisis can be stopped at any time"

Several climate and biological systems have tipping points, points of no return, or breakpoints. These points are thresholds that, once crossed, would lead to irreversible changes in these systems on human time scales, even if global warming were slowed (Wunderling et al., 2021; Wunderling et al., 2024) (Figure 1). Among the systems with breakpoints

True Democracy and Capitalism

are dieback of the Amazon rainforest, the die-off of low-latitude coral reefs, the loss (melting) of mountain glaciers, the collapse (melting) of several Ice Sheets, including the Greenland and the West Antarctica Ice Sheers, and the collapse of

The more we study these systems, the more we understand how sensitive they are to perturbations. the Atlantic Meridional Overturning Circulation (AMOC), an ocean current that may come to a complete halt, affecting global temperature and rainfall patterns. We have evidence of crossing one such tipping point: that of the West Antarctic Ice Sheet (Naughten et al., 2023). If this is the case, sea levels

would rise by about five meters, displacing about 400 million people, producing flooding, and likely destabilising other global systems. The melting process of this ice sheet may take more than several centuries, but it would be unstoppable. Most worryingly, the more we study these systems, the more we understand how sensitive they are to perturbations. In 2001, the IPCC considered it 'highly likely' to cross tipping points only from an average global warming of 6 °C relative to pre-industrial levels, while the latest IPCC report (published in 2022) warns that this risk exists below 2 °C (we are now at 1.3 °C)."



Figure 1. Example of the two stable states of the Amazon rainforest. After crossing the critical threshold (due to global warming), the Amazon rainforest would change from a rainforest (left side) to a savanna (right side), even if global warming were slowed down or even reversed. Images from: <u>https://www.pexels.com</u>, credit: @tomfisk and @alameenstudios.

2. "The problem is overpopulation"

The extreme levels of social and economic inequalities, where the wealthiest 1 % of the world's population hoards 38% of the wealth and 10% almost 80 % (Chancel et al., 2023), are mirrors of the inequalities in emissions (Figure 2). For example, a person among the world's poorest 4 billion human beings emits less CO2 (the most important and abundant

Lifting everyone living in extreme poverty out of extreme poverty would make no difference to global emissions. greenhouse gas) in a year than is emitted by a person on a commercial transatlantic flight and less than is emitted by a person on a one-hour private flight (Transport & Environment, 2021; Chancel et al., 2023). In fact, lifting everyone living in extreme poverty out of extreme poverty

would make no difference to global emissions (Wollburg et al., 2023). The real problem is the excesses of the elite: the billionaire class and of the economic system, capitalism, which allows the existence of a predatory social class, accumulating a lot of money and power in very few hands. The billionaire class alone would use 72% of the available CO2 to avoid breaking the 1.5 °C limit by 2050 (Gössling & Humpe, 2023). By definition, the existence of an economic elite is incompatible with a safe world.

Meanwhile, economic inequalities continue to grow, along with the elite's wealth and emissions. Since 2020, the wealthiest 1% have hoarded nearly two-thirds of all new wealth in the world, almost twice as much money as the poorest 99% of the world's population (Christensen et al., 2023). A tax of up to 5% on the world's billionaires could

raise \$1.7 trillion a year, enough to lift 2 billion people out of poverty and fund a global plan to end hunger (Christensen et al., 2023).

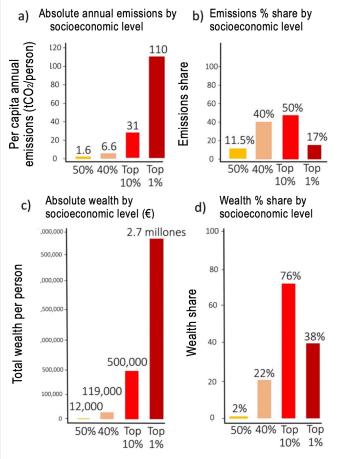


Figure 2. The economic elite is responsible for most carbon dioxide emissions (Panels a and b) and accounts for almost all of humanity's wealth (Panels c and d). Graphs taken from: Chancel et al. (2023) (a and b) and Chancel et al. (2022) (c and d).

3. "We just need to replace fossil fuels with clean energy sources"

The energy coming out of the sun is clean; the technology that captures it is not. Increasing the number of panels and

Climate change is only one of nine boundaries necessary for human safety and sustainability.

batteries leads to severe ecological damage, risking human welfare. In science, nine ecological axes have been defined as safe areas of operation for humanity (the planetary boundaries;

True Democracy and Capitalism

Rockström et al., 2023), and climate change is only one of these nine axes. In addition to transgressing the safe limit of climate change, we are transgressing the safe limits of five more axes: land system change, biosphere integrity, novel entities (chemical pollution), freshwater use, and the biogeochemical cycles of phosphorus and nitrogen (Rockström et al., 2023).

Do we need to implement renewable energy sources? Yes, quickly and urgently! However, to increase strategic sectors that benefit many people, such as public health centres and educational and public transportation systems, and not to replace the current fleet of almost 1.5 billion cars (Gross, 2016) with private electric vehicles.

True Democracy and Capitalism

Furthermore, it is extremely worrying to consider an energy 'transition' in a world whose dogma is to grow the 'economy' infinitely and exponentially. Economic growth is an exponential process due to its compound (percentage) nature over time. In 2017, a study published by the World Bank calculated how many minerals it would take to build enough solar and wind installations to power approximately half of the world's economy (Arrobas et al., 2017). If we double those values (assuming we remain in a growth-focused economy), Hickel (2019) estimates that about 4.8 billion tons of iron, 34 million tons of copper, 40 million tons of lead, 50 million tons of zinc, 162 million tons of aluminium, and to get to zero emissions, more than 40 million tons of lithium would be needed, which is an increase of 2. 700 % over current levels of extraction, to build batteries to store energy for when the sun does not shine, and the wind does not blow, only for electricity, without considering those needed for motor vehicles (Hickel, 2019). Unless production and consumption habits change, replacing the projected global fleet of two billion vehicles will require an explosive increase in mining. In this scheme, global neodymium and dysprosium mining would increase by another 70% per year, copper mining will have to more than double, and cobalt mining will have to increase almost fourfold, all between now and 2050 (Hickel, 2019). Mining is a major cause of deforestation, ecosystem collapse and biodiversity loss. Even at the current rate, we are exceeding sustainable extraction levels by 82% (Bringezu, 2015).

4. "Techno hubris"

A delusion prevalent for decades is techno-hubris, a term used to justify inaction because some fantastic technology will be invented, saving us without the need to make real changes. The most famous of these technologies are BECCs: bioenergy with carbon capture and storage. BECCs are massive plantations of trees that are eventually cut down, turned into pellets, and burned to generate energy. The emissions produced are captured in chimneys and stored underground. But this is an unworkable idea in practice. For example, to have a 50% chance of keeping global warming below 2°C, we would need plantations twice the size of India of BECCs - wiping out crops, causing famine, deforestation, water

Faith in technology has created severe damage to the world.

stress and biodiversity collapse (Smith et al., 2016). Today, we emit ~40 gigatonnes per year of CO2 (historical record) and capture 0.002Gt with technology (Smith et al., 2023). In short, the evidence does not support faith in

technology, and putting our security in these ideas is extremely risky.

Moreover, faith in technology has created severe damage to the world. With the Paris Agreement, signed in 2015, every country pledged to reduce their annual emissions, and their pledges (Nationally Determined Contributions; NDCs) were to be adjusted to keep warming to 1.5 °C. But even if all countries had kept their pledges (they did not) (Climate Action Tracker, 2024), the temperature would not have stayed below 2°C. Why? Because the NDCs were based on the scenarios modelled by the third working group (climate change mitigation) of the IPCC's Fifth Assessment Report (IPCC, 2014). The scenarios compatible with not exceeding 2 °C incorporated the existence of "negative emissions" technologies, mainly BECCS (Anderson & Peters, 2016), assuming that much of the emissions would be captured directly from the atmosphere.

5. "Efficiency is the solution"

Technological advances can and should be our allies against climate catastrophe (such as batteries with longer life).

Less dirty energy sources are adding to and not replacing fossil fuels.

However, in a world focused on growing all economic sectors simultaneously and exponentially, as is now the case, any efficiency gains are transformed into increased rather than reduced energy use. This phenomenon is known

as the Jevons paradox or rebound effect (Figure 3), named after Jevons, who described that during the Industrial Revolution, the steam engine invented by James Watts, which was more efficient than Thomas Newcomen's previous



one, led to global increases in coal use (and not its decrease, as would be intuitive; Jevons, 1866). Similarly, more efficient vehicles and aircraft have led to more, not less, petrol use/emissions (Small & Van Dender, 2005; Figure 3).

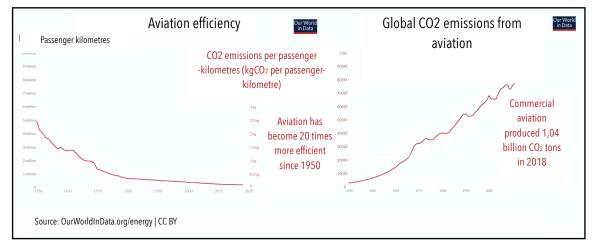


Figure 3. An example of the rebound effect: aviation is 20 times more efficient now than in 1950 (left panel), yet aviation emissions continue to increase (right panel). Graphs taken from: Hannah Ritchie, Our World In Data.

In addition to the rebound effect, in an economy focused on exponentially growing all economic sectors at the same time, as is the case now, less dirty energy sources are adding to and not replacing fossil fuels (Figure 4). Therefore, we are not seeing an energy transition but an energy addition.

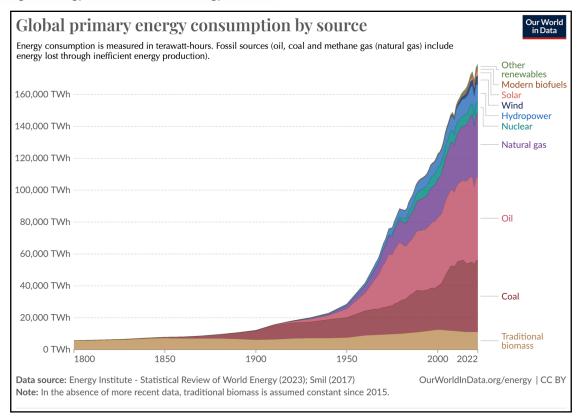


Figure 4. Renewable energies are only adding to, not replacing fossil energy sources.

6. "You only have to pay for your footprint, you can offset your emissions"

The idea behind carbon offsets is simple: will you emit a tonne of CO2? Do something to offset that CO2: protect a piece of rainforest, which, if cut down, would generate that same tonne. For-profit fossil companies, such as Exxon, BP,

94% of carbon credits certified by are "worthless".

Shell, Total Energies, and ENI, use carbon credits to call themselves "carbon neutral" (Rugh & Llavero Pasquina, 2023). Companies or individuals purchase carbon credits to offset the emissions associated with their products. Each carbon credit offsets one

tonne of CO2. The credits are produced by private offset projects that claim to absorb CO2 (Rugh & Llavero Pasquina, 2023). However, an investigation by The Guardian, Die Zeit and SourceMaterial newspapers revealed that 94% of REDD+ carbon offsets certified by Verra, the world's leading carbon credit certifier, are "worthless" (Greenfield, 2023). In addition to not working, these carbon offset projects harm indigenous peoples by dispossessing them of their lands and privatising their rights and resources (Rugh & Llavero Pasquina, 2023).

7. "Green capitalism or green growth"

Green growth, or green capitalism, is the idea of simultaneously maintaining a 'green economy' and 'sustained

There is no evidence on the possibility of decoupling GDP economic growth from material use and CO2 emissions. economic growth' (Vogel & Hickel, 2023). The central idea is based on decoupling economic growth from GDP, material use and CO2 emissions.

Beyond the lack of evidence on the possibility of decoupling GDP economic growth from material use and CO2 emissions (Vogel & Hickel, 2023), we must ask: why stick to using GDP? Even Simon Kuznets, the economist who developed the GDP measure, said in 1962: One must distinguish between quantity and quality of growth, costs and returns, and short and long term. Targets for more growth must specify growth of what and for what (Kuznets, 1962).

Real Solutions

According to the IPCC's 6th and latest report, a climate-resilient world requires "Targeting a climate resilient, sustainable

IPCC: "a climate-resilient world requires "fundamental changes in how our societies function". world involves fundamental changes to how society functions, including changes to underlying values, worldviews, ideologies, social structures, political and economic systems, and power relationships." (IPCC, Sixth Assessment Report, WGII, 2023). The task is enormous, and time is short.

On the one hand, we need a global social network to protect the human population whose needs and dignity remain unmet. At the same time, we must massively reduce the production and extraction of energy and materials so that renewable energy does not fall into rebound effects and actually succeeds in replacing, rather than adding to, other energy sources. The good news is that scientific studies have found that an economy focused on meeting human needs (rather than growing GDP exponentially and infinitely, as it does now) could meet those needs to very high standards for 10 billion people (20% more than the current population) using 60% less energy (O'Neill et al., 2018; Millward-Hopkins et al., 2020). These novel lines of research are hopeful because, on the one hand, they tell us about the possibility of making extremely positive changes for the vast majority of humanity without the need for new technologies.

With this in mind, we can conclude that to confront climate catastrophe, we need to make economic and social changes (Hickel, 2021). To build a climate-resilient world, we need to nationalise fossil and electricity generation companies, have energy sovereignty, and bring them under public control, as all public utilities should be (Hickel, 2021). In the

meantime, we must decommodify human rights, such as the right to housing, transport, health, education, sports and art. We must also have a labour guarantee of valuable jobs for society, with a reduction in working hours. By covering basic necessities at high levels, including work and housing, it will be possible to eliminate or decrease harmful economic sectors in the world without the risk of people employed in these sectors falling into unemployment (such as in aviation, tourism, programmed obsolescence and advertising). We must also increase renewable energy sources for vital public sectors. We also need to limit the elites' excesses through a cap on profits and very high taxes.

The world is certainly not going to change on its own. For-profit corporations will not stop propagandising at the expense of our welfare (Holden, 2020). We must act, build popular movements and exert solid social pressures to secure these transformations at their roots. These tasks require economies to incentivise migration from private to public and community, big to small, touristy and globalised to local. We must successfully distribute existing resources and infrastructure equitably between and within countries. The fastest way to build social justice is to share goods and resources.

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True Democracy and Capitalism

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