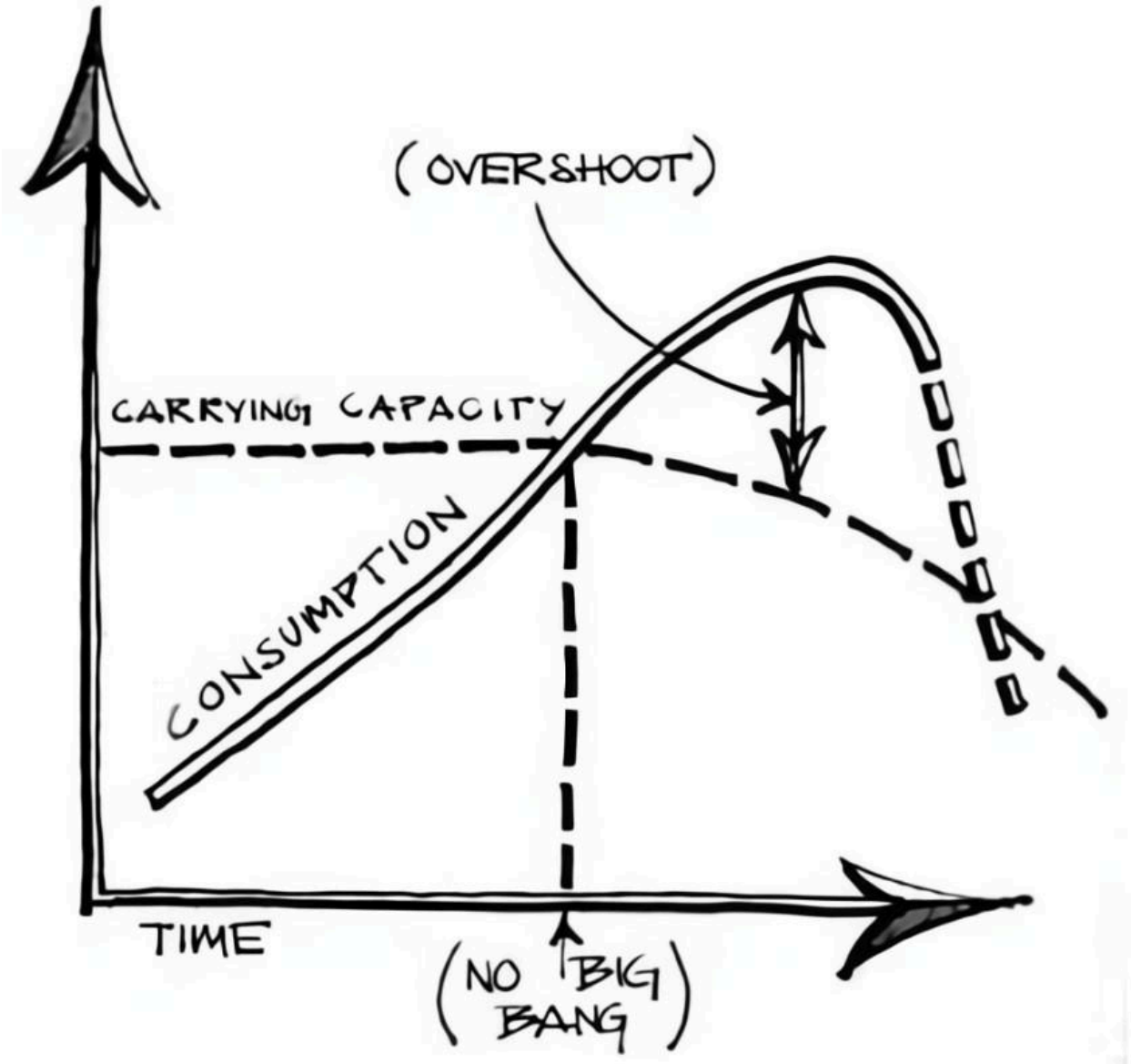
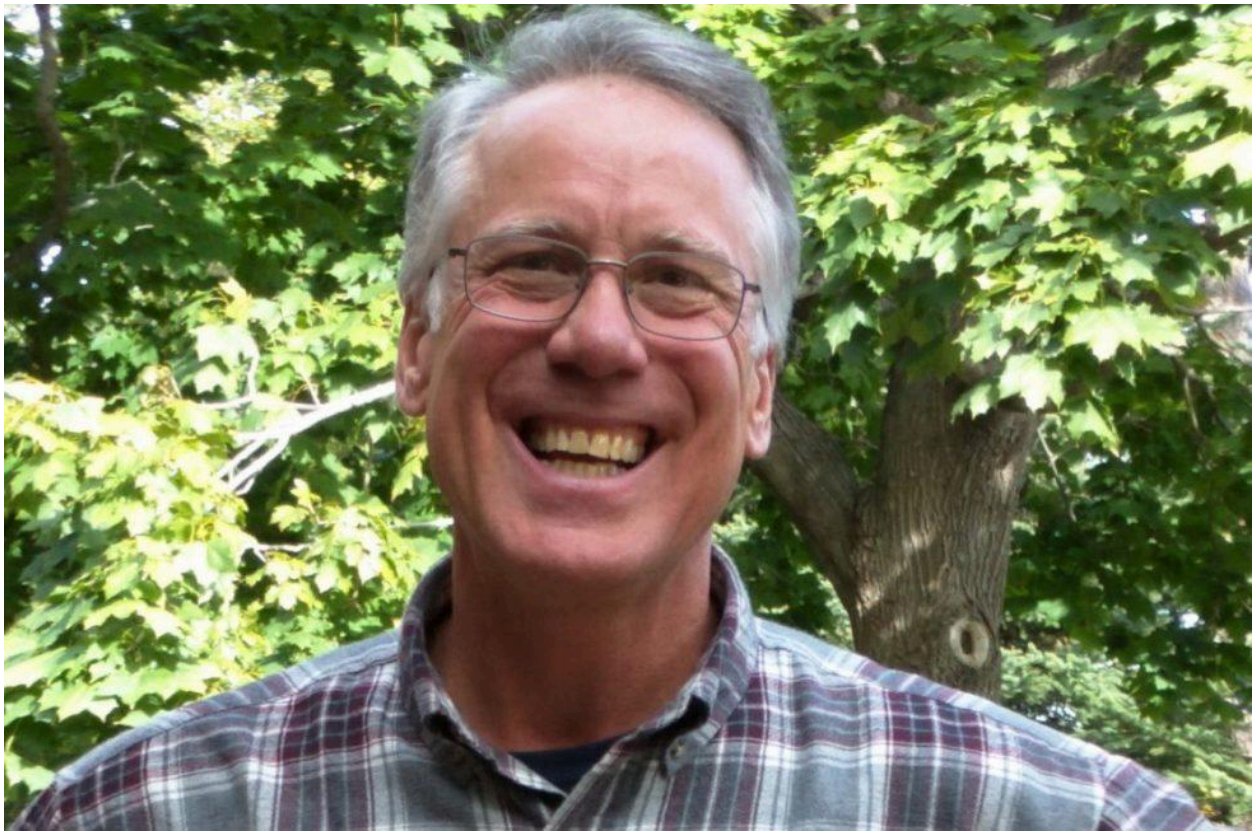
It Bears Repeating: Best Of...



Volume Two

A compilation of writers focused on the nexus of limits to growth, energy, and ecological overshoot.

In memory of Michael Dowd



Those past collapses tended to follow somewhat similar courses constituting variations on a theme. Population growth forced people to adopt intensified means of agricultural production...Unsustainable practices led to environmental damage...Consequences for society included food shortages, starvation, wars among too many people fighting for too few resources, and overthrows of governing elites by disillusioned masses. Eventually, population decreased through starvation, war, or disease and society lost some of the political, economic, and cultural complexity that it had developed at its peak.

–Jared Diamond, 2005. Collapse: How Societies Choose to Fail or Succeed.

Boiling a frog is a metaphor for the problem we all have perceiving changes that are gradual but cumulatively significant, that may creep up and have devastating consequences: a little increase here, a little there, then later some more. Nothing changes very much and things seem normal. Then one day the accumulation of changes cause the appearance of normality to disappear. Suddenly things have changed a great deal. The world is different, and it has been altered in a manner that may not be pleasant.

–Joseph Tainter & Tadeusz W. Patzek, 2012. Drilling Down: The Gulf Oil Debacle and Our Energy Dilemma

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...a clear leverage point: growth. Not only population growth, but economic growth. Growth has costs as well as benefits, and we typically don't count the costs—among which are poverty and hunger, environmental destruction and so on—the whole list of problems we are trying to solve with growth! What is needed is much slower growth, very different kinds of growth, and in some cases no growth or negative growth. The world leaders are correctly fixated on economic growth as the answer to all problems, but they're pushing with all their might in the wrong direction. ...leverage points frequently are not intuitive. Or if they are, we too often use them backward, systematically worsening whatever problems we are trying to solve.

–Donella H. Meadows, 2008. Thinking in Systems: A Primer.

Table of Contents

Editorial note:

The primary goal of the original publication (see *It Bears Repeating: A Best of…Volume 1*) was to compile the 'Best Of' from a variety of authors that could be used as an 'overview of/introduction to/update on' the variety of issues that encompass the nexus of limits to growth, energy, and ecological overshoot. Volume 2 continues that objective.

The intent was and remains not to have a guided narrative towards a singular or overarching message; except, perhaps, that we are in a predicament of our own making with a far more chaotic future ahead of us than most imagine–and most certainly than what mainstream marketing/politics would have us believe.

Another 'goal' of this now 'series' is to provide readers with exposure to some authors they may not be familiar with. All contributors are active and participating in the circle of discussions on the topics included in these volumes. These documents provide a thin cross-section of the voices warning us all of our predicament and possible paths for our future–some of these 'managed' by humans, others not so much.

This collection provides a variety of authors, perspectives, foci, and rhetorical approaches from over the past handful of years to the present. They have all been replicated in their original form with perhaps only formatting changes so that the document is consistent in this regard. Any errors in formatting, layout, and replication of the article from the author's/publisher's site are entirely the fault of the editor. The articles shared in this volume are presented in alphabetical order by author last name or pseudonym.

Links to author websites and the shared article are included for each chapter. Some of the articles have references/links embedded within them, while others follow a more academic publication-style with these provided at the end.

The articles are all public domain ones put out by the author and any replication in whole or part needs only an appropriate attribution to the author/publisher.

Please note that there exists a combination of both British and American English spelling for some words (e.g., organise and organize).

And, finally, a HUGE thank you once again to the authors/thinkers/activists whose work is included in this compilation. Their willingness to participate and provide feedback has been immeasurable, and it has been a pleasure to make contact and work with them on this project.

-Steve Bull
September 2024

Erik Michaels
Problems, Predicaments, and Technology

Foreword
(September 2024)

I am honored to provide this introduction to *It Bears Repeating, Volume 2*. The importance of these articles cannot be overstated. The reality is far different from what most people think, based on mainstream media accounts of many different forms of hopium.

Most everyone is familiar with what is commonly known as "the energy transition" and different electrification schemes. Therein is the trouble, since none of those ideas will actually do anything more than *increase* ecological overshoot, no differently than many other so-called "solutions." The trouble with most of these ideas is that they are based on reductionism, ignoring the wider boundary holistic issue of the predicament known as ecological overshoot.

I have previewed this set of articles and like last year's edition, this year's volume contains an excellent array of articles regarding the predicament we find ourselves enmeshed within. You will find articles containing information about ecological overshoot, civilization and civilizational collapse, symptom predicaments such as climate change and energy and resource decline, and everything in between.

I applaud these efforts aimed at informing the general public about the collapse we are currently in and the consequences and implications that all of this brings. We are very passionate about others being able to understand what these predicaments are and how they are essentially very different from problems that can be solved or have answers since predicaments have outcomes, not solutions.

Thank you to all the writers who have contributed to this year's collection of articles and may you, the reader, enjoy them.

Bio

One of the most frequent questions I see regularly in climate change groups from people goes something like this, "Who is so-and-so and why should we trust this person?" This question is usually posed when I post an article, study, or video from a particular scientist or professor.

So, I figure that I should answer this question about myself so as to inspire confidence that I am not just some hack writing up blog posts simply for the fun of it. First of all, **I am not a PhD science expert,** but I spend a large portion of my spare time studying science and researching the nuts and bolts of why things are the way they are. I have a great curiosity as to why today's problems seem to have become a way of life. This is what led me to write the first entry in this blog - **Problems, Predicaments, and Technology.** The article was actually a simplified adaptation to a much larger article regarding non-renewable "renewable" energy devices such as wind turbines, solar panels, and other technological devices. Realizing the facts contained in the new article, I wanted to point out that technological devices of ALL stripes were

unsustainable; not just devices labeled "renewable energy" or other similar monikers (which is what the prior article delved into).

Many new articles, studies, and videos have since come out against technology being an answer to our troubles, especially when it comes to predicaments which are symptoms of ecological overshoot, the master predicament. As such, I routinely post these links in many different groups to point out the reality and many of these links are contained within the files and/or articles here in this blog.

I have been studying climate change for the better part of the last 40 years. Back when I began studying it, the more common term was "global warming" and most of the worst effects were predicted far into the future beyond 2050. Like many young folks in their 20's during the latter part of the 1980's, I hoped that the efforts being made at the time by James Hansen and other climate scientists would lead to mitigation efforts and a more sustainable society. Yes, I was rather idealistic back then, as many younger people tend to be.

…(click on the link above to read the rest).

Dr. Ugo Bardi
[The Seneca Effect]

A Concise History of the Global Empire

(Published May 12, 2024)

Like all past empires, the Global Empire has gone through its parable of growth and glory and is now starting to decline. There is not much we can do about it; we must accept that this is how the universe works.

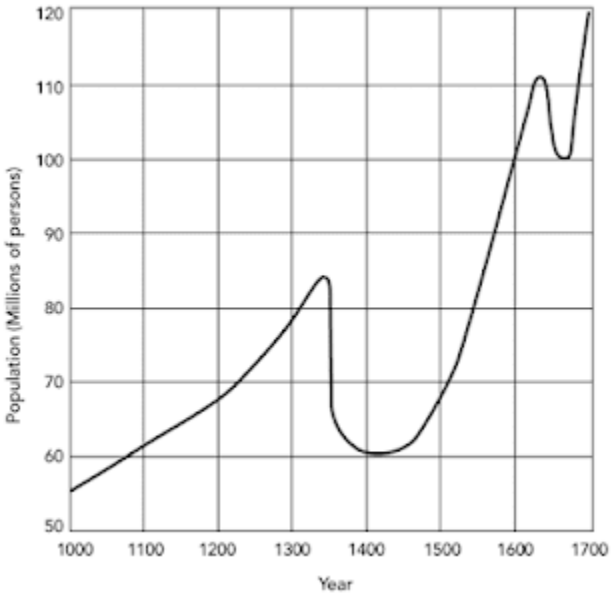
For everything that exists, there is a reason, and that's true also for that gigantic thing that we sometimes call "The West" or perhaps "The Global Empire." To find that reason, we may examine its origins in an older but similar empire: the Roman one.

As someone might have said (and maybe someone did), "Geography is the mother of Empires." So, the Romans exploited the geography of the Mediterranean basin to build an empire based on maritime transportation. Rome was the center of a hub of commerce that outcompeted every other state in the Western region of Eurasia and North Africa. It was kept together by a "*Lingua Franca*," Latin, and by a financial system based on coinage, in turn based on the availability of gold and silver mined from the Empire's mines in Spain. More than all, it was based on a powerful military system created by the Roman wealth.

Like all empires, the Roman one carried inside the seeds of its own destruction: the limited amount of its mineral resources. Roman gold and silver were used to pay not just for the legions but also for expensive commodities coming from China that the Empire couldn't produce in its territory. As long as the Romans could keep producing precious metals, the amounts lost to China to pay for silk and spices didn't matter so much. But that couldn't last forever, and the mines' production peaked during the 1st century CE. From that moment onward, the Empire was bleeding gold. In a couple of centuries, the impoverished Empire couldn't pay any more for its huge military apparatus. It could only collapse, and it did. It started sliding down along the "Seneca Cliff" in the second century AD, disappearing forever by the 5th century AD.

There came the time we call the "Dark Ages," a misnomer if ever there was one. With the old Empire gone, Northern Europe was building a new civilization that exploited some of the cultural and technological structures inherited from Rome and developed original ones. Cultural unity was ensured by Christianity and by using Latin as the *Lingua Franca* that allowed Europeans to understand each other. The Middle Ages were a period of intelligent adaptation to difficult conditions where art and literature flourished.

During the Middle Ages, the European population and the European economy were growing together, exploiting a relatively intact territory. Soon, the gentle civilization of the early Middle Ages gave way to something that was not gentle at all. With the turn of the millennium, Europe was overpopulated, and Europeans started looking for areas where to expand. The Crusades were the first attempt, but were an expensive failure. The military effort of the Crusades had to be supported by the main economic resources of the time: forests and agricultural land. Both were badly overstrained, and the 14th century was an age of famines and pestilences that nearly halved the European population. It was bad enough that we may imagine that the descendants of Sultan Salah ad-Din, the conqueror of Jerusalem, could have stricken back and conquered Europe had they not been stabbed in the back by the expanding Mongol empire.



The European Population: graph from William E Langer, "The Black Death" Scientific American, February 1964, p. 117.

But Europeans were stubborn and kept using the trick they knew to rebuild after a disaster: patterning new structures on the old ones. They were good warriors, skilled shipbuilders, excellent merchants, and always

willing to take risks in order to make money. They kept doing what they were good at doing. If the Crusades had shown that they couldn't expand East, why not expand West across the Atlantic Ocean? It was a wildly successful idea.

Europeans imported gunpowder technology from China and used it to build fearsome weapons. With their newly mastered gunnery skills, they created a new kind of ship, the cannon-armed galleon. It was a dominance weapon: a galleon could sail everywhere and blast away all opposition. A century after the great pestilence, the European population was growing again, faster than before. **And, this time, the Europeans were embarking on the task of conquering the world.**

Over a few centuries, Europeans behaved as worldwide marauders: explorers, merchants, pirates, colonists, empire builders, and more. But who were they? Europe never gained political unity, nor did it embark on an effort to create a politically unified empire. While fighting non-European populations, Europeans also fought each other for the spoils. The only supranational governing entity they had was the Catholic Church, which was an obsolete tool for the new times. By the 16th century, the Catholic Church was not anymore a keeper of relics, it was a relic itself. The final blow to it came from the invention of the printing press, which enormously lowered the cost of books. That led to a market for books written in vernacular language, which was the end of Latin as a European *lingua franca*. The cultural unity of Europe was broken forever.

As a result, the European states jumped at each other's throats, engaging in the "30-year war" (1618 – 1648). Half of Europe was laid waste; plagues and famines reappeared; food production plummeted down, and with it, population. Europeans were not just fighting against each other in the form of warring states. European men were fighting against European women: it was the time of witch-burning, and tens of thousands of innocent European women were jailed, tortured, and burned at the stake. With its forests cut and the agricultural land eroded by overexploitation, the age of the European world empire could have ended in the 17th century. It didn’t.

Europe seemed to have an incredible capability of bouncing back from the worst disasters and a nearly miraculous event saved it again from collapse. The event had a name: coal. It was extracted first in England, and then all over Central and Northern Europe. Coal could be used instead of wood to smelt metals and make weapons. This saved the European forests that could be used to build warships to ferry armies overseas to conquer new lands and enslave their inhabitants. The slaves would then cultivate plantations and produce food to be shipped to Europe. It was the time when the British developed their habit of tea in the afternoon: the tea, the sugar, and the flour for the cakes were all produced in the British plantations overseas.

The European population restarted growing during the 18th century, and by the end of the 19th century, the feat of conquering the world was nearly complete. The 20th century saw a consolidation of the entity we can now call the "Western Empire," with the term "West" denoting a cultural entity that by now was not just European: it encompassed the United States, Australia, South Africa, and a few more states, including even Asiatic countries such as Japan. In 1905, Japan gained space among the world powers by force of arms at the naval battle of Tsushima, soundly defeating a traditional European power, Russia. From a military viewpoint, the Western Empire was a reality. There remained the need to turn it into a political entity. All empires need an emperor, but the West didn't have one, not yet, at least.

The final phase of the building of the Western World Empire took place with the two world wars of the 20th century. Those were true civil wars fought for imperial dominance, similar to the civil wars in ancient Rome at the time of Caesar and Augustus. Out of these wars, a clear winner emerged: the United States. After 1945, the Empire had a common currency (the dollar), a common language (English), a capital (Washington DC), and an emperor, the president of the United States.

The only rival empire left, the Soviet Empire, collapsed in 1991, leaving the American Empire as the sole dominant power in the world. That was seen as proof of the American Empire's inherent goodness. Then, Francis Fukuyama wrote his "*The End of History*" (1992), correctly describing the events he witnessed. Just like when Emperor Octavianus ushered in the age of the "*Pax Romana*," it was the beginning of a new golden age: the "*Pax Americana."*

But history never ends, and all empires carry the seeds of their own destruction. Just a few decades have passed from when Fukuyama claimed the end of history and the P*ax Americana* seems to be already over. Just like Rome had followed the decline of its gold mines, the West is following the decline of the fossil fuels it controls. Just as the ancient Silk Road was at the basis of the collapse of the Roman Empire, the nascent Belt and Road Initiative, sometimes referred to as the “New Silk Road,” will connect all the regions of Eurasia into a single commercial region. It may give a deadly blow to the Globalized dominance of the West.

But the Western Empire is not dead yet. It still has its wondrous propaganda machine working. The great machine has even been able to convince most people that the empire doesn't actually exist, that everything they see being done to them is done for their good, and that foreigners are being starved and bombed with the best of good intentions. It is a remarkable feat that reminds something that a European poet, Baudelaire, said long ago: "the Devil's best trick consists in letting you believe he doesn't exist." It is typical for all structures to turn nasty during their decline, and it happens even to human beings. So, we may be living in an "Empire of Lies" that's destroying itself by trying to build its own reality. Except that the real reality always wins.

And there we are today. Just like the old Roman Empire, the Western Empire is going through its cycle, and the decline has already started, even though, right now, it seems to be flaring in a fierce display of power and bloodlust. It may be the last convulsion of an Empire already in its death throes.

The Western Empire is not dead yet, but we could already hazard a moral judgment: was it good or bad? In a sense, all empires are bad: they tend to be ruthless military organizations that engage in all kinds of massacres, genocides, and destruction. The Western Empire provides us with many examples of wanton destruction, possibly the evilest one being the genocide of the North American Natives during the 19th century. But the extermination of civilians by aerial bombing of cities and that of ethnic minorities during WW2 were also impressively evil feats. And the (evil) Empire doesn't seem to have lost its taste for genocide: it is happening right now.

On the other hand, it would be difficult to maintain that Westerners are more evil than people belonging to other cultures. If history tells us something, it is that people tend to become evil when they have something to gain by doing so. So, all empires in history are more or less the same: they are temporary structures that grow and decline with the availability of the natural resources that created them. They are like waves crashing on a beach: some are large, some small, some do damage, and some just leave traces

on the sand. The Western Empire did more damage than others because it was larger, but it was not something different.

The universe never moves smoothly, it is always going up and down, and, often, going through abrupt collapses, as the ancient Roman philosopher Lucius Seneca noted long ago. But the Seneca Collapse is not the end of the world. If humankind can survive the climate disaster it is creating, the future may be a gentler and saner age than the current one. Or maybe there will be new large empires supposed to be eternal and whose rulers will see themselves as divinely appointed. But the universe will go on as it has always done.

On this subject, see also a previous post of mine, "Why Europe Conquered the World."

Bio

Dr. Ugo Bardi is a former faculty member of the University of Florence, in Italy, where he was a professor of physical chemistry. He is interested in resource depletion, system dynamics modeling, climate science and renewable energy. He is the co-founder and former president of ASPO Italy, a member of the scientific committee of the Association for the Study of Peak Oil and Gas (ASPO), a member of the Club of Rome, and author of several books, including *The Limits to Growth Revisited*.

Will Falk
willfalk.org

Park City is Still Damned: What Needs to Be Done?

(Published April 14, 2017)

Photo by US Department of Agriculture / Wikimedia

In my essay, *Park City is Damned: A Case Study in Civilization*, I described the vicious cycle Park City, Utah is caught in and explained how the city cannot exist for much longer.

There are far more humans in Park City than the land can support, so the necessities of life must be imported. Importing these necessities costs money and requires an industrial infrastructure. Park City makes its money through a tourist industry that relies on snow, but climate change, produced by the same industrial infrastructure bringing the necessities of life, is destroying the snow. The industrial infrastructure must be dismantled to stop climate change so the snow may survive. Either the snow or the industrial infrastructure will fail.

And, Park City will, too.

Not long after the essay was published, I attended a gathering for an emerging group PCAN! or Park City Action Network. The gathering's goals included to "create a network for young professionals and build community, to learn what's going on in local politics, and to find other like-minded individuals to create a strong collective voice."

I think I'm still young (turned 30 in March), I have a law degree and license (in Wisconsin), and I'm interested in finding like-minded individuals to create a strong collective voice, so I went

A man approached me, and said, "You're Will Falk, right? You wrote that article?"

I was embarrassed and nervous people were going to hate me for what I wrote. But, his eyes and body language were sincere, so I told the truth. He asked, "So, you think Park City won't last?

"*Can't* physically last," I clarified.

“ Right. And, solar power isn’t the answer? Wind power, either?”

“No,” I responded. He looked at me earnestly for a few seconds, looked around at the room of concerned, young professionals, and said, more to himself than to me, “Park City is still damned huh?”

“Still damned,” I said. He sighed and asked,“What the hell have we been working on all this time?”

I shrugged. I wasn’t sure what to say, but I could see acceptance in his face. I simply tried to meet his gaze. Finally, he asked, “What can I do?”

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Park City’s vicious cycle is a reflection of the vicious cycle the global human population is caught in. There are far more humans than the planet can support sustainably, so the necessities of life must be stolen from non-humans and the future. This theft is managed through an industrial infrastructure powered by fossil fuels and the operation of this infrastructure is destroying the planet’s total life-supporting capacity. It is pushing the climate to temperatures too warm for most species, pushing oceanic life perilously close to total collapse, and contaminating, with toxins and carcinogens, the bodies of every civilized individual.

Unfortunately, with more than half the global human population now living in cities, most humans depend on this system for food, for clean water, and for shelter. Humans have backed themselves into a corner. If this system collapses, huge, urban populations of humans will be left without the necessities of life. But the system must collapse for the planet to survive. Ignorance of physical reality cannot save us from it; either the planet or the industrial infrastructure will fail.

Basic ecology gives us another way to understand this. In ecologic terms, humans have overshot the planet’s carrying capacity through dependence on a drawdown method of temporarily extending carrying capacity. Crash is inevitable, and the longer the drawdown occurs, the smaller Earth’s total carrying capacity will be after the crash.

Humans are animals and, as animals, require habitat. Every habitat has a total life-supporting capacity, or carrying capacity. Carrying capacity is the maximum population of a given species which can be supported by a particular habitat indefinitely. Earth, even as the largest habitat, is finite with a specific carrying capacity.

In his ecological classic *Overshoot: The Ecological Basis of Revolutionary Change,* Dr. William R. Catton Jr. explains that civilized humans “have several times succeeded in taking over additional portions of the earth’s total life-supporting capacity, at the expense of other creatures.”

Catton’s phrase “at the expense of other creatures” is a nice way of describing extermination. Using 1970 population totals and current trends, the World Wildlife Fund recently published a prediction that by 2020 two-thirds of the Earth’s total vertebrate population (mammals, birds, fish, amphibians, and reptiles) will have been killed by human activities. Biologist Paul Ehrlich, who studies population at Stanford University, says that half of all individual life forms humans are now aware of have already disappeared.

Civilized humans have learned to rely on technologies that augment human carrying capacity in temporary ways. These augmentations are necessarily temporary because the finiteness of every habitat places physical limits on population growth. In other words, you can't steal more than everything.

The latest and deadliest of the technologies humans have used to augment carrying capacity revolve around the exploitation of the "planet's energy savings deposits, fossil fuels." Through these exploitative technologies powered by fossil fuels, Catton argues, civilized humans are now engaged in a "drawdown method of extending carrying capacity." This method is "an inherently temporary expedient by which life opportunities for a species are temporarily increased by extracting from the environment for use by that species some significant fraction of an accumulated resource that is not being replaced as it is drawn down."

Daly West and Quincy Mines in Park City (circa 1911) / Wikimedia

Civilized humans are destroying countless so-called "resources" that are not being replaced as they are murdered. The extraction of fossil fuels is an easy example. But, civilized humans are also cutting forests and plowing grasslands faster than they can grow back, they're stripping topsoil faster than it rebuilds, and they're heating the planet more intensely than life can evolve to keep pace.

This drawdown has allowed humans to overshoot the planet's carrying capacity. Overshoot leads to a situation where a portion, or even *all,* of a population cannot be supported when temporarily available, and finite resources are exhausted. When these resources run out, crash inevitably follows.

Richard Heinberg, Senior Fellow at the Post Carbon Institute, describes what is happening as the ecological phenomenon known as "population bloom" in his book *The End of Growth: Adapting to Our New Economic Reality*. When a species finds an abundant, easily acceptable energy source (in our case, fossil fuels), its numbers increase while taking advantage of the surplus energy. Speaking to the inevitability of crash, Heinberg writes, "In nature, growth always slams up against non-negotiable constraints sooner or later…Population blooms (or periods of rapid growth) are always followed by crashes and die-offs. Always."

Crash following overshoot is bad enough, but the problem doesn't end there. If a population exists in overshoot for too long, drawing down too many of its habitat's necessities of life, the habitat's carrying capacity can be permanently reduced. To use simple numbers, start with a carrying capacity of 1000 humans. What happens if 1200 humans, then 1500 humans, then 2000 humans live on the land for too long? Or those original 1000 humans steal other creatures' carrying capacity and convert it to human use?

That land base's carrying capacity can be permanently reduced to 800 humans, 400, and so on, over time, all the way to zero. Eventually, the population will crash and that land base will never be capable of supporting humans, or any other life, again. This is as true for the carrying capacity of a small locale like Park City as it is for the carrying capacity of the whole planet.

The horror we live with comes into focus. Most human lives are made possible by a system that will collapse, and the longer that system operates, literally eating Earth's total carrying capacity, the less chance other lives – human and non-human – have to continue existing.

We have two choices. We can live in denial, even as the evidence of the planet's murder piles around us. We can anesthetize ourselves with the comforts produced by this insane arrangement of power. We can pray for our own death before the worst of the collapse happens. In short, we can do nothing.

Or, accepting responsibility as people who love each other, love our non-human kin, and love life, we can stop the industrial system from destroying our beloveds.

Once you've decided to stand on the side of life, the question becomes, How? How do we ensure as much life as possible will survive the coming crash? How do we stop industrial civilization from permanently reducing the planet's carrying capacity to nil?

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Longtime environmental activists and writers Derrick Jensen, Lierre Keith, and Aric McBay created a concrete strategy for an effective resistance movement in their book *Deep Green Resistance*. They named that strategy "Decisive Ecological Warfare (DEW)."

Before you object to the term "warfare," consider this: In the past, wars killed humans. Today, with human activities killing 200 species daily, we are engaged in a war where whole species are exterminated. We readily recognize the chemical warfare characterizing so many conflicts of the last century and, today, industrial processes create a reality where every mother on the planet now has dioxin, a known carcinogen, in her breast milk.

This is a war. And, we are losing. Badly. If we're going to win this war, we need to act like a serious resistance movement.

DEW gives us a comprehensive strategy. It is centered on two primary goals. Goal 1 is "to disrupt and dismantle industrial civilization; to thereby remove the ability of the powerful to exploit the marginalized and destroy the planet." Goal 2 is "to defend and rebuild just, sustainable, and autonomous human

communities, and, as part of that, to assist in the recovery of the land."

Disrupting and dismantling industrial civilization is primary. If industrial civilization is not stopped, then the second goal will be impossible. The land will be pushed past its ability to recover and there will be too few necessities of life left to support autonomous human communities.

Accomplishing these goals will involve five smaller strategies. First, resisters will "engage in direct militant actions against industrial infrastructure." This may frighten some people and others may feel physically incapable of actions like these. If you can't engage in these kinds of actions, the people who can will need your material support. In a place like Park City, steeped in privilege, the most obvious form of support the community could offer is money. Those in power are incredibly well-funded. We'll never match them dollar for dollar. But, that doesn't mean money can't be put to good use.

Second, they will "aid and participate in ongoing social and ecological justice struggles; promote equality and undermine exploitation by those in power." My friend Rachel Ivey, a brilliant feminist writer and organizer, often connects social and ecological justice with the truth that, "Oppression is always tied to resource extraction." This means that industrial civilization has been built on the backs of people of color, indigenous peoples, the poor, and women. These groups are often on the movement's front lines, fighting for survival. We must join them in true solidarity.

Third, they will "defend the land and prevent expansion of industrial logging, mining, construction, and so on, such that more intact land and species will remain when civilization does collapse." Pipeline and port blockades, tree sits, and other forms of non-violent direct action aimed at physically preventing those in power from destroying more of the land is an essential piece of the puzzle. There are roles in the resistance for pacifists and others personally and philosophically unwilling to engage in more militant actions.

Fourth, they will "build and mobilize resistance organizations that will support the above activities, including decentralized training, recruitment, logistical support, and so on." A serious resistance movement needs artists, writers, and those skilled in marketing and mass media communications. It also needs quartermasters, organizational psychologists, and others trained in logistical thinking.

Finally, resisters will "rebuild a sustainable subsistence base for human societies (including perennial polycultures for food) and localized, democratic communities that uphold human rights." As collapse intensifies, we are going to need permaculturists, gardeners, and urban farmers to produce food when the industrial networks, currently transporting food, fail.

All kinds of skills will be necessary to stop industrial civilization, but the most important thing is that industrial civilization is actually stopped. All of our efforts must support this primary goal. Right now, the dominant system is barreling down a path that ends in total ecological collapse. Not only is the human species endangered with extinction, but every species – save, maybe a few microscopic species of bacteria – is threatened with annihilation. Before anything else, we must knock the dominant system off that path.

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I return to answering the question, “What can I do?”

This is the wrong question. Don’t ask, “What can I do?” Instead ask, “What needs to be done?”

Go outside. Look around. Take a deep breath. Feel the oxygen, exhaled by trees, seep into your lungs. Let your breath go, and listen as the trees inhale the carbon dioxide your breath releases. Ask those trees what they need.

Climb to the top of the nearest hill. Find a boulder to sit on and wait. Match the land’s patience. Let gravity pull your bones closer to their ancestors, the bones of the earth. Watch the ants march, dutifully performing work for their community. Listen to the geese arriving for the spring, celebrating their return. Ask the stones, the ants, and the geese what they need. Ask them what needs to be done.

They’ll tell you they need to live.

The trees will tell you that warming temperatures cause cavitation, or bubbles, in the water flowing from their roots to their topmost leaves and that these bubbles kill them as surely as artery blockages kill humans.

The stones will tell you how quickly everything has changed. They will tell you how species they used to watch disappeared faster than stones, who exist on geologic time, can contemplate. They will tell you about mountain top removal, open-pit mining, and earthquakes caused by fracking.

The ants will tell you how they’ve long been involved in planetary cooling processes. They’ll show you how they’re working as hard as they can to build limestone by freeing calcium carbonate from minerals in the soil. And, in the process, trapping as much carbon dioxide as they can.

The geese will tell you of frantic searches for disappearing wetlands, of once wild rivers dammed, drying, and no longer flowing to the sea.

When you stop asking “what can I do?” to begin asking “what needs to be done?” it is true, you may expose yourself to a world in pain. But, you’ll also find countless allies asking the same questions you are. You may rip the scar tissue of denial that has been shielding your eyes from the near-blinding truth. But, once you let the sunlight in, once you step outside into the real world, you’ll open yourself to a world fighting like hell to survive.

We’ve been waiting for you.

Bio

Will Falk is a writer, lawyer, and environmental activist. The natural world speaks and Will’s work is how he listens. He believes the ongoing destruction of the natural world is the most pressing issue confronting us today. For Will, writing is a tool to be used in resistance.

Will graduated from the University of Wisconsin-Madison Law School and practiced as a public defender in Kenosha, WI. He left the public defender office to pursue frontline environmental activism. So far, activism has taken him to the Unist’ot’en Camp – an indigenous cultural center and pipeline blockade on unceded

Wet'suwet'en territory in so-called British Columbia, Canada, to a construction blockade on Mauna Kea in Hawai'i, to endangered pinyon-juniper forests in the Great Basin, and to Thacker Pass in northern Nevada where Will is trying to stop an open pit lithium mine from destroying a beautiful mountain pass..

His writing has been published by CounterPunch, Earth Island Journal, CATALYST Magazine, Whole Terrain, Dark Mountain Project, the San Diego Free Press, and The Wayfarer among others. His first book *How Dams Fall* was published in August, 2019 by Homebound Publications. His second book *When I Set the Sweetgrass Down*, a full-length collection of poetry, will be released by Homebound Publications on April 11, 2023.

Fast Eddy
[Fast's Substack]

[NZ is running out of gas–literally]
(Published August 25, 2024)

This country is collapsing

The coalition government recently announced its plan to reverse a ban on new oil and gas exploration to deal with an energy security challenge brought on by rapidly declining natural gas reserves.

But this assumes, rather optimistically, that repealing the ban will prompt companies to invest in new gas fields.

What has changed is that all the extra drilling hasn't turned up much extra gas in the past few years. This is despite record amounts spent on new wells - nearly $1.3 billion between 2020 and 2024. Energy companies now think there's less gas than previously thought.

As an island nation, New Zealand can't easily import more gas from overseas. There is no pipeline to Australia, and liquefied natural gas terminals are expensive to build.

Macroeconomics tells us that when a resource becomes scarce in a closed market, the following things happen.

First, with a fixed amount of gas to go around, its use has to be prioritised. This means some users might miss out. As it happens, the government has been struggling to renew a contract to supply schools, prisons and hospitals with gas.

Second, when a resource becomes scarce, its price tends to rise. This tracks with the experience of Pan Pac, a forestry owner and processor in Hawke's Bay which reported a three-fold increase in gas costs, from $3m a year to potentially $9m at current prices.

Now, some would say the cure for high prices is exactly that: high prices. A gas crunch could ultimately shift demand to other sources such as heat pumps for home and industry. Some of this was subsidised through the previous administration's Government Investment in Decarbonising Industry Fund.

But until the switch happens, resource scarcity means you can't produce as many goods, and this could have an effect on GDP. Methanex, a major exporter of methanol produced from natural gas, is a key concern here. Less methanol would mean fewer exports and, potentially, job losses.

Methanex is already operating at reduced capacity, and it recently initiated high court proceedings against Nova Energy, which uses natural gas to produce electricity. Nova cut gas supply to Methanex and the companies disagree on whether their contract allows for this.

A new gas field could take a decade or longer to find, develop and bring online. At the same time, if there are no new reserves (regardless of whether the government goes through with the repeal of the ban), we can expect gas supply to drop to half within six years, according to MBIE forecasts.

This means there might not be enough gas to simultaneously maintain synthetic (ammonia-based) fertiliser production, peak electricity generation and methanol exports. What should get prioritised?

Ammonia is essential to the farming sector and food production.

Methanex exports are worth $800m a year and the company is a significant contributor to the economy. Source

Dairy steaming mad over energy fiasco

Open Country Dairy CEO Mark de Lautour describes surging energy costs as the light of a big train in a dark tunnel heading for the dairy processing industry, and New Zealand as a nation.

While Open Country Dairy (OCD) is insulated from the rapid rises at present thanks to contracts already in place, he said he and his executive team are fully aware of what is coming once those contracts end.

And, rather than simply being the result of volatile hydro lake levels, he said, there are much bigger issues at play impacting the energy market and costs.

“As coal and fossil fuels became unacceptable, NZ moved away to electricity and gas, or switched from coal to electricity as we have done.

“But the increased demand for gas and increased demand for electricity is what has caused this, not just what’s in the hydro lakes. Demand has increased and NZ has not got alternative sources in place.” Source

This is the fate that awaits all of us. And this is why we are being exterminated.

UPDATE:
"New Zealand needs abundant, affordable energy. That's why the Coalition Government is taking a series of immediate actions to restore confidence to our energy sector and remove regulatory barriers that have stopped firms generating electricity or bringing in the fuel that Kiwis need."

Regulatory barriers will be removed for the construction of facilities to import Liquefied Natural Gas (LNG). LNG is used widely overseas to provide flexible and scalable energy supply, and Cabinet has now agreed to legislation consents for an LNG terminal. Source

Soothing words from the PM however:

LNG is very expensive....

"New Zealand can have abundant affordable energy if we clear away the blockages and unleash investment in solar, wind, geothermal, natural gas, and everything we need to keep New Zealand moving."

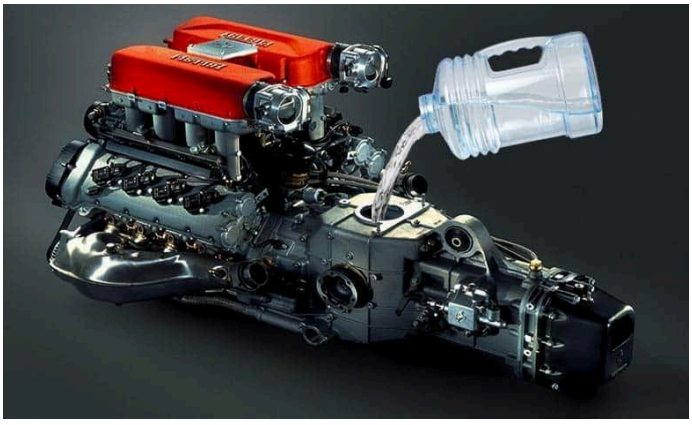
Similarly these are all very expensive…

Conclusion - High energy prices will continue in New Zealand crushing the economy and ultimately leading to collapse. Of course the IMF will at some point step in and put the country on life support (as was done in Lebanon) because allowing countries to crash and burn sends a distressing message out to the barnyard and circus animals.

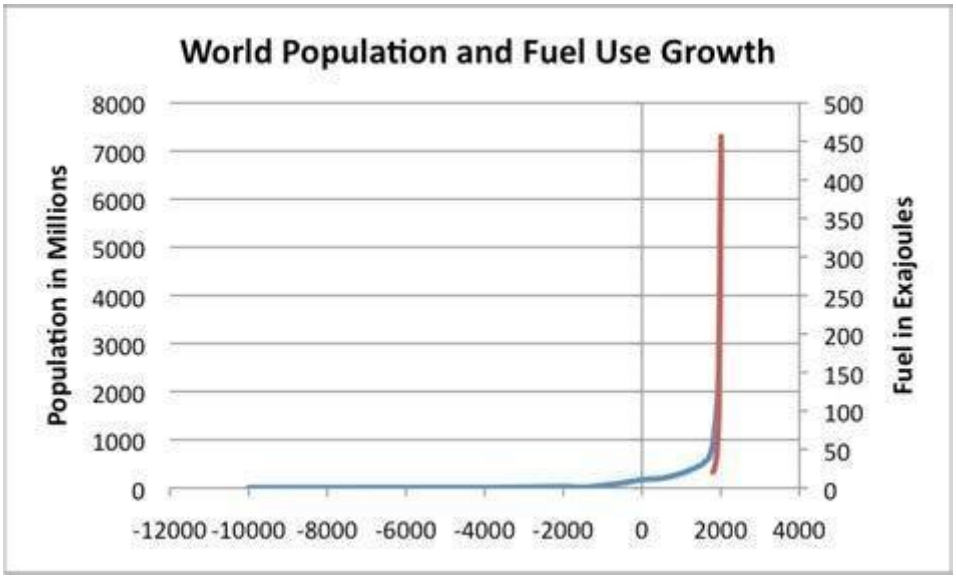
Tough times ahead for the citizens of New Zealand.

The Problem with Cheap Clean Energy
(Published July 4, 2024)

Is that it would only destroy the planet much faster



We've all heard the apocryphal tale of the man who invented an engine that could run on tap water. Apparently Exxon's board of directors hired a hit man to kill him, then destroyed the plans for the engine. If this story is real (it's not) then the board members of Exxon did the world a huge favour. The absolute last thing we need is more cheap energy.



An endless supply of cheap energy, green or otherwise, would accelerate our specie's march towards the cliff edge - and extinction. It would add steroids to the exponential explosion in population.

With cheap free energy, the brake on growth would be lifted and billions upon billions would be able to live large. It wouldn't matter that reduced concentrations of minerals would require us to dig up ten times more dirt to obtain the same tonne of copper. Who gives a shit - energy would be cheap, and clean. Dig down to the centre of the Earth. Turn the planet into a massive open pit mine. Just Do It!

And with cheap, clean energy we could desalinate entire oceans and irrigate deserts and grow enough food to feed 30 billion humans. And because of the cheap energy we could build millions of tall apartment buildings covering every spare bit of planet, and all of these humans would have comfortable homes with AC and heating. F789 Yeah!

Rather than vilifying Exxon for executing the man who created the engine that could run on water, maybe we should celebrate their decisive action that delayed our extinction.

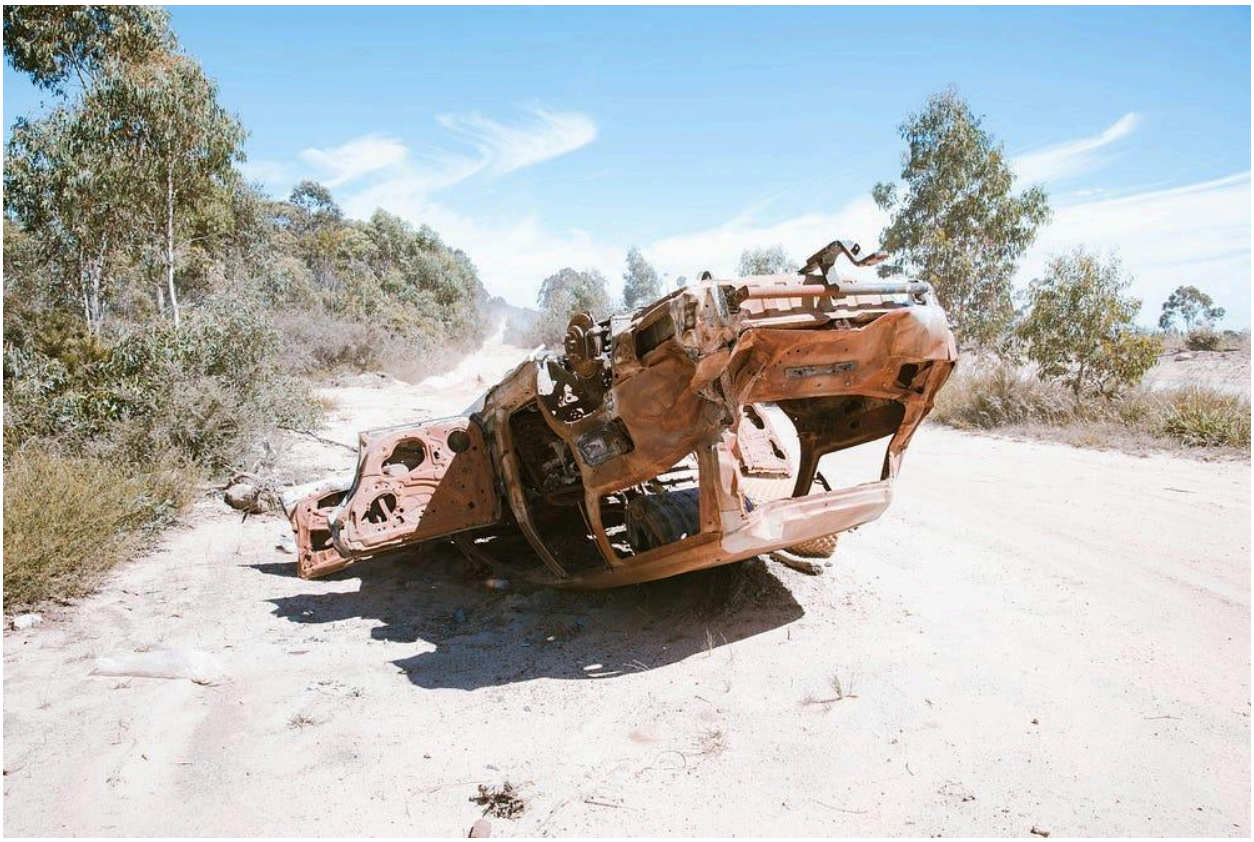
Bio
Nobody wants the truth unless it involves a Hollywood ending.

The Honest Sorcerer

Substack **Medium**

2025: A Civilizational Tipping Point

(Published January 22, 2024)

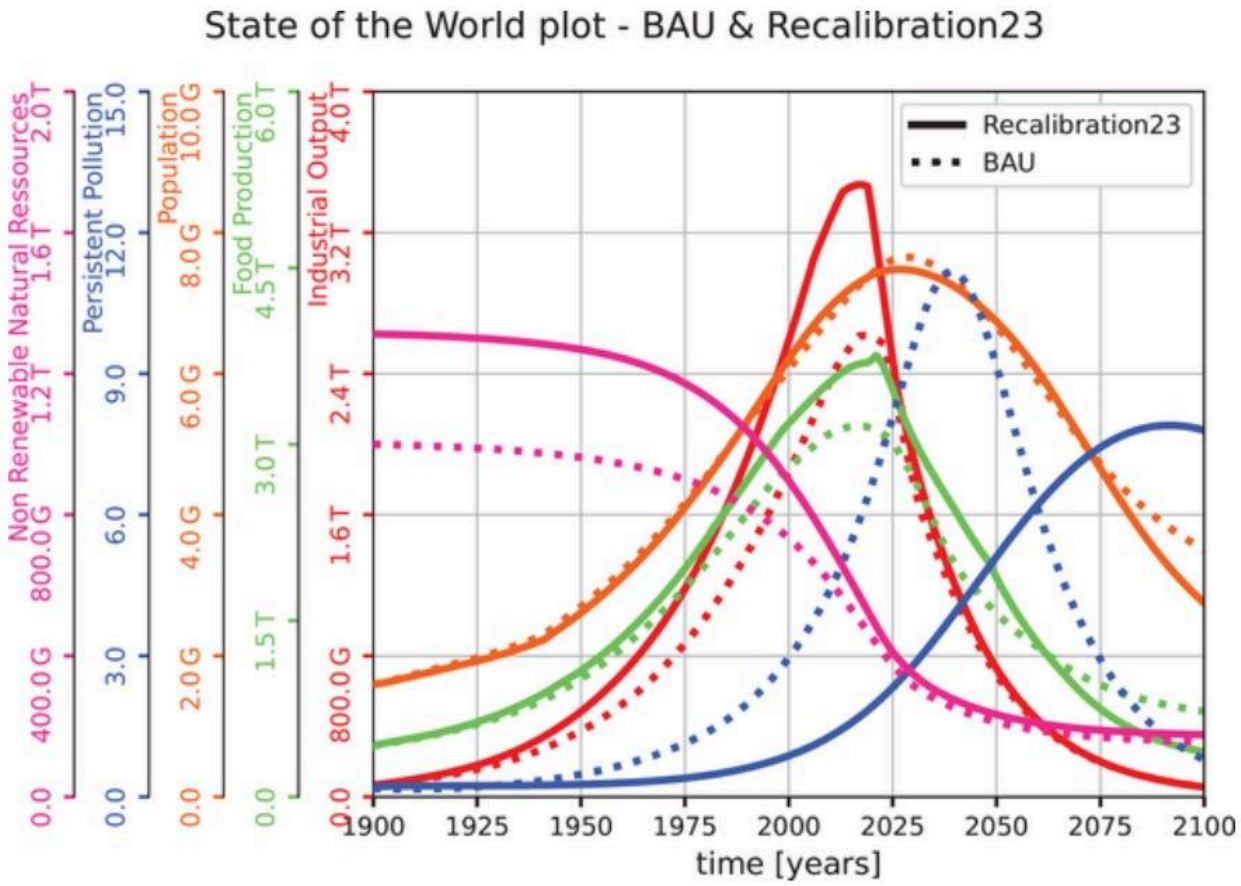


Tipped over. Photo by Jordan Bebek on Unsplash

There is a growing body of evidence that the 2024–2030 period will present us with a critical juncture, upending a centuries-long era of economic growth. No, it will have nothing to do with climate change or novel viruses: those two will come somewhat later. Missing entirely from mainstream discourse there is a greatly overlooked side of our predicament, which will set a nice little 'game of musical chairs' in motion most probably around 2025. Fasten your seat belts, while you can.

We live in a supermassive complex system, often referred to as modernity, industrial civilization, or the world economy. This enormous organism has a life of its own, with its own inputs (resources) and outputs (pollution), as well as its own lifecycle. It is something best understood through the lens of systems dynamics, a modelling method developed in the late 1960's. The first results were published in 1972, in a study titled Limits to Growth. Without going too much into the details, the authors were tracking the many interconnections between five key factors: non renewable natural resources, persistent pollution, population, food production and industrial output, and established various scenarios. One of them was World3, or Business As Usual (BAU).

There were multiple follow-ups to the original study, all published in peer-reviewed scientific journals. All proved the original concept to be correct, and confirmed that we are indeed following the BAU scenario set out in the World3 model. The latest iteration of these follow up studies was titled Recalibration23, published in November 2023.



Recalibration23, improved run compared to BAU. Source

By looking at the chart above from the most recent model run one can easily understand the interrelated nature of the system. Just concentrate on the continuous lines: as resources (pink) go down and deplete, both industrial output (red) and food production (green) goes through a tipping point and starts to decline. As a result world population (orange) peaks and dwindles. Pollution (blue) will keep rising though as people go back to less cleaner technologies and burn just about everything they can put their hands on to stay warm in the winter.

Needless to say, no model is perfect, but some of them can be quite useful. Since our world is immeasurably more complex than what these five factors show, it is impossible to make precise predictions on exactly when and where things will go south. (The same goes for climate modelling, too.) However, these tools are incredibly useful in decoding the cause and effect relationships between individual factors, helping us understand better where we are headed as a civilization. The authors of the study conclude:

> *Like the [Business As Usual] scenario of the [Limits to Growth] publication, the new scenario* ***Recalibration23 reflects the overshoot and collapse mode due to resource scarcity.*** *[…] Here, the model results clearly indicate the imminent end of the exponential growth curve.*

> *The excessive consumption of resources by industry and industrial agriculture to feed a growing world population is depleting reserves to the point where the system is no longer sustainable. Pollution lags behind industrial growth and does not peak until the end of the century. Peaks are followed by sharp declines in several characteristics.* ***This interconnected collapse, or, as it has been called by Heinberg and Miller (2023), polycrisis, occurring between 2024 and 2030 is caused by resource depletion, not pollution.*** *The increase in environmental pollution occurs later and with a lower peak.*

The main message here is that it looks increasingly certain that we will run out of resources sooner than the coming deterioration of the climate could put an end to our lifestyle. (And that's quite a feat, knowing how a growing Earth energy imbalance has accelerated warming recently…) The model also assigns a not so distant timeframe when the whole economic model we thought to be relevant for centuries to come might go badly wrong.

As to the reason why this might indeed be the case, and as an independent corroboration to the study above, I suggest to take a look at the state of the petroleum industry. Why? Well, energy is still the economy, as the basket case of Germany can testify, and despite all the hand waving oil is *still* the master resource, making *all* other energy and mineral resources available. Mining, agriculture, construction, long distance transport, plastics, all hopelessly depend on petroleum. Hydro, nuclear and "renewables" are also made possible by using diesel and gasoline burning vehicles to bring people, raw materials and equipment on site. Should the availability of oil decline, it would eventually bring all other resources and energy production down with it.

In the past couple of posts I already hinted at how the US shale boom will soon come to an end, and also mentioned the net energy predicament besetting the petroleum and mining industry. The process of replacing high yield, low energy cost fields with ever costlier ones is a well known "secret" of the industry, but nary a single soul talks about it outside geologist circles. You see, it's not that we will run out of oil from one day to another, catapulting our entire society into the dark ages ahead, but that oil extraction will return ever less net energy over time… To the point of diminishing returns, resulting in a relentless economic contraction, making any transition to any other energy source impossible. The *Journal of Petroleum Technology*, the Society of Petroleum Engineers' flagship magazine has published an article in 2023 saying just that:

> *"Energy necessary for the production of oil liquids is growing at an exponential rate, representing 15.5% of the energy production of oil liquids today and projected to reach a proportion equivalent to half of the gross energy output by 2050 (Delannoy et al. 2021).*
>
> *When the energy required for the extraction and production of these liquids is taken into account, the* ***net-energy peak is expected to occur in 2025*** *at a level of 400 PJ/d [1]. In the foreseeable future, the energy needed to produce oil liquids could approach unsustainable levels, a phenomenon called "energy cannibalism."*
>
> *The concept of energy cannibalism is becoming increasingly relevant, as mounting energy use in oil production means the very resources needed for the transition to renewable energy may be constrained, particularly when viewed from a net-energy perspective and in terms of economic growth."*

Peak net energy means that no matter how hard we try to replace our declining easy-to-tap traditional oil reserves with tar sands, or ultra-deep wells drilled into the seafloor, beyond a certain point we will no longer be able to increase the amount of oil available for other uses (like manufacturing, transport, mining, agriculture, etc.). *"Energy cannibalism"* does not stop at the peak though: it will continue to take ever more energy to maintain oil extraction as existing fields "mature". Operating drilling equipment, pumping seawater or CO2 into ageing wells to uphold production, delivering sand used in re-fracking existing wells etc. will continue take up an ever larger portion of the oil produced — as well as other forms of energy — leaving less and less for the rest of the economy (2). Is it any wonder then that oil companies have opted to pay back their investors instead of drilling new wells, and called it a day?

And it's not only about net energy, but the overall availability of oil (3). For most of the second half of the 20th century, oil companies were finding more crude than global consumption, around five times the demand volumes. This ratio of discovered resources versus demand has dropped in recent decades, and is now at around 25%. (This means that we burn four times as much oil every year than what we find.) Again, this all ties back to the increased energy demand of finding and drilling into ever smaller, ever more remote oil patches. Why invest in ever more energy intensive drilling methods and exploration then, when the economy can no longer bear the increased energy costs of bringing more oil to the market? A quick glance at how the oil and gas industry spends its profits, confirms all of the above. As an ominous sign of things to come, Occidental Petroleum's CEO warned the Davos crowd already:

> *"2025 and beyond is when the world is going to be short of oil."*

I have a hard time imagining anyone taking her seriously. Despite all the hand waving though, there is now a growing body of evidence ***all pointing towards this date.*** And these are all radically different approaches from wholly independent sources… The Recalibrated23 study, EROEI calculations (Delannoy et al. 2021), investment patterns, not to mention estimates of a peak and fall in shale oil output, all indicate that we are just a year away from a net peak in oil output. And after a brief plateau, all models suggest an ever accelerating decline.

Knowing how petroleum output affects *everything* we do, the significance of passing this civilizational tipping point cannot be overemphasized. Again, this has very little to do with subsidies or finance: we are about to pass a point of diminishing returns from an energetic and geological perspective. And then it really will not matter if we drill more wells, it will no longer provide any additional energy to the rest of the economy. In fact, drilling more wells beyond this point will increasingly act as a drag on the energy system. *Barring an energy miracle it increasingly looks like that from 2025 on we will no longer be able to maintain the amount of material transported, mined, the food grown etc. on a global aggregate. Something will got to give.*

Oil is still the economy, no matter how polluting it is. As net energy from oil peaks, then starts to fall during this decade, it will thus directly translate into a fall in economic output. I hate to be the bearer of bad news, but this means renewed raw material shortages, skyrocketing shipping costs, inflation, and an overall economic decline (4).

And this is where the picture gets murkier. While there might be some not yet utilized boosts to oil production, a hidden gem of an easy to drill oil patch found here and there, one thing is for sure. Petroleum is a finite resource and it's only a question of time when we hit the peak and embark on a long decline.

With that said, crossing such a tipping point is not tied to a single date. At first, it might not even be noticed for months, if not a year. It could be also masked by the ongoing deindustrialization and economic decline of Europe, or a major financial crisis. (Both of which are closely related to fossil fuel availability, just saying.)
Sooner or later though, the oil shock will hit, and the music will stop playing. Everybody will be desperately looking for a seat (except for Europe bleeding out on the floor already). As the first wave of panic is over, however, people all around the world will start to adapt to this new reality, but currently there are no models to predict how exactly this will play out. We will be in completely uncharted territory. Once again to cite the authors of the Recalibrate23 study:

> *However, it is important to note that the connections in the model and the recalibration are only valid for the rising edge, as many of the variables and equations represented in the model are not physical but socio-economic. It is to be expected that the complex socio-economic relationships will be rearranged and reconnected in the event of a collapse. World3 holds the relationships between variables constant. Therefore it is not useful to draw further conclusions from the trajectory after the tipping points. Rather, it is important to recognize that there are large uncertainties about the trajectory from then on, building models for this could be a whole new field of research.*

Talking about the "rearrangement of complex socio-economic relationships…" How about the end of the unipolar world, and the rise of new trading blocks (BRICS+)? Perhaps a global conflict over who gets to burn the last barrels of oil available for export? Or a major financial meltdown upending the current financial system?

Tumultuous times are all but guaranteed in the decades ahead. On a local economic level, large building projects might be cancelled due to shortages and skyrocketing costs, leaving the infrastructure in an ever more deprived state. Remote working could (again) become the norm — at least for those who still have a job. Large manufacturing companies will go bankrupt, one after the other. The detrimental effects of climate change unleashed by burning all that oil, coal and natural gas will become impossible to fend off. *Business as usual will no longer be possible. Welcome to the collapse of modernity, a long drawn out decline.*

With less energy comes less complexity. After a few years, perhaps a decade into this crisis-mode, it will no longer be possible to uphold current institutions and large political structures. The reasons, as always: the gap between interests is too wide, the costs of maintaining central control too high… The US, for example, could easily fall apart along its many already existing fault lines, once the reality of losing it's military-economic superpower status sinks in with the populace. Texas could declare its independence, followed by the North-East Coast, the West Coast, the South-East, leaving quite a bit of no-man's land in-between… The EU and the German Bundesrepublik could also break up into independent states.

After the first wave of collapse so many previously tied up resources would be freed up, that even a few years of renewed economic growth could become possible again. Energy cannibalism will remain a bitch though, and will ask for an ever higher share of energy production to maintain whatever oil extraction remains. So, this moment of relative calm would quickly end, too, this time leading to the fall of central power in many weaker states. After a few decades into this new economic era of involuntary "degrowth", and with a further fall in net energy production, grid electricity together with many services will gradually

become intermittent and unreliable. If you live in the global North and would like to see how you will live in a few decades time, just look at how people live a couple of hundred miles south from you. The weather will be much hotter, rainfall less predictable, and your economic outlook even less so.

> *With an ever shrinking amount of net energy from oil, eventually all of our technologies will become unviable — not that any technology based on a set of finite minerals were viable on the long run…*

There is absolutely nothing new in this. Every civilization — ours included — grew by living up its one time inheritance, be it fertile topsoil or petroleum, overshooting both the natural carrying capacity of its environment and the non-renewable resource base it relied on. Then, as resources got depleted below a critical level, they all went through their respective phases of collapse.

Decline is a perfectly normal, easy to understand part of every society's life. Once you move beyond denial and bargaining it becomes clear as daylight, that it has its causes in our biology, physics, and Earth's geology. There is really no one to blame. There is really no super-duper technology holding the key to saving civilization either. It was a wholly unsustainable proposition from the get go. At this point, if we had access to a truly general AI capable of understanding our world with all its interrelatedness, it would say only this:

"You shouldn't have embarked on this journey, and destroyed the planet in the process to ask me at the very end what to do. There is nothing left to do to prevent collapse. Now, it's time to prepare for a long, hard and bumpy landing. Oh, and try not to exterminate yourselves in the process. Good day, and good luck."

Still, from an individual person's perspective the end of modernity will take an awful lot of time to unfold. However, it will also give us plenty of opportunities to reconnect with our environment, neighbors and family, or develop new skills and traits. Perhaps it will teach us a thing or two about what's important in life, and give a new meaning to our short existence on this planet. Be it as it may, one no longer can bury its head into the sand.

Bio
A critic of modern times, offering ideas for honest contemplation... A mechanical engineer by training working in the field of electrification.

Jack Lowe
jacklowe.com

Slow Down: The Future Is Already Here
(Unpublished–specifically written for this project)

If there were ever any solutions to climate collapse, we needed to have been living by them for decades already.

That's the conclusion I've come to after absorbing countless papers, books, articles, films and podcasts on ecological overshoot and its symptoms — symptoms so diverse that they range from climate chaos to pandemics, migration and war, all interconnected in an extraordinarily complex and dynamic system.

None of these symptoms can be assessed and discussed in isolation because they all affect one another in ways that we'll never fully understand.

Anybody who tells you differently is lying, ignorant of, or unwilling to face up to the surprisingly simple facts of the matter.

In fairness, it's understandable.

Perhaps they have children or grandchildren to whom they can't bear to reveal the truth. Perhaps they have an income to protect or a book to sell. Or perhaps, like most, they are simply incapable of facing up to their own mortality and remain obsessed with the typically human hubris that *we can fix this and turn it around*.

Whatever the reason, proceed with caution at the very least when stumbling across people who minimise our predicament. Maybe avoid them altogether.

You see, we really are in a tight spot. Yes, the impact can be softened here and there but, tragically, catastrophe cannot be avoided or fixed despite what people might say.

William Catton put it neatly in 1980 in his landmark tome *Overshoot*: *"Facts are not repealed by a refusal to face them."*

Mainstream commentary often revolves around endless stats, charts and graphs, which are undoubtedly relevant and useful but their *meaning* is rarely conveyed effectively — what those stats mean to you and me, for the daily lives of humans and other animals and, indeed, for life as we knew it.

In short: we are not in a problem with solutions, we are in a predicament with outcomes.

I've found this a very harsh lesson to learn over recent years and it's really adversely affected my mental health and relationships throughout that time.

It's a lesson that has removed my sense of agency (as I once understood it), my sense of superiority and my sense that we can do anything about it whatsoever other than to slightly soften the blow.

Ultimately, believe it or not, accepting this realisation has done me a fantastic amount of good, which I'll come to later.

Up until March 2020 I had a vision for the future. I thought I knew how life was going to pan out pursuing the picture I'd been sold: be a good boy, go to school, get good grades, get a job for life and then revel in the sunlit uplands of retirement and grandparenthood.

I stuttered along trying to be that good boy but I never really felt like I fitted into the machine. I wanted to earn a living from my photography but boring adults would routinely tell me that that was a hobby and I would need a *real* job if I was going to be truly *successful*.

To cut a long story short, I followed my heart and tried my best to earn a living from my photographs. Sometimes it went well and sometimes it didn't. That's life, right?

One thing remained constant during that journey, though: I was fully devoted to *the system* and to the *cult of busy*.

But then came the Covid-19 pandemic, a time when I was forced to pause, reflect and look around in a way I'd never done before. I couldn't believe what I saw.

The sham of modern life soon became apparent to me. The scales tumbled from my eyes and my naive aspirations for the future were shattered.

They were aspirations sold to us by the runaway machine of neoliberalism and the industrial complex, an omnicidal machine that's blatantly incompatible with the biosphere.

How could I have been so silly as to have missed the blindingly obvious? Why couldn't anybody else see it? Why wasn't anybody warning us?

Oh, hang on...that's right...there *are* people warning us — those climate activists and scientists who've been trying to warn us for decades.

I had been environmentally aware on some level for as long as I could remember but clearly nowhere near enough.

At last, I started listening and just in the nick of time to do something about it, or so I thought. After all, that's the message being pumped out in all directions from the likes of Greenpeace, Friends of the Earth, Extinction Rebellion and Just Stop Oil.

"Wake up! Act Now!" they were shouting at us.

"Oh blimey, they really mean it!" I thought.

I can't remember what first alerted me to the true state of the climate but it will doubtless have been something posted on Twitter that finally pricked my conscience enough to send me down the appropriate rabbit hole.

And it was even enough to make me join Extinction Rebellion in 2022, a month or so before those extremely hot days when temperatures tipped over 40℃ here in the UK.

The mercury hit a scorching 39℃ in my hometown of Newcastle upon Tyne. People often don't realise how far north we are in the North East of England — Newcastle is on the 55th parallel north, the same latitude as the likes of Moscow and the Aleutian Islands.

So, it had finally dawned on me that this was serious stuff! Furthermore, I was well-placed to fight climate change in hand-to-hand combat.

In those moments, the climate conversation had worked on me — I'd *woken up* just like the activists demanded, so much so that I'd even become one of their flock.

I was going to recycle like I'd never recycled before and campaign to have so many wind turbines and solar panels built that they could be seen as far as the eye could see.

I was going to protest until my shoes were all worn through and my larynx eternally sore from yelling "ACT NOW!" at the top of my lungs.

This was the way to do it, right? This was the way to win the war, right?

Wrong.

Never one to rest on my laurels, I kept looking and learning. And, boy, was I in for a shock.

In January 2023, I read Jem Bendell's infamous 'Deep Adaptation' paper and it knocked me for six when I realised that I'd been way off the mark in my understanding. It particularly struck me that the paper was written in 2018, so when he mentioned timescales, I immediately had to deduct 5 years from them.

Collapse was happening much faster, much sooner and much more inevitably than I'd realised. It wasn't until June 2023 that I fully absorbed the meaning of ecological overshoot — that our problem isn't just emissions or plastic or sewage. Our problem is *everything*.

That in itself is a huge concept to wrap one's head around, especially if locked into the fatigued paradigms of the climate movement, a movement which has tragically failed because, in my humble opinion, it has failed to convey the true meaning for people's daily lives whilst also perpetuating the illusion that it can be averted and fixed.

I found it even more disheartening that, despite best efforts, my comrades in Extinction Rebellion seemed unwilling to peep too far beyond those paradigms and face our predicament head-on. My wife pointed out to me that if I'd reached a juncture where the conversations were causing me pain and I was spoiling other people's experience of being in Extinction Rebellion, then it was probably time to leave.

So, with a heavy heart, that's what I did. I say 'with a heavy heart' because I love the people I'd got to know. They are good people. They are part of my community.

However, yet again I felt I didn't fit in. I'd raced past them and was already on a different point of the learning curve, one where I realised our energies were totally misaligned with our actual predicament.

So I continued learning and sharing my findings on Twitter, my main outlet for all this *stuff* and the more I learned, the more I realised that it isn't just climate activists who remain stuck in the quagmire of the tired old stories that we intently tell ourselves — it's eminent scientists, journalists and commentators too.

I found this staggering, not least as the facts of the matter are so simple to comprehend compared to those convoluted stories that comfort us in some way shape or form.

So, what are the facts of the matter?

When the population of any species grows so large that it destroys its own environment and begins to be consumed by the symptoms of its own waste, that population is in ecological overshoot — it has overshot the carrying capacity of its once habitable environment.

As I see it, humans have grown so vast in number that — when combined with our ridiculously self-centred behaviour — we overshot the planet's capabilities to sustain us many decades ago.

The biosphere is collapsing at an extraordinary rate, the likes of which hasn't happened since life began all those billions of years ago.

Simply put, we are now living through the consequences of our behaviour up until the 1960s and we cannot just turn it off like a tap.

No amount of emission reductions, carbon capture, recycling, campaigning or ACTING NOW is going to halt this. It's here to stay and it's only going to get worse.

It has happened so quickly and rapaciously that it's as if an asteroid has struck Earth, which is why the storyline of Adam McKay's brilliant film *Don't Look Up* works so well as a metaphor.

And remember, this is a *metacrisis*, so we cannot just discuss the climate in isolation. To my mind, the five major threats are:

- patriarchy
- climate chaos
- pandemics
- runaway fossil-fuelled AI
- runaway fossil-fuelled war

Many know and discuss the first three but I'm routinely pained when the latter two are overlooked in the context of collapse, when otherwise very intelligent people seem to lose their ability to think and fail to join the searingly obvious dots.

For example, power black-outs are already happening across the planet just to keep the juice running to AI data centres. Those data centres are prioritised over domestic power, so when there's not enough energy in the grid to support both, domestic power loses.

While temperatures soar, people's air conditioning is cut in favour of the corporate machine. It really is that simple and it should tell us all we need to know about the omnicidal machine that keeps the pedal to the metal at all times, driving the wheels of the human enterprise deeper into the quagmire.

Yet still we continue prompting AI, generating articles and imagery, building it into the core of our 'smart' phones and even into our weaponry, all hastily fuelling our demise and still we insist on talking about climate solutions.

It is literal insanity.

And speaking of weaponry, we haven't even properly touched on the topic of war, which is, at the very least, a parallel threat to the incredible forces of climate breakdown.

As one very simple example, the US military is the single largest carbon-emitting institution on the planet, yet so few people seem to know this or are willing to address it.

As another example, the carbon emissions during the Gaza genocide alone are estimated to be the equivalent of 20 small countries, let alone taking into consideration the resulting death and destruction, along with the pollution of the once fertile lands that has now rendered them barren.

People held in high esteem — folk purported to be great thinkers — cite ICC reports as some kind of gold standard yet those reports have failed to include the deathly impact of military activity.

Indeed, in 2022 I asked a famous climate activist:

"How can we have a meaningful climate conversation when military activity is overlooked?"

He paused for a moment to consider his answer and replied:

"Yep. We're screwed."

Despite that succinct response, his public message remains the same — that we can *rebel*, and *turn things around* — and he's far from alone.

Do you see? There are so many major forces at play that make most climate conversations moot at best. It's all so incongruous and ridiculous.

This kind of talk means that people like me are labelled a *doomer*. I have a problem with that particular label as it's pejorative and othering — yet another flaw in the human condition that's sealing our rapid demise.

I prefer to describe myself as a *reluctant realist*, as somebody who has actually done something that so few seem willing to do — undertaken the emotional labour of looking deep into the abyss, grieving for our situation and then accepting it.

As an *active messenger*, I've then shared as much of these thoughts, findings and feelings as widely as possible, predominantly via Twitter but also in real life within my community.

So what do we do? And what's the point?

Firstly, we must collectively pay attention, acknowledge and lean into our predicament.

As Indi Samarajiva wrote last year:

"To accept defeat against nature (whatever that means) is not an end to discussion. It's a start."

The fastest thing we need to do is slow down and, whenever possible, stop.

That can mean...

• walk more
• drive less
• drive slower
• consume less meat and dairy
• buy less
• travel less
• work less

...anything that helps to stifle the omnicidal machine to which we've become accustomed. These are things that many of us have agency over right now. Today.

There's a more comprehensive list in my pinned tweet if you'd care to take a look.

Will we decide to slow down? No. We're too addicted to our high octane lives, absurdly obsessed with material wealth even though the warning lights are flashing faster and brighter on the dashboard than ever before.

In all honesty, I've come to realise that I don't need to concern myself with these things because — if you really are paying attention — you'll notice that nature is already slowing us down.

How many video clips have you seen of flooded airports, for example, or cars being washed away as streets become raging torrents?

Or how many people do you know who can't work as effectively as they once did because of Long Covid or other related ailments?

Nature is already firmly grasping the reins in the most efficient ways.

After all, nature *just is*. It is only ever objectively achieving equilibrium in an incredibly complex and dynamic system. That's all. And that observation alone can be too much for many people to bear.

The ultimate 'climate action' is to stop reproducing, to actively decide not to bring children into an increasingly tempestuous world that cannot be fixed. Such is our hubris that even that notion is seen as controversial when it's actually just a simple, objective fact.

Next, we must realise that life isn't all about *us*. We are a part of life, not apart from it.

We are all atoms in different forms. We are the soil, the birds, the critters, the creatures, the ocean, the rivers, the rocks and the sky.

To acknowledge that, as things stand, all the evidence points towards nature spontaneously creating life and all we seem set on doing is destroying it.

If we were to acknowledge our oneness, we might realise (as Bernardo Kastrup writes) that our purpose in this beautiful place is simply to pay attention and be the best possible conduit for nature to work through us. And that's all.

How much simpler and more magnificent our lives become when we slow down, wind our necks in and accept that it's not all about us and that, instead, it's all about nature and we're just here for the ride.

Life is death and death is life. We are all brothers and sisters. We are all the same. And that is perhaps the ultimate acknowledgment to make — that if we were to release our egos and our sense of self, and instead acknowledge our connectedness, our oneness, then what a revolution that would be.

How empowering to know that the revolution we seek already exists within us, and it would drive the billionaires and oligarchs mad for us to finally unite and make that leap of faith in one another.

It wouldn't fix our predicament but it would at least soften the blow and make what little time we have left more tolerable.

The world is changing, and it's changing fast. If you're not seeing what's unfolding by now, then it's time to pay attention because the asteroid has already impacted.

If you feel unaffected by it so far, that doesn't mean it isn't happening.

As William Gibson once wrote:

"The future is already here — it's just not very evenly distributed."

You know that bit in *Don't Look Up*, the bit where the people in mission control start whipping off their headsets and dashing out of the room saying things like 'I'm going home to be with my family'?

That's where I'm at.

Yes, you might want to store some dried food. Yes, you might want to make sure you've got a way of filtering water. Yes, you might want to make sure you've got ways to generate heat and power. Yes, you might want to stash some cash.

But beyond those simple pieces of prepping advice, we don't know what we're planning for.

This active messenger wants you to know, at the very least, that we might want to consider creating new ways to spend more time with our loved ones and doing the things we enjoy most.

At the end of the day, the omnicidal machine is not our friend and life is literally too short — the future is already here and it's getting more evenly distributed by the minute.

This isn't negative or pessimistic. It's realistic. Acknowledging the nature of *our predicament with outcomes* certainly requires courage, emotional labour and fortitude, but it is ultimately the most powerful action we can possibly take. Now. Today.

Recommended Reading:

Ishmael by Daniel Quinn (1992)
Overshoot: The Ecological Basis of Revolutionary Change by William Catton (1980)
Thinking in Systems by Donella Meadows (2015)
Breaking Together by Jem Bendell (2023)
More Than Allegory by Bernardo Kastrup (2016)
The Road by Cormac McCarthy (2006)

Bio
I'm Jack Lowe, an active citizen and documentarist endeavouring to shine a light on the greatness of others through photography, audio, film and words.

For many years, The Lifeboat Station Project has formed the crux of my working life–an epic ongoing mission to document all 238 RNLI lifeboat stations around the shores of the UK and Ireland.

However, I've also reached a point in life where I feel acutely aware of the predicaments we face, particularly ecological overshoot and the symptomatic breakdown of pretty much everything–more specifically, the breakdown of our climate and the collapse of our civilisation.

I've been on a whole new journey of research and learning through which the scales have been falling from my eyes.

The upshot is that it no longer seems appropriate or *enough* to simply write about my project.

As well as creative matters, I now feel the need to share my thoughts more openly on climate and societal breakdown too. Not only that, but to discuss these sometimes overwhelming topics with you.

I explain further in a blog post called Climate Crisis: Be The Sentinel.

Justin McAffee
Collapse Curriculum

Common Threads in Societies That Collapse

(Published August 28, 2024)

Introduction to Collapse Part I - The Past

History is a tale of rise and fall, of civilizations that flourished, only to eventually collapse. As Henry Kissinger once said:
"Every civilization that has ever existed has ultimately collapsed. History is a tale of efforts that failed, or aspirations that weren't realized. So, as a historian, one has to live with a sense of the inevitability of tragedy."

I'm going to cover three broad topics in this introductory series on collapse. We are going to look to the past to understand why societies collapse, the present for warning signs, and the future to understand how we might respond.

I became particularly interested in this topic a few years ago when I started noticing that we are completely ignoring harsh realities… many ticking time bombs that would threaten global society. I lived in Las Vegas, Nevada for many years, a place where Lake Mead, the primary water supply for the entire region, is 75% empty and dropping. Despite this and other warnings, local and national leaders insist on moving forward with unprecedented growth, adding a million more people to the city in the next few decades.

I started wondering why a society would simply ignore what is happening before their very eyes. It turns out that this is a common thread throughout history as societies collapse. Jared Diamond offers several insights into this with relevant examples in his works, including his Ted Talk (embedded below), and his book "Collapse."

I'm going to highlight three common threads Diamond points to among collapsing societies that are most prescient to our situation: rapid collapse after societal peak, the danger of strongly held social beliefs, and conflict between the short-term interests of elite decision-makers and the long-term interests of the society as a whole.

Rapid Collapse

Rapid collapse often comes in as few as a decade or two after a society hits its peak in power and population. The Soviet Union is an example where they achieved the pinnacle of their global power in the 1980s and quickly collapsed by the early 1990s. Or one could look to the Classical Maya civilization where collapse occurred within a decade or so of their peak population and construction of their greatest pyramids. A third example would be The Western Roman Empire, a significant power through the 4th Century, until it experienced a rapid decline within just a few decades during the 5th century. There are many more.

What does this mean? The rapid increase or decrease of certain trends are an indicator of the likelihood of collapse. By examining the rate at which critical factors (like resource depletion, population growth, or political instability) are changing, one can gauge whether a society is moving towards a potential crisis. A

rapid increase in negative indicators or a rapid decline in positive indicators can be a warning sign.

At present time there is an acceleration of countless indicators we could call “ticking time bombs” that don’t at present moment show any signs of being confronted by global society. Not only is this fact troubling, but even if global society put them front and center in their priorities, our ability to address all of them seems highly implausible. It only takes one bomb going off to do significant damage.

Strongly Held Values

One of the paradoxes that societies run into prior to collapse is that the very values and beliefs that made the society strong and powerful do not serve them well when reaching tipping points. They often simply double down on the very beliefs that are causing the collapse. From that perspective, it’s easy to see why.

Jared Diamond points to the Greenland Norse society that collapsed in the 1500s. This society was held together by a strong commitment to religion and strong social cohesion. But this very fact made it difficult for them to change in the end. Rather than reserving diminishing resources for their resilience, they insisted on continuing to build cathedrals. Rather than praying, and disregarding their neighbors as savages, they could have learned from the Inuit people who were thriving in the colder conditions.

The present global empire is based on a foundation of very strongly held beliefs about power, growth, wealth, self-interest and individualism. They are the tenets of the global economy. When this global society is then presented with information that conflicts with those tenets, such as the Limits to Growth, environmental degradation, mass inequality, these threats are often ignored and ridiculed. This is a recipe for disaster.

Short-Term Gain vs. Long-Term Wellbeing

Societies that collapse typically have an internal conflict between the short-term interests of the powerful rule-making elite and the long-term wellbeing of the society as a whole. This becomes a particularly challenging problem when the ruling elites are able to insulate themselves from the consequences of the damage done.

Among the Greenland Norse society, competing chiefs wanted to outcompete neighboring chiefs. So they engaged in deforestation and exploitation of labor at its max. They refer to this as flogging the land. These

practices were obviously contrary to the long-term interests of the society and contributed to its collapse.

Of course this problem is acute in the United States today. The ethics of business and even the civil laws encourage or require that corporate officers prioritize short-term profits over any other cause. This includes any expense to the ecology, and to the wages of laborers. Without question they believe they can and should continue to do this despite the ticking time bombs threatening our long-term wellbeing. Government policy predominantly supports this ethos.

Where We Are Headed

We can see each of these common threads from historical examples of collapse in present day society. This ought to be a warning to us that we are headed for rapid collapse and the low probability of escaping such a fate.

This may be unsettling information, but knowledge is power. Before you despair too much, consider that our fate and the fate of the empire aren't necessarily entwined. Yes, the Mayan empire collapsed. The Mayan people, however, carried on in more sustainable numbers, returning to simplicity and village life. Collapse isn't historically the end. We cannot know the future, but we can live in the present to the best of our ability. That's what this newsletter/blog is all about.

In Part II we will look more closely at the present day empirical data and a study that suggests we are on track for collapse within a few decades. I will then conclude this Introduction to Collapse with Part III on what sort of response we can practically take as individuals, small groups and communities to be resilient in the face of these dramatic changes.

I'll have links here when they are published.

Click on image for link.

Part II Part III

Bio

Justin holds a Scout Instructor certification for his participation in the 2023 Urban Scout and Survival Class; 2022 year-long guided training; and the 2021 Mojave Survival Camp in Las Vegas, Nevada.

Justin's film work has received broad acclaim, including his most recent release "**If the Desert Tortoise Could Speak**" where viewers experience the perspective of the imperiled reptile.

Justin received a bachelor of arts in film from Nevada State University in the spring of 2022.
He is the producer and director of a film series, **Desert Apocalypse (https://youtube.com/@mcaffeefilms)** which won Best Documentary at the Yucca Valley Film Festival, Texas Short Film Festival; Silver State Film Festival, and an official selection at the Nevada Women's Film Festival. The films cover the conflict between the development of enormous solar energy projects in the Mojave Desert and the living ecosystems they are wiping out.

His first film, **Great Basin Water Protectors (2018),** inspired his pursuit of a film degree. It follows the story of Native people on a prayer run to protect water and land in the Great Basin from a 300 mile water pipeline.

As a photographer, Justin's work has been displayed in gallery spaces in the Las Vegas area, including the Clark County Wetlands Park and an award-winning photo at the Sahara West Library. His photographs have adorned the halls of government buildings and billboards and have been published in national outlets such as the Associated Press, LA Times and Forbes.

Prior to his photography and film career, Justin worked in the political realm, working on numerous electoral and advocacy campaigns. His interest in political thought and action go back to his early childhood interactions with his father, a professor of American constitutional law. As early as 2008, Justin was an early devotee to the blogosphere, publishing The Nevada View, earning recognition on the Washington Posts' list of Best State-Based political blogs.

Justin now resides in the Pacific Northwest, exploring the enormous forests and coastlands, working on his writing here on Substack, book projects and his next film.

Matt Orsagh
Degrowth is the Answer

Jevons Paradox
[Published March 25, 2024)

Why green energy won't work – without degrowth.

In economics, **Jevons paradox** occurs when technological progress increases the efficiency with which a resource is used (reducing the amount necessary for any one use), but the falling cost of the use of that resource increases demand enough so that resource use is increased, rather than reduced.

English economist William Jevons laid out what became known as Jevons paradox in his 1865 book *The Coal Question*. Jevons saw that England's use of coal increased after the introduction of the Watt steam engine. The Watt engine made coal-fired steam a more efficient power source, which led to an explosion in the use of coal.

Jevons paradox leads to the "rebound effect" in energy use, where the efficiency of a system first makes the demand for a resource less, due to efficiency, but that energy use "rebounds" as more of the new efficient process (the steam engine, gas-powered cars, solar panels) is used.

This is the opposite of what we need if we are to use less fossil fuel energy. Remember, over 80 percent of the world's energy is still fossil fuel-based, so even improvements in clean or "green" energy that leads to cheaper solar and cheaper wind, causes a rebound effect, which results in more energy use, with still 80 percent of that fossil fuel-based. That 80 percent is going down, but only by a percentage point or two per year.

We need to use less energy.

If someone tells you that green energy can solve climate change or other environmental problems, ask them what they plan to do about Jevons paradox and the rebound effect.
They likely won't have a good answer.

So, what do we do?

We use less energy, that is what we do.

But how do you do that?

Well, you have to fight the rebound effect. Because the rebound effect isn't going to go away just because you ask nicely.

Combating the rebound effect takes action. As energy efficiency gains come, and they always come, policy needs to keep up – which has never been the case. Limits on the use of energy that keep the costs steady or higher could be used. Some free marketers won't be happy with that, but the alternative – ever-increasing energy use and ever-increasing environmental damage - isn't a good option.

A change in mindset and a culture change is required. A change in how we see and use energy is required. We need to change our mindsets, and the functioning of our markets so that the ecosystem comes first.

This can involve the removal of subsidies that result in an overuse of energy, or overconsumption of energy. This can mean higher taxes on energy use past a certain threshold for businesses and consumers. This can mean a cap on energy use to ensure that energy prices don't continue to drop with efficiency gains.

Remember, if we put the biosphere first – which is what we should do, because we live there – we need to price the externalities of energy use.

That won't be easy. Cheap energy is one of the main ways politicians get elected and stay elected.

The story we tell ourselves is that abundant and cheap energy makes our lives plentiful, which makes us happy.

Not so. Abundant and cheap energy keeps GDP rising. That is not happiness.

Cap energy use.

For the most part, Western societies have never operated with a cap on energy use. Maybe that time has come.

A policy that caps energy use would be unpopular today, which is why we need to start talking about it. People need to understand the purpose behind such policies and laws, with sufficient lead time to digest the changes, and a gradual dialing down of energy consumption.

As I've stated before, we need to include the cost of energy inputs and their externalities in our economics.

In addition to capping energy use, or appropriately taxing energy use, we could increase our focus on circular economies, promote more sharing of resources, and change the cycle of conspicuous consumption that is part of many Western economies.

Degrowth is the answer … to addressing Jevons paradox.

So degrowth is the answer – or part of the answer.

Most of what I've written about in this space has been about using and consuming less.

- A four-day workweek
- Eliminating bullshit jobs
- Universal basic income
- Universal basic services
- A jobs guarantee
- Eliminating planned obsolescence
- Leaning into population decline

These and many other issues I've written about are about using less. Not out of any need for austerity, but because using more doesn't make you happy. Using more makes shareholders happy. Using less makes you happy. Using less makes shareholders sad.

I'm not trying to make shareholders sad. I'm a shareholder myself. But I'm a human being looking to survive first. That takes precedence.

It should anyway.

An economic system that sees Jevons paradox as the problem it is and actively plans to combat it is a step in the right direction.

It's a step we need to take.

Bio
I have been a researcher, analyst, writer, podcaster, and worker bee in the financial industry for over 20 years. I want to help push the degrowth conversation forward so that we as a civilization can get where we need to be.

Jordan Perry
[Substack]

Make Preparations

(Published August 10, 2024)

The End Is Near. Or Not. Who Cares?

“Did you hear about Phil?”

“No.”

“He died.”

“Oh no.”

“I know, right? But at least he died doing something he loved.”

“What was that?”

“He died living.”

“Lucky bastard.”

“Amen to that.”

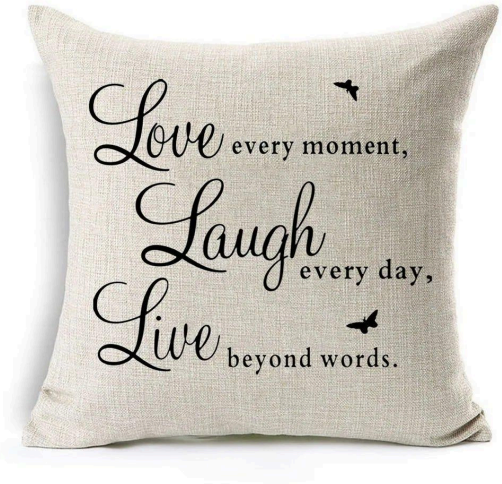
Any discussion about living is a discussion about dying. This is the existential reality of the style of thinking assumed to be exclusive to the homo genus among earthly creatures. It’s our personal doom loop & despite our feelings of superiority over our creature kin, I imagine I’d prefer the cool comfort expressed by the squirrel in the road any day. This deep thought trip is a drag. But I digress.

We know of many standard cultural responses to the existential dilemma of living toward death from our guru class including: Live in the moment. Be here now. Make today matter. Om.

Whether one sees our quirky, quixotic journey of civilization as endless ascendance or certain doom, the reality of individual death inevitably informs much of the roiling conflict many feel in life. Waves of fear, doubt and insecurity crash the shores - producing endless hand wringing over the punishingly ironic death sentence of life & the bloodthirst for legacy or, for some, providing a calming backdrop of meditative noise that serves as the foundation of their acceptance of the gift of existence, here and now.

Have I worn out my word salad buffet pass yet? Probably. And yet the gentleman persists.

There are examples of calm grounding all around us. Some settle on prayer or meditation. Some find solace in the grace of wisdom mined through aging. Some read self-help books, invest in talk therapy, or buy pillows & art work emblazoned with “Love, Laugh, Live” or some equivalent cotton-candified emotional puffery. Some do forest bathing, barefoot grounding, partner with an emotional support animal, or any of the nearly endless nature-themed options. But are all these activities just copium-in-action, like playing checkers when the game is chess?



The most obvious source of enlightenment should come from those who precede us in death. The hard earned section of the acceptance of death library is filled with volumes of tales from the hospital, morgue, hospice and funeral practices. Some even now have access to medical aid in dying services, choosing, rather bravely, to face their own demise with agency. Most though, battle to the end, waging a war they are sure to lose with bigger bets on less likely outcomes. Nearly all of these people who laboriously fight to the finish are honored in death - with platitudes & talk of their “love of life”, “commitment to family”, “belief in god”, “service to society” or any of the other standard songs on the death jukebox. Stay yoked to the big lie and receive the adulation from the left behind - quit on it with intention and get a cold shoulder from the masses.

It’s all rather pathetic if you ask me, the curmudgeon in the back of the room mocking the immaturity homo colossus has embraced since we abandoned tribe. How’s that for a shocking turn of tone? And yet the gentleman persists.

Death, like life, is sacred. To me, the “purpose of life” is, in fact, death. All living things are cycling nutrients, endlessly serving the community of life by interacting with the living world to, in the simplest terms, feed the living world. Is this too banal for you? Is there a need for it to “mean something”, or is this the curse of

our navel gazing buffoonery, our hijacked ego overtaking our capacity to just be? Further, in no way does the deep meaning I find in being a nutrient cycler a lesser outcome than the idea that we're "the" fullest expression of meaningful sentience on the planet, tasked with caring for all of it while building a legacy that will outlive us and our progeny. You don't have to agree with me but I'm OK with being equivalent to a grub, gnawing away at dead wood only to be dug out of the log by a hungry bear and eaten up. I see only success in all our varied paths to the end.

But what is "the end"? Well now we've crossed into a wading pool too deep for a floundering man without water wings. Let's stay in our lane, which is the ongoing collapse of Global Industrial Civilization & the reality that homo colossus (us) is functionally extinct, on the glide path to doom for the community of life due to our hubristic pursuit of ascendance.

Let me clean up that last passage with my elevator speech version.

Global Industrial Civilization is in collapse from overshoot & homo colossus is functionally extinct.

Is that so different from: You are a creature of finite life, born into inevitable death?

Both demand you sit upright and attend to a reality you'd rather ignore. Youth & vibrance appear immune to death just as a busy airport or Times Square seem to be immune to collapse. And yet both also carry the scent of certain death, always lurking right behind the curtain. And that lurking sense of doom is what drives us to the comforting narratives of prayer, meditation, therapy or those annoying pillows I find so objectionable. My proposal is that the approach we take to both the obvious and controversial inevitable ends are dishonest, spawned by an immature creature who forgot who we are and why we're here and have enacted a story that defies reality. Thus, it would make perfect sense that this creature would be structurally unable to make headway with accepting our predicament and doing anything about it.

But what is there to do? We're back to the list. Be here now. Live in the moment. Make everyday count. There isn't anything to do, other than accept the gift of life and make every effort to be present in & for it.

Boldly: You are, in fact, doomed. One way or another. To me, the fierce headwinds the Collapse Acceptance movement (whatever the hell that is) has faced are no different than the denial & avoidance of individual death so prevalent in our culture. While there is energetic debate over the truth of Collapse that would

make the notion of acceptance thereof controversial, there is no debate over the inevitably of our individual death. And yet our individual death sentence is toyed with like a phony mouse for an indoor cat. Sometimes, she ignores it. Other times, she engages vigorously. Eventually she simply tires of it and behaves as if it doesn't exist anymore.

What's my point, beyond letting my wordsmith off leash in the thesaurus park?

I'm afraid I don't have one. And, further, I assert that I don't have to have one. This requirement to phrase everything in a problem/solution format and to have a logical, empirical, science or faith based explanation for all of it is part and parcel of our disorder.

It just is. You just are. This too shall pass. And not just flatulence. Your life. Your legacy. Your interminable sense of self worth. And that's just fine. Civilization too shall pass, as all before have and any subsequent will. Acceptance is the only way forward.

Everything seemed just fine, but now that I see the wreck it was obvious all along...

OK, I lied. I do have a point. I always have a point. If you can navigate the acceptance of your personal demise, you can navigate acceptance of the collapse of Global Industrial Civilization. Both are, actually, empirically true and inevitable. We can debate timelines. We can debate specific causes. But we can no more debate the functional truth of each reality than we can debate the rising of the sun. It just is.

Moving past the “prove it” stage of endless growth versus inevitable collapse is the same as moving past the “peek-a-boo” stage of toying with your inevitable individual death. At the risk of oversimplifying something so complex, it just is. And that’s OK.

If there is work to do, it begins with acceptance and passing through that unmarked door, closing it behind us, and revealing a new realm of possibilities, informed not by absurd fictions of forever but instead grounded in the reality of now and the truth of the consequences of living.

Lucky bastards we are.

And now the gentlemen relents.

Vanlife inevitably leads to Vandeath.

Bio
I am a participant in the community of life.

Dr. Tony Povilitis

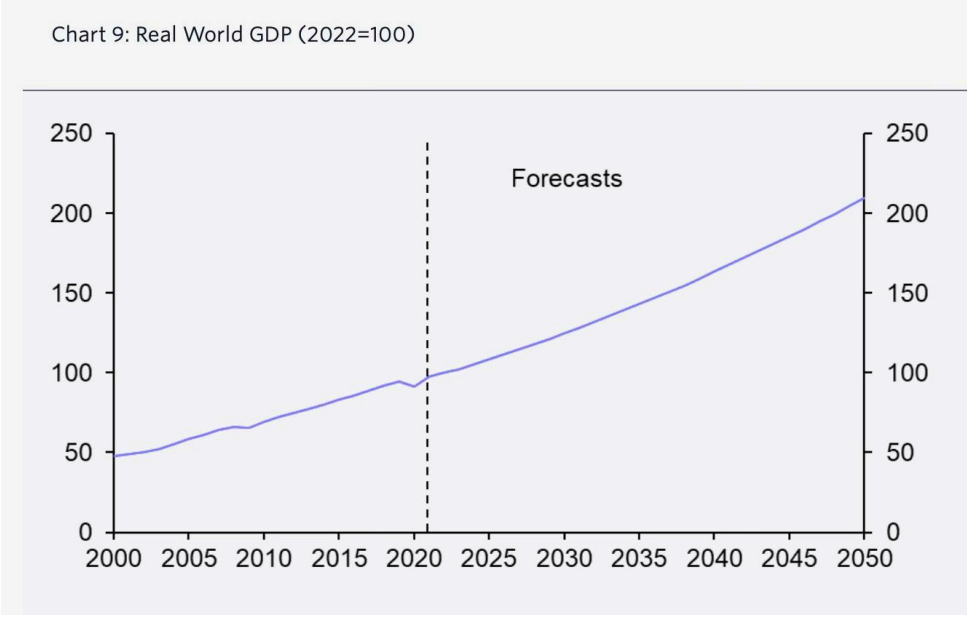
Scale Down

Big Trouble for the Living Planet in 5 Graphs

(Published April 9, 2024)

Earth at night, Asia. NASA image.

1. ECONOMIC GROWTH — At a growth rate of 2.5% per year, the global economy will double by 2050 (see graph, which roughly corresponds with forecasts by the World Bank and others.)

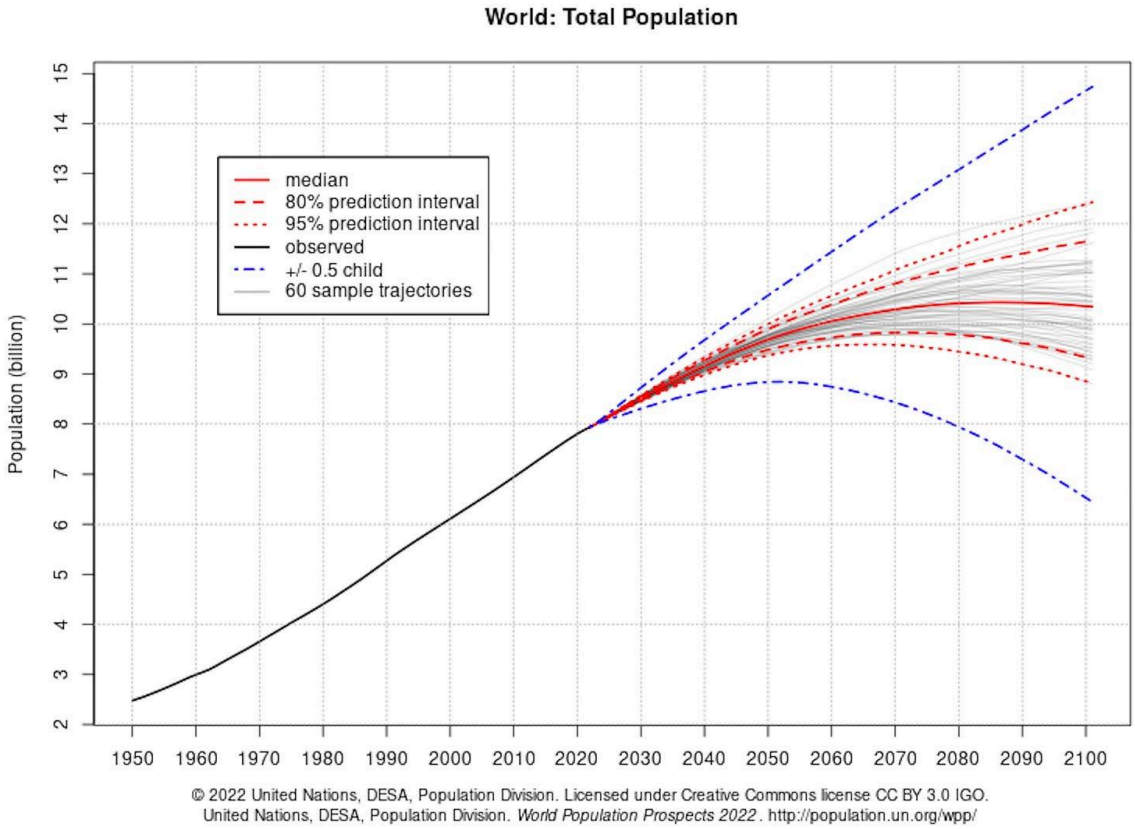


Growth in the world's Gross Domestic Product ($ trillion) through 2050.
Graph from Capital Economics Long Run Economic Outlook.

Pollyannas: No problem. We can double the global economy, save nature, and prevent the worst of climate change through technology, improvements in efficiency, and better environmental policies.

Scale Down Realists: There is no way the world economy can double without further degrading the biosphere. You have to ignore history to believe that it can. Technology, efficiency improvements, and better environmental policies have been talked about and, in some cases, implemented for well over a half century yet the natural world continues its downward spiral. Sure, to some extent we can mitigate the loss of life through various means, but there's no end to it in sight unless we decelerate growth well before 2050.

2. POPULATION — A global population of 9.7 billion humans by 2050 is expected, up by 1.6 billion from today. The population will likely stabilize but not before 2080.



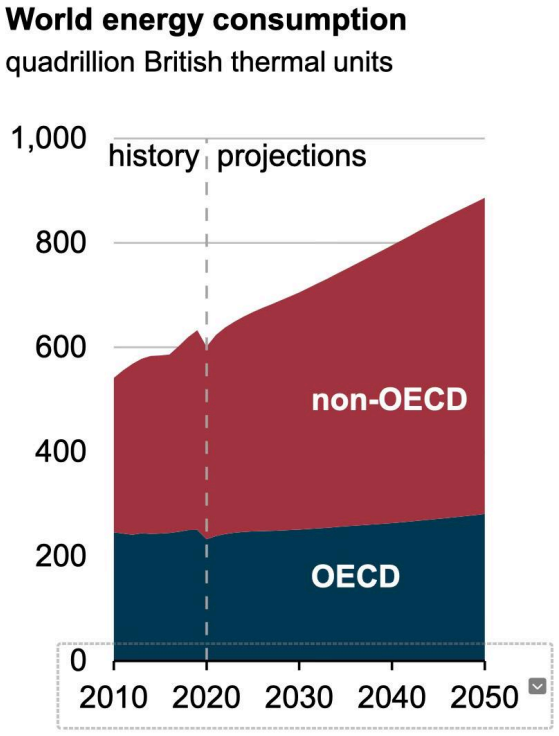
UN population growth scenarios through 2050 and beyond.

Pollyannas: Global fertility is declining and this will result in only about 10.4 billion people as population growth eventually ends. The world can easily support that number of people through agricultural reforms, reduced food waste, dietary changes, and the like.

Scale Down Realists: To equitably support 10 billion people, you're betting on broad-spectrum changes in human behavior unmatched in industrial civilization's history. Moreover, where's the evidence that the global environment will benefit from an even larger human population? The living world can't afford more competition from an additional 2+ billion of us. We need to lower fertility to the replacement level by 2040 to ensure a population peak below 9 billion. This can be done by further empowering women, by

promoting family planning, by increasing the availability of contraceptives, and through education on the advantages of small family size.

3. ENERGY CONSUMPTION — By 2050, global energy use is expected to increase by about 50%, mainly because of increased burning of fossil fuels in less affluent countries.



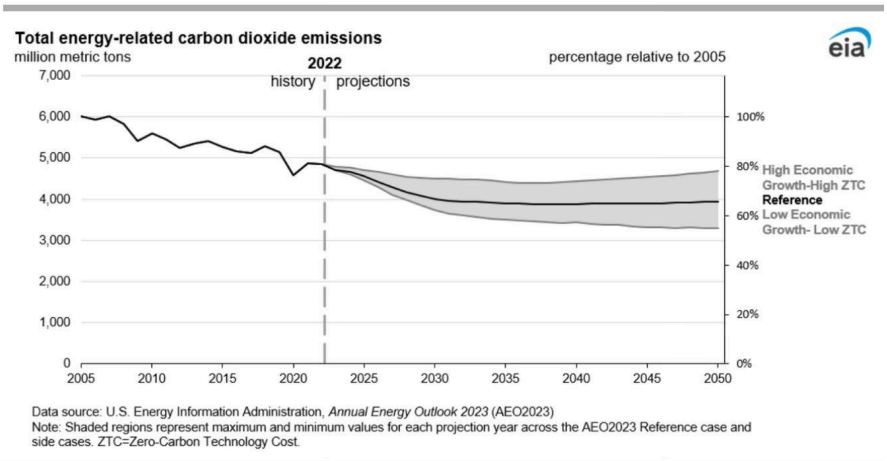
Source: U.S. Energy Information Administration,

EIA graph showing projected global energy consumption through 2050. The OECD includes nearly 38 countries with collaborating market-based economies that promote economic growth. Members are among the most affluent countries of the world, and represent about 17% of the world's population.

Pollyannas: We can supply the raw materials and vast infrastructure for solar, wind, and nuclear power to accommodate a 50% increase in global energy consumption.

Scale Down Realists: And, in doing so, further transform the world's land and seas in ways harmful to most of the living world.

4. CARBON EMISSIONS — To avoid the worst consequences of climate change, carbon emissions must be largely eliminated, leaving zero excess CO2 in the atmosphere by 2050. However, projections indicate that global carbon emissions will remain far above zero through 2050 (see graph). Some anticipate an actual rise in emissions through 2050, while others say that, in a near perfect world, it is possible to fully replace fossil fuels with renewable energy before then.

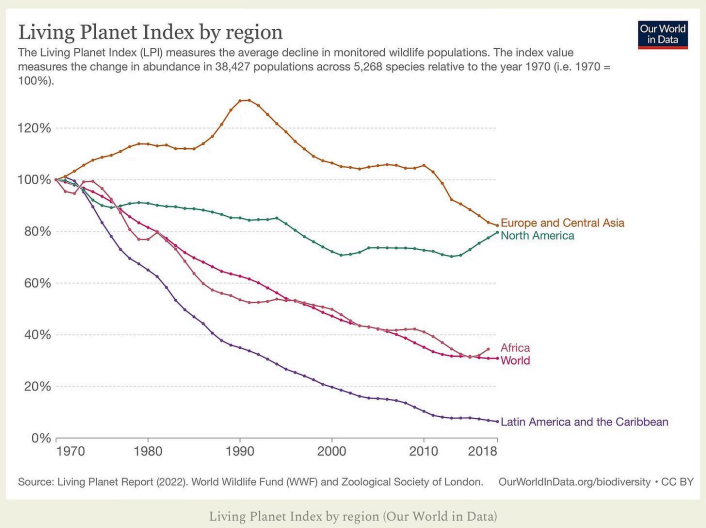


Projected CO2 emissions through 2050. Source: EIA

Pollyannas: Don't worry, the shift from fossil fuels to renewable energy can be made while increasing global energy consumption. We will "decouple" carbon emissions from economic growth in time to avoid a global climate disaster.

Scale Down Realists: You're willing to gamble the world's wellbeing on a decoupling theory? However probable or improbable the theory may be, the rush toward 100% renewable energy means re-industrialization with major impacts on ecosystems and people. Burdened with a massive (and still growing) world economy and population, the promise of averting acute climate change while protecting the Earth's environment can be rightfully termed a neoliberal fantasy.

5. VANISHING NATURE — Urban land is expected to double or triple by 2050, causing further loss of wildlife. Hundreds of species will also be at increased risk from agricultural and industrial expansion during this timeframe. Since 1970, wildlife populations have suffered sharp declines throughout the world (see graph).



Living Planet Index by region (Our World in Data)

Wildlife population trends, 1970-2018.

Pollyannas: Better management of wildlife, land, and water will stem and reverse the biodiversity decline.

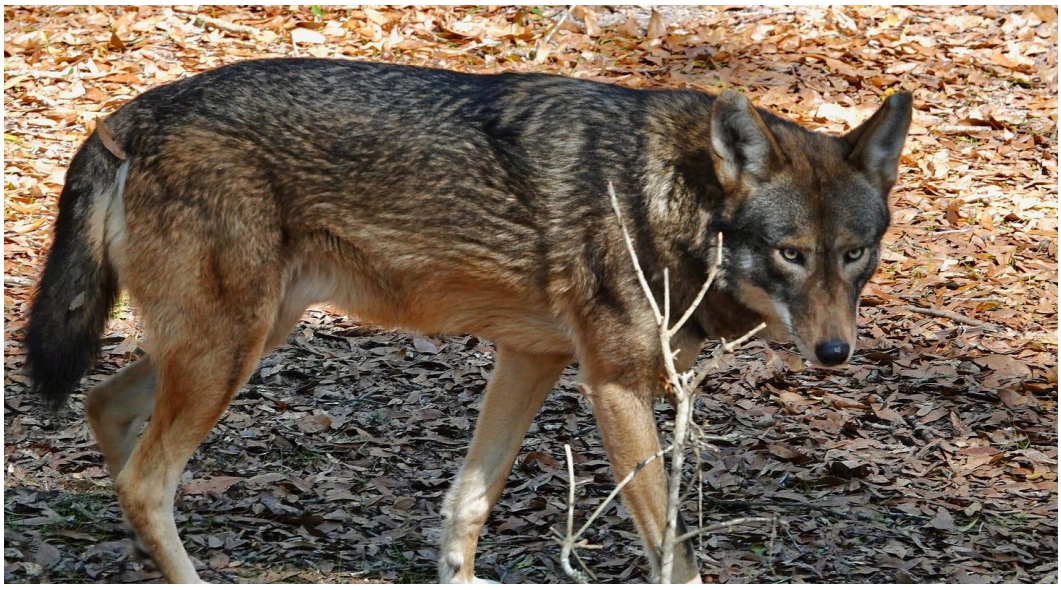
Scale Down Realists: Since when has that happened? If one needs a smoking gun to prove that human overgrowth has harshly degraded the biosphere, look no further than the global decline of wild animals and plants over the past half century. Apart from abundant documentation in scientific papers and reports, my wildlife biologist colleagues and I have agonizingly witnessed first hand the sorry effects of human encroachment on wildlife and nature across multiple countries.

A Plea for True Sustainability

Dear Pollyannas:
Please end your propaganda war against nature. Stop promising the extremely improbable: that, in three decades, after doubling the human economy, adding 1.6 billion more of us, and greatly expanding our energy consumption, we'll triumphantly save the living world and a wholesome climate!

> *"...The miracle is not to walk on water or in thin air, but to walk on Earth. Walk in such a way that you become fully alive, and joy and happiness are possible. That is the miracle that everyone can perform....If you have mindfulness, concentration, and insight then every step you make on this Earth is performing a miracle."* — Thich Hat Hanh

Step up for a livable world!



In search of a future, the red wolf, a critically endangered animal. Photo: T Povilitis.

Bio
Dr. Tony is a wildlife biologist and keen observer of people and nature. He concludes that only by scaling down humanity can we ensure the wellbeing of both.

Charles Hugh Smith
Of Two Minds

Our Three Taboos

(Published July 2023)

This essay is my summary of our global situation and why there are no real solutions within the current system, which justifies itself with a series of mythologies and taboos against questioning these mythologies.

In everyday usage, the word taboo refers to cultural rules of conduct that smooth social interactions. For example, in America, it's taboo to start eating before the host has taken a seat at the table. These behavioral taboos define what's acceptable (polite) and unacceptable (rude).

The classic definition of taboo is what must be forbidden to maintain the social order. At the top of the list in many cultures is sex.

In the modern era, the economy is the dominant force in society, defining our social relations and our relations to the natural world. As a result, the most powerful taboos are fundamentally economic.

In my analysis, there are three taboos that are so dangerous that we are forbidden from even recognizing them, much less discussing them.

1. The economic system is out of sync with human life and the planet's biosphere.

2. This system severs the links between work, family, community, the natural world, agency, security, meaning and the moral universe, leaving us unmoored, ill, insecure, anxious and deranged.

3. Forging replacement links requires breaking free of the system. The system is designed to sever the links of human life to benefit itself, and so it's impossible to forge new links within the system.

The system validates and justifies itself with a mythology that institutionalizes these taboos and demands compliance with the system's fabrications of how the world works and what's important.

The system's myths that cannot be questioned are:

1. Progress is having more of everything. The essence of Progress is growth: ever-expanding income to consume more and acquire more wealth and possessions.

2. Prosperity is the limitless expansion of desires satiated by the ceaseless expansion of consumption.

3. Technological advances are the unstoppable engine of Progress. Human ingenuity knows no bounds.

4. Our economic system is the best possible system because it generates the best of all possible worlds. As a result of our economic system, we have the best of everything.

It is taboo to question any of these core mythologies. To question the inevitability of Progress, Prosperity and Technology is to obstruct the advance of civilization, a mortal sin that must be punished.

The beating heart of these mythologies is desire is limitless, for we always desire more comfort, convenience, novelty, luxury and *engagement*, the pleasant-sounding cover-word for addiction. Comfort, convenience, novelty, luxury and *engagement* are code-words for profit, as the desire for more of these powers the endless expansion of profits.

The fabrication at the heart of the system's mythologies is that earning a profit by satisfying desires is good for everyone. Those reaping the profits are fulfilling our insatiable desire for more comfort, convenience, novelty, luxury and engagement.

This happy narrative leaves out the key features of the system, which are 1) the system benefits the few at the expense of the many, and 2) the system severs all the links that are the foundation of a healthy, meaningful human life.

In our economic system, the primary mode of existence is consumption. Consumption is the source of purpose, social roles and identity. The primary activity is transactional, i.e. shopping and making/spending money. Whatever doesn't serve the expansion of consumption and profits is stripped out as extraneous or an obstacle to the flow of profitable transactions.

The benefits, consequences and costs of this system are asymmetrically distributed, meaning there are winners and losers. The benefits (profits) flow to the few who own the production, marketing and global plumbing delivering goods and services, while the consequences and costs are distributed to the workers and consumers.

The mythologies focus solely on the benefits showered on everyone. The consequences and costs are left out of the happy narrative. Every policy, product and service has costs and consequences. Since these are asymmetrically distributed and often invisible until much later, the mythologies glorify the benefits, which are defined by our desires for more comfort, convenience, novelty, luxury and engagement and the profits earned by satiating these desires.

The costs and consequences are hidden, obscured, rationalized or dismissed. To bring up costs and consequences is to question the mythologies, and that is taboo. Those calling attention to the costs and

consequences are ridiculed and delegitimized (i.e. you are a Luddite who seeks to deny humanity the benefits of Progress, Prosperity and Technology).

The Carrot and the Snack

Consider a raw carrot. To the system, the most important feature of a raw carrot is its low profitability. There is little that promotion, branding and packaging can do to persuade consumers to pay more for a raw carrot to boost profits.

The most important feature of a raw carrot to the human body is that it is a natural food packed with nutrients and fiber. It is easy to store and transport and can be eaten raw or cooked. It can be eaten alone or mixed into stews, soups, salads and casseroles. A raw carrot is highly beneficial to human health.

None of this overcomes its terrible, unfixable flaw: it doesn't lend itself to boosting profits, which is the system's *Prime Directive*.

The system's solution to this inherent flaw is to process the carrot into a product that can be marketed as a new advance in comfort, convenience, novelty, luxury and engagement, attributes the consumer will pay more for.

A few shreds of the carrot are cooked into mush and added to a concoction of starch, sugar and low-quality fat that is dyed with artificial colors to match a carrot's color and marketed as a "veggie snack" ("contains real carrots!").

The nutritional value of the product is nil and the health consequences of consuming what is basically a greasy confection are entirely negative. The list of chronic (and eventually crippling or fatal) diseases incurred by a diet of processed food devoid of fiber and nutrients, high in sugar and low-quality fat, is long.

This highly processed snack, deceptively marketed as "veggie" to deceive parents into assuming it is a "healthy snack," is immensely profitable, and so the system cheers its soaring sales and copycat products proliferate to grab some of the expanding profits.

The engagement aspect of this carefully engineered product is especially pernicious. The product is specifically designed to hijack the human brain's pleasure centers much like a powerful drug. Its mouthfeel is designed to be addictive, and the heavy doses of sugar and fat activate our hard-wired predilection for what is scarce in the hunter-gatherer diet, fats and sweets. *Bet you can't just have one*.

Not only is this manufactured confection devoid of nutrition, it's designed to be addictive. As every dealer knows, there's nothing more profitable than an addiction that generates a reliably insatiable demand.

This describes not just addictive drugs and processed foods; it describes the whole of consumerism, which is a carefully cultivated and reinforced addiction to consumption as the defining dynamic of selfhood, status and indeed, of life itself: *I shop, therefore I am*.

Should any consumers lodge a complaint about the deceptively advertised 'veggie snack' with the government agencies tasked with protecting public health, they will find the corporate lawyers and lobbyists have neutered public influence by spending whatever sums of money are needed to buy the compliance of government agencies and elected officials.

The product is declared safe and anyone complaining about the deceptive packaging is told that it's up to consumers to choose which products to buy or not buy: *caveat emptor, buyer beware*.

This process of boosting profits by masking the costs and consequences is not just entirely rational in the system, it's the only available avenue. Anyone who chooses not to maximize profits and political spoils by any means available is fired for incompetence.

All of this is taboo, of course. Anyone who describes the system as it truly is must be marginalized, first with an accusation of violating the American taboo against negativity. Not finding a silver lining or expressing hope for positive change is an unforgiveable shattering of the taboo everyone understands: you must be relentlessly positive and cheerful under all conditions. There is an entire library of cheery slogans at the ready to ensure the proper dose of positive spirit has been administered, no matter how insincerely. If life gives you lemons, make lemonade.

So when we move to the next example—the immensely profitable market for pharmaceuticals that partially alleviate the symptoms of the lifestyle diseases caused by consuming processed foods—we find a happy marriage of profitable causation of lifestyle disease and even more profitable alleviation of lifestyle disease symptoms. There are plenty of subsidiary winners in the profit bonanza as well: university departments funded by corporate interests, lobbying firms handsomely paid to spread the good news, politicians harvesting campaign contributions, think-tanks paid to distribute the apologists' favorite cover-story for the cartels-monopolies-dominated system, "the free market," and so on.

Once we tune in to the siren songs of comfort, convenience, novelty, luxury and engagement, we find them everywhere. The smart phone is a wonder of comfort, convenience, novelty, luxury and engagement, for what could be more addictive than having shopping, addictive games and the hyper-stimulation of social media (i.e. *eight billion channels of Me*) at our fingertips? An addictive device enables access to a wealth of other addictions, all in service of our insatiable desire for comfort, convenience, novelty, luxury and engagement.

What's not to like? Nothing. The smart phone is the epitome of Progress, Prosperity and Technological wonder. Just as the consequences of consuming the "veggie snack" are hidden, so are the costs and consequences of manufacturing and glorifying addictive technologies.

Out of Sync

Let us now return to the three taboos:

1. The economic system is out of sync with human life and the planet's biosphere.

2. This system severs the links of human life between work, values, family, community, the environment, agency, security, meaning and well-being.

3. Forging replacement links requires breaking free of the system.

An entire book could be written about each one, but let's attempt a shorthand summary.

Before we explore how the system is out of sync with human life, let's briefly touch on the system's decimation of the planet's biosphere and resources to fuel growth, Progress and Prosperity.

The system deploys denial and deflection to mask the accelerating destruction of ecosystems as it gathers the resources needed to produce and profit from goods and services. As long as the bulldozed forests and toxic waste are in someone else's country, it's conveniently out of sight, out of mind.

An endless stream of technological fixes are touted to deflect attention from the unsustainability of the pillage. One example is the highly publicized 1,000-foot-long boom which was deployed to clean up the Texas-sized Great Pacific Garbage Gyre between Hawaii and the West Coast. The absurdity of the tiny boom—or 100 such booms—cleaning up such a vast sea of garbage, much of it beneath the surface, is ignored, as the key message is "there is always a technological solution."

Once we consider the vast scale of the problem generated by the economic-system juggernaut, we realize the puny efforts proposed as "solutions" are nonsense. But stating this arouses instant attack, for questioning the mythology that "there is always a technological solution" is breaking a taboo.

Even if this delusional technological "solution" could be scaled up, who will pay the immense costs of the "solution"? In the mythology of Progress, every new technological advance becomes an affordable product or service that generates billions of dollars in consumer sales and profits: consumers pay for the technological solution. The mythology is not just that there's always a technological solution; the new technological wonder-solution will also be profitable.

But consumers won't pay for cleaning up the Texas-sized Garbage Patch, as there is no product or service that advances their comfort, convenience or status. Since there is no product or service, there's no profit to be reaped. All that's present are the destructive consequences and monumental cost.

No government will pay for the clean-up, either. The Garbage Patch is in international waters, and most of the plastic originates in developing nations. There's no pay-off for a government to clean up the Garbage Patch, as there is no politically powerful constituency that will benefit from the clean-up. Rather, those powerful interests make far more compelling claims on limited government funding.

Who pays the price of stripmined seas and ravaged ecosystems? These externalized costs are never included in the corporate production costs or price paid by consumers. Studies have found that if corporations included all these externalized costs, no corporation would be profitable. In other words, the trillions of dollars in "profit" accrued every year are actually the unrecognized value of the natural capital that was extracted and the unpaid costs of the damage left in the wake of the corporate pillage.

Whether the corporation is privately owned or owned by a government, it makes no difference. The system is fatally out of sync with the planet's biosphere. Sustainability is a marketing ploy, not a reality, because sustainability simply isn't as profitable as pillage and externalizing the costs and consequences of pillage.

The benefits—profits—are recognized and valued by those accumulating them. The costs and consequences fall on the biosphere and eventually, on humanity as a whole. This is the Tragedy of the Commons on a global scale: profits are private but externalized costs are dumped on a powerless public.

But this isn't the only unsurmountable problem with the system. Even if this wildly impractical fantasy "solution" actually gathered up millions of tons of plastic debris, where would this mountain of plastic be transported to be disposed of? Would it be compressed into a plastic-garbage island? Who would be responsible for this artificial garbage island?

The third insurmountable problem gets to the real heart of the system's unsustainability: what would be the point of this clean-up if the system continues churning out new mountains of floating waste every year? Since *waste is growth in this global Landfill Economy*--the faster products fail or become obsolete, the greater the growth of consumption and resulting profits—there are powerful incentives to increase the flow of garbage into the seas and landfills and none to reduce it.

The absurdity of the mythology that "there's always a profitable technological solution" is painfully obvious, but woe to anyone who breaks the taboo by stating this truth, for the system demands a happy narrative of techno-solutions to justify its pillage.

The system is also out of sync with human life.

Human beings are constantly evolving via genetic, epigenetic and cultural adaptations. Genetic adaptations are slow and require many generations to spread through the entire populace. Epigenetic adaptations can occur within a single generation if the selective pressure (such as starvation) is severe enough. Cultural adaptations—learned behaviors and knowledge—are adapting constantly.

The vast majority of the human genome has been selected over hundreds of thousands of years—roughly 800,000 from the split from other human species such as Denisovans, and roughly 200,000 years from the emergence of home sapiens sapiens—for a communal hunter-gatherer lifestyle. Many of the traits of human organization—social hierarchies, for example—are shared with other primates such as chimpanzees, traits that go back millions of years to our shared ancestors.

The rapid expansion of cultural adaptations—toolmaking and other technologies—has generated an assumption that humans are almost infinitely adaptable and can do just fine in just about any environment or social system. Humans habituate very quickly to new environments; even the most wretched (the Gulag prison camps) are quickly normalized.

As a result, the near-infinite adaptability of humans has been elevated to mythology.

But this ignores that our genetic heritage was selected to prioritize the most consequential survival traits for the individual and the species: a sensitive, profound relationship with the natural world, a moral universe of obligations, duties, reciprocity, sacrifices, sharing, fairness and communication, ownership of work and strong links to family, friendships and community.

To the degree these can be met within an environment, humans can adapt to that environment. If adaptation requires severing all these links, human life has lost its essential foundations, and individuals and society become distorted and deranged.

The expansion of technology, especially the technologies of energy that power all other technologies, has created an expectation that there will always be new technological advances that 1) generate ever-larger quantities of energy for our consumption, 2) painlessly fix whatever problems previous technologies have created and 3) enable us to modify any environment to suit our needs and desires.

These four assumptions have gained the status of mythologies that are taboo to question.

To question whether we're actually happier in a "concrete jungle" than in a real jungle is to instantly be dismissed as a Rousseau Romantic, foolishly glorifying the inconvenient, uncomfortable primitive world that we were delighted to have left behind. That modern life has delivered advances is not what’s being contested; what’s being challenged is the claim that we’ve lost nothing but the physical risks and discomforts of the pre-industrial age.

Not every concrete jungle is identical. Those that leave space for the foundational links of human life are livable. Those that sever these ties are not.

This defense of modernism deflects inquiry from the costs and consequences of the modern lifestyle of atomized individuals constantly prompted to 1) feel insecure about their status and selfhood; 2) respond with fear, angst and anger to media and social media click-bait; 3) make more money so they can consume more, and 4) indulge their every desire ("you deserve it!").

These costs and consequences are not limited to finance or direct effects (i.e. first-order effects); they also spread out into every nook and cranny of human life (second-order effects).

The full consequences are difficult to discern, as the happy narrative and marketing cover every experience and transaction with a smothering layer of goo.

Regardless of the environment, healthy, secure human life is constructed of links between individuals, families, communities, the natural world, the moral universe and the ownership of work.

Our economic system severs all these links as impediments to the ideal consumer: atomized, with only superficial ties to others (social media) masquerading as meaningful ties, burdened with anxiety and insecurity about their identity, status and social role, restlessly disconnected from place or values, stripped of the ownership of their work, addicted to medications, drugs, gaming, social media, pornography, mobile phones, travel, shopping and self-absorbed self-promotion, in poor health, wounded and stressed, teetering on the edge of burnout or rage, clinging to one tribal identity or another, including "brand loyalty" and celebrity worship, seeking distraction in "entertainment," stripped of agency and authenticity, alienated from the realities of the system they inhabit but well-trained to “be positive” even as their already constrained control of their life frays into the fatalism of social defeat.

This brings us to the third and most dangerous taboo: that there is no way to re-establish the severed links of a healthy human life within the system. Those seeking to maintain these links must migrate to the margins, detach themselves from the mythologies and marketing, find ways to regain ownership of their work and the value of their work, reclaim the values and limits of the moral universe, savor and strengthen ties with family and community based on reciprocity, sharing, fairness and honest communication, and acquire oneself (in Kierkegaard’s phrase) by regaining agency and authenticity.

We can restore these links by withdrawing from the system and pursuing self-reliance, integrity, authenticity and autonomy. We’re told that what matters is others’ reaction to us, and so we seek to shape those reactions to fill our needs for approval and belonging in a system stripped of authenticity, agency and meaning. But these reactions say nothing about us; they speak solely to others’ relationship with themselves and the system.

The system values profits, self-promotion, signifiers of status and power over others and their work. From the perspective of a healthy, grounded human life, these are not just valueless but deranging.

What those who break free of the system value most, the economic system considers without value, except as empty marketing slogans that harken back to what's been stripped away in "the best of all possible worlds."

What is actually valuable has no price and is not for sale.

Getting Back in Sync

What will it take to get back in sync? It will take a new system with a new set of incentives, a new set of values and a new understanding of sustainability. All of these require a new mythology and a new set of taboos. That's the focus of my work.

Until this new system is in place, we can restore these links by withdrawing from the current system and pursuing self-reliance, agency, ownership of our work, integrity, authenticity and autonomy.

Bio

At readers' request, I've prepared a biography. I am not confident about this, as bios veer uncomfortably close to PR. On the other hand, I'm reminded of the "Peanuts" comic character Lucy, who once shared this terse biographical summary with Linus: "A man was born, he lived, he died." All undoubtedly true, but somewhat lacking in narrative interest.

I was raised in southern California as a rootless cosmopolitan: born in Santa Monica, and then towed by an upwardly mobile family through Van Nuys, Tarzana, Los Feliz and San Marino, where the penultimate conclusion of upward mobility, divorce and a shattered family, sent us to Snow Country in the San Bernadino mountains.

We spent the summer of 1968 in the Highland Park neighborhood of Detroit as one of two Anglo-Euro families in the 'hood, the other one being our Armenian landlords. I described a bit of this eye-opening experience in my book A Hacker's Teleology: Sharing the Wealth of Our Shrinking Planet.

The next jaunt took us to the island of Lanai in Hawaii, where I was honored to join the outstanding basketball team (as benchwarmer), and where we rode the only Matchless 350cc motorcycle on the island, and most likely in the state, through the red-dirt pineapple fields to the splendidly isolated rocky coastline. In 1969-70, Lanai was old planation Hawaii, where I picked pineapples in summer with my classmates beneath a sweltering sun, the only local haole to do so because there were no other local haoles except my 13-year old brother, the principal's daughter and the doctor's daughter.

My friend (and co-conspirator) Colbert Matsumoto and I launched Lanai High's first (and to my knowledge, only) underground newspaper, the Cop-Out. It was rumored that the administration thought it was

published by a wayward teacher or two, but it was Colbert and I taking our first stab at journalism and truth-telling. (Colbert went on to an outstanding career in truth-telling on a much larger stage.)

…(click on the link above to read the rest).

George Tsakraklides
tsakraklides.com

Biology Lessons In Degrowth

(Published July 28, 2024)

Every economy which fails to manage its growth eventually destroys itself. Humanity has embraced continuous expansion, a concept no different than cancer.

Pausing or stopping growth altogether is essential for all living organisms – and this is why every single species on this planet comes with genes that are dedicated to managing growth. Degrowth is an ancient natural process older than humanity itself: so incredibly essential to life that no living organism can exist without it. As this civilisation runs out of road, the hints and reminders of how degrowth can save us are everywhere, if we only woke up from the glycemic coma of our economic diabetes.

When faced with drought, plants immediately activate elaborate emergency procedures which take them through a drastic, yet life-saving process. These genetic protocols not only conserve water within the plant, but dictate exactly how each of the plant's remaining resources is reallocated, down to the last molecule. The amount of detail encoded in these protocols is so vast, that it takes up a sizeable proportion of the

plant's DNA. The fact that evolution went through all the trouble to create extremely detailed emergency procedures for a controlled slowdown, highlights just how vital degrowth has been to the survival of life on this planet over the past 4 billion years.

Degrowth is in fact so important that, organisms routinely shut down elements of their body altogether, as a "maintenance and rest" routine procedure – regardless of whether there is a real need for it or not. Degrowth is simply healthy, in the same way that a fast is. The best type of degrowth is practiced as a pre-emptive measure at a time of health and abundance, not when it is too late, to ensure that maximum resource is conserved for the difficult times ahead.

Deciduous trees shed their leaves in the autumn, bringing their metabolism to a screeching halt way ahead of the incoming bad weather. In this way, degrowth is not a painful process for the tree, as it is practiced in a slow, planned and controlled fashion, when the tree is actually at peak health, right after a robust growing period. By contrast to this subtle, controlled cycle of natural degrowth, human economies go through extremely painful boom and bust cycles of growth and collapse. This is because in-built degrowth mechanisms do not exist. Profit never knows when or how to slow down, and this is why profit is by its own nature self-destructive.

Some of these degrowth processes abundantly found through nature involve the termination of healthy cells within the body, so that the rest of the organism can survive. Deciduous trees would not make it through the winter if they couldn't shed their leaves, as these leaves would drain the tree of its energy during cold weather. The leaves must be terminated so that the tree can consolidate its energy and rest. When deciduous trees shed their leaves in the fall, there is a specific degrowth pathway taking place: PCD, which stands for Programmed Cell Death. Programmed Cell Death is also called apoptosis: a Greek word derived from "ptosis", which literally means "to fall". Once the small layer of cells connecting the leaf to the tree trunk is terminated via PCD, the leaf simply drops, after all of its essential nutrients have been sequestered by the tree. The beautiful scenes of foliage swirling in the wind that we see in autumn is one of nature's biggest annual demonstrations of planned, painless, natural degrowth that ensures trees will survive over the winter.

But even in the face of unexpected heat or drought, plants do everything they can to cut down on their resource spending and investment on new projects: any green shoots are stopped dead in their tracks. Next are flowers and fruit: they are extremely expensive for the plant to produce, so they are either completely aborted, or become much smaller but with perfectly formed seeds inside, so that there can still be a next generation.

Now that the plant has stopped growing and dropped fruit and flowers, it actually has significantly lower water and energy needs, which means that it can afford to lose some of its energy factories: its leaves. Although this sounds suicidal, it helps the plant minimize evapotranspiration, which overwhelmingly happens through leaf pores. By dropping leaves as a measure of last resort, plants manage to essentially lower their monthly bills down to almost zero, avoid complete dehydration, and manage to survive the long wait until the rains arrive. Beneath that yellow, parched summer lawn, there are healthy, living grass roots. Grass is a plant that can go through multiple apoptotic cycles in just a few weeks, constantly alternating between PCD and active growth depending on the weather. Grass does this so effortlessly and efficiently,

completely at peace with the reality of hanging at the edge of death. And this is how it gets to see better days.

There is so much we need to learn from trees, from grass, plants and animals who practice degrowth with their eyes closed. Because our civilisation is not entering a temporary drought or winter event. It is entering a permanent depletion of the resources it has been taking for granted. This means that our society must live and breathe degrowth on every level, every minor detail of this complex economy, if it has any chance of making it. The traditional economic approach of "growing" out of a crisis would be the fastest way for this civilisation to commit suicide, yet this is exactly what all of these energy transitions and green new deals are proposing: jobs and prosperity, at a time when humanity should be tightening its belt over its enlarged circumference. As long as profit is toxic, more capitalism won't save us. Continuing on a path of growth and consumption is equivalent to feeding an advanced diabetic patient with high fructose corn syrup, and putting them on a treadmill to give them a heart attack.

The problem with growth is that it has become dogmatic, supported by centuries of religious, colonialist and consumatronic propaganda. It is time we begin tearing down the biggest misinformation campaign which has been at the center of our civilisational lie: growth. Apoptosis is part of the natural life cycle of every living being on Earth: from tulips that crawl back into their bulbs each year, to tumbleweeds who die just at the right time to be picked up by the wind and disperse their seeds throughout the desert, to a banana that turns brown. It is time we begin to pay attention to these life forms that appear to be orders of magnitude smarter than us.

Bio

George trained in molecular biology, chemistry, food science and Earth sciences before leaving the science world for a career in data analytics and marketing sciences. He has worked for some of the world's biggest corporations, where he became an expert in consumer marketing and gained a deep understanding of the inner workings of some of the most profit-driven and exploitative forces in human society.

After two decades in this business, he ultimately realized that his interest had always been in ecology and humanity's broken relationship with nature. He has written fiction, non-fiction and poetry, always around the theme of civilisational collapse and humanity's inevitable self-destruction. Because of his background and experience, George approaches the topic of human self-destruction using multiple lenses that often draw parallels between fields as diverse as biology, ecology, anthropology, philosophy, cognitive psychology and economics.

Over the years George has appeared on Radio Ecoshock, Regeneration Journal, Naked Capitalism, Activism Is Medicine, Collapse Chronicles and many other outlets exploring the environmental and civilisational polycrisis.

George splits his time between the UK, US and Greece and is active on Twitter @99blackbaloons.

Dr. Peter A. Victor
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Escape From Overshoot: Economics For A Planet In Peril
(Published April 4, 2023)

Escaping Overshoot[1]

There is overwhelming evidence that human impacts on the zone of life on Earth - the biosphere - have surpassed sustainable levels in several crucial respects. We are in Earth 'overshoot'. Of course, there are huge differences among people and nations in relation to their contributions to overshoot and its effects, both historically and now. There is also a disturbing disconnect between those primarily responsible for overshoot and those most vulnerable to its consequences, and the situation is getting worse.[2]

Concern with overshoot, or with symptoms of it such as climate change and the loss of biodiversity, has led to various proposals for rethinking and reorganising economies. These proposals include steady-state economics, regenerative economics, doughnut economics, degrowth, ecosocialism, well-being economics, and circular economy.[3] 3 Each of these proposals includes recommendations for policies. However, there are significant differences in the extent to which fundamental changes in the economic system are called for. These range from the modest reforms of a circular economy and regenerative economics that are intended to make capitalism more efficient, to the more radical economic, social and political transformations that are essential to degrowth and ecosocialism.

Escape from overshoot, whether by reformist or revolutionary means, will require more than generic new policies, many of which face stiff opposition for reasons of ideology and self-interest. A successful escape will need a sustained collective effort towards shared objectives at all scales from local to global, if it is to be thoughtfully planned rather than thoughtlessly imposed through the failure to change in time. In the process will emerge detailed programs of action which will be different according to time, place, and specific circumstances. As a step in this direction, I propose a set of propositions on which an escape plan could be based. If broad agreement can be reached on these from local communities to the United Nations, it will make the detailed planning work of who will do what, how, and by when that much easier to accomplish.

Fourteen Propositions for an Escape from Overshoot[4]

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[1] Adapted from Victor, P.A, Escape from Overshoot. Economics for a Planet in Peril. (2023) New Society Publishers.

[2] For a summary of the evidence for overshoot see chapter one of Victor (2023).

[3] For a brief account of each of these proposals see chapter seven of Victor (2023).

[4] Chapter eight pp. 249-251 of Victor (2023).

1. There is compelling evidence that humanity is living in an era of global overshoot.

2. A reduction in the physical scale of the human enterprise is essential to escape from overshoot.

3. The historical and current causes and consequences of overshoot are extremely unequal within and among countries.

4. Limits on material and energy throughput and land transformation are critical to an escape from overshoot.

5. Contraction and convergence is an appropriate ethical principle for building an escape plan.

6. A planned escape from overshoot requires a common sense of purpose such as has been seen in times of war, pandemics and in response to sanctions and embargos.

7. A common sense of purpose should be founded on principles of justice, otherwise the escape plan will be compromised by people and institutions seeking their own self-interest rather than working towards shared objectives. These principles of justice should encompass non-human life as well as human.

8. A common sense of purpose is more likely to emerge from forms of democracy that combine representation and participation, and which are based on the principle of subsidiarity - that social, political, and environmental issues are best dealt with at the most immediate level consistent with their resolution.

9. Reductions in population should be welcomed, planned for, and encouraged through increased measures such as: accessibility to education especially for girls, increased availability of contraception, provision of a basic income and wealth, and better care for the elderly.

10. Finance should facilitate the escape from overshoot rather than exacerbate it. To this end, money creation by commercial banks should be curtailed. The financialization of nature and the implication that it exists solely to serve human interests, should be halted, and reversed.

11. Technology does not exist in isolation. It is embodied in materials and requires energy for its production and use. Technologies often have unintended consequences which can be positive and negative. Whether and how technology contributes to the escape from overshoot depends on who owns it and what they seek to obtain from that ownership.

12. Knowledge and ideas should be shared as much as possible given that they are non-rival. Exclusion of potential users through intellectual property rights should be discouraged, especially where if impedes the flow of information, products and services to low-income countries as happened during the Covid-19 pandemic for example.

13. Capitalism presents serious obstacles to an escape from overshoot. It serves the interests of the owners of capital, who, through increasingly powerful corporations, are constantly looking for ways to extend their reach, increasing overshoot, and only incidentally serve the interests of other members of society. Experience with Socialism has a mixed record in relation to overshoot having focussed on growth almost as much as in capitalism, and it has shown the shortcomings of central planning.

14. Overshoot will transform economic and political systems. It is better to choose the transformations we want rather than have them forced upon us by circumstances beyond our control.

Bio

Peter Victor, author of *Escape from Overshoot*. *Economics for a Planet in Peril* (2023), *Herman Daly's Economics for a Full World: His Life and Ideas* (2022) and *Managing without Growth. Slower by Design, not Disaster* (2008 and 2019), is Professor Emeritus and Senior Scholar at York University, Canada. He has worked for over 50 years in Canada and abroad on economy and environment issues as an academic, consultant and public servant. His work on ecological economics has been recognized through the award of the Molson Prize in the Social Sciences by the Canada Council for the Arts in 2011, the Boulding Memorial Prize from the International Society for Ecological Economics in 2014, and his election to the Royal Society of Canada in 2015.

Peter was the founding president of the Canadian Society of Ecological Economics and is a past-president of the Royal Canadian Institute for Science. Prior to becoming Dean of the Faculty of Environmental Studies at York University in 1996 he was Assistant Deputy Minister for the Environmental Science and Standards Division in the Ontario Ministry of the Environment. Currently Peter is a member of the Board of the Footprint Data Foundation and Honorary Board of the David Suzuki Foundation, and he has served on many advisory boards in the public, private, and NGO sectors.

Peter maintains an active research program as a co-investigator in the Centre for Understanding Sustainable Prosperity (www.cusp.ac.uk) and through the Ecological Footprint Initiative at York University.

Dr. Guy McPherson
Nature Bats Last

Afterword
(September 2024)

This collection presents several viewpoints on the concept of societal collapse. It relies on the perspectives of several scholars to reach the shared conclusion that societal collapse is not far away. I concur with this conclusion, which is rooted in abundant evidence.

I spent many years preparing for the imminent collapse of society. In fact, upon recognizing that humanity's collective pursuit of money and the privileges it affords are driving us to extinction, I retired very early from my position as an esteemed Professor at a Research I University, the University of Arizona.

I lived off-grid for more than a decade, initially in southern, rural New Mexico and then in western Belize, Central America. I learned animal husbandry and cared for chickens, ducks, and goats for eggs and milk. I learned how to grow and preserve food, including in gardens and orchards, and also via the application of the principles of permaculture.

I returned to a more conventional life when I became aware of the aerosol masking effect and the likely impacts of nuclear facilities melting down in an uncontrolled manner. I necessarily returned to a life of frugality. Lacking an income since leaving campus life in 2009, frugality is mandatory.

Unfortunately, this collection fails to mention these two key bits of information that will have profound impacts post collapse. This missing information was crucial to the mistake I made in leaving campus life and the many privileges afforded thereby.

Such is the scale of the metacrisis, there are some topics that I consider to be paramount which haven't been covered in this particular volume. That's not to say that these authors are unaware of them, but the omissions are indicative in themselves of the layers and layers of variables within our predicament — there's sometimes simply not enough space to cover them all.

For this reason, I encourage readers to explore the impacts of these two significant factors.

First, the aerosol masking effect, which can be found in more than two dozen peer-reviewed papers dating to at least 1929. Loss of aerosol masking due to reduced industrial activity will cause the extinction of humans, and therefore all life on Earth. According to several presentations, interviews, and peer-reviewed papers by Professor James E. Hansen, aerosols fall out of the atmosphere in about five days, thus heating the planet very rapidly. The aerosol masking effect has been widely reported recently in the wake of new rules regarding the use of cleaner fuel for cargo ships crossing the Atlantic Ocean.

Second, the uncontrolled meltdown of nuclear facilities. The resulting ionizing radiation will strip away stratospheric ozone, thus leading to very rapid heating of Earth's surface. The 2021 film *Finch* subtly illustrates this phenomenon, indicating that filmmakers know about this important issue. Again, this will lead to the loss of all life on Earth.

According to a peer-reviewed, open-access paper by Strona and Bradshaw published in *Scientific Reports* on 13 November 2018, a rise in global temperature of 5-6 C within a few centuries will cause the extinction of all life on Earth. According to governments of the world reporting in October 2023, Earth passed the 2 C threshold above the 1750 baseline. Of greater importance than when we add 3-4 C is the rate of environmental change, which dictates the continued survival of ecological entities such as organisms and communities. For example, as reported in the peer-reviewed, open-access *Oikos* on 28 December 2022, the rapid rate of environmental change "restricts the ability of organisms, populations or communities (i.e., ecological entities) to respond."

According to the Intergovernmental Panel on Climate Change (IPCC), the current, ongoing event is the most abrupt in planetary history. In its *Global Warming of 1.5°*, published on 8 October 2018, the IPCC quoted two peer-reviewed papers in reaching this conclusion: "These global-level rates of human-driven change far exceed the rates of change that have altered the Earth System trajectory in the past (e.g., Summerhayes, 2015; Foster et al., 2017); even abrupt geophysical events do not approach rates of human-driven change."

In failing to include information on these two significant factors, this particular collection is perhaps far more optimistic than is warranted by the evidence that points to the conclusion that there will be no recovery from the collapse that we are fast approaching.

Bio
Professor Guy R McPherson is an internationally recognized speaker, award-winning scientist, and the world's leading authority on abrupt, irreversible climate change leading to near-term human extinction.

Steve Bull
Website Substack Medium

Addendum–Today's Contemplation: Collapse Cometh CLXXXIII–Complexity and Sustainability
(Published July 30, 2024)
Website Substack Medium

Tulum, Mexico (1986). Photo by author.

I believe that in many ways the past is a prologue to our future. Every experiment our species has attempted in the development of complex societies (from small to large ones) has eventually 'failed' to sustain the systems that make them complex and simplification/decline/collapse has followed.

Regardless of this pre/history and the lessons inherent in it, our species seems to make the same unsustainable choices with each and every iteration of complex societies. An argument can be made that such repetitive behaviour is unavoidable as our 'successes' cannot help but lead to our 'failures'. It is our 'nature' (as it is perhaps for virtually every species) to grow in numbers and, if the circumstances 'permit' (i.e., fundamental resources are present), to exceed the natural carrying capacity of its habitat and proceed into ecological overshoot (see William Catton Jr.'s Overshoot: The Ecological Basis of Revolutionary Change).

Our longest lasting and perhaps most 'sustainable' living arrangements were when our species followed a somewhat nomadic, hunting and gathering existence that relied upon living within the restraints imposed by local natural resources. When population pressures arose due to human reproductive success, groups could split up with some moving to adjacent, unexploited lands. Eventually, however, this process bumped

up against limits to such expansion and it was through technological 'innovations' that population pressures were addressed.

While there are many theories regarding the reason for a society's 'collapse/simplification', it would appear that part of the answer is that the organisational structures (i.e., sociopolitical and/or socioeconomic) that share important information and goods to maintain themselves, experience declining returns on the investments necessary to keep them active–particularly if an unexpected crisis erupts after a prolonged period of diminishing returns.

Eventually, when the 'costs' outweigh the 'benefits', support from the masses is withdrawn resulting in a much more simplified world where small, local groups develop that are primarily dependent upon the immediate environment's carrying capacity and significantly less so on widespread energy-averaging systems (i.e., trade, especially long-distance forms) and the complex organisational structures necessary to sustain these systems.

In general, the article (*Complexity and Sustainability: Perspectives From the Ancient Maya and the Modern Balinese*) summarised below–comparing a 'technotasking' approach to a 'labourtasking' one–concludes that **it is our technological innovations that have served to sustain our species growth but that these same innovations lead invariably to the 'collapse' of a complex society that employs them. This is due to technologies expediting the drawdown of finite resources (leading to diminishing returns on investments in resource extraction and thus complexity) and the overloading of various compensatory sinks. The authors emphasise that social stresses are increased by the implementation of new technologies but that because such innovations disproportionately benefit those at the top of societal political and economic structures (primarily via the control of key resources), they are employed regardless of the negative impacts that arise–social and/or environmental.**

While reading through the article, I had a variety of thoughts relating to my understanding of the 'collapse' process and our modern trend towards that somewhat inevitable outcome.

First, it is a net surplus of resources (especially energy) that is perhaps the key result of human adaptations (see Dr. Tim Morgan's Surplus Energy Economics for more on this). This surplus allows for expansion. No surplus means no expansion and/or use of 'savings' to sustain society, leading to a more vulnerable situation when/if crisis erupts as per archaeologist Joseph Tainter's thesis regarding how and why complex societies 'collapse' (see The Collapse of Complex Societies). It would seem that 'stability' appears when new energy is NOT harnessed and growth/expansion curtailed. This possibility now appears unachievable (without a severe disruption to current complexities) because of the creation of a world predicated upon such growth and increasingly 'necessary' due to its dependence upon the extraordinary expansion of debt-/credit-based fiat currency that has allowed us to pull growth from the future–but that requires payback of both principal and interest.

Second, technological innovations (what the authors refer to as 'technotasking') appear to create jumps in complexity and are limited by immediately available resources. If resource demands cannot be met, collapse or simplification is the most likely outcome. A 'labourtasking' path (one that depends primarily upon manual labour), however, displays only small, incremental increases in complexity and costs. This alternative pathway is far more 'sustainable' than one that employs technologies; it can still result, eventually, in collapse/simplification just taking much longer to get to that endgame.

Third, today's energy-averaging systems (i.e., trade) is a global, complex industrial product-reliant enterprise fundamentally based upon hydrocarbon extraction and refinement. The fragility and complexity of such a system has led to enormous reliance upon finite resources (especially hydrocarbons, and most located far away) and led to a significant loss of skill/knowledge in self-sufficiency for most of our species. The need for resources to maintain our societies' complexities and the movement of them has led to massive militaries and ongoing geopolitical brinkmanship.

Fourth, our modern societies are similarly following the collapse trajectory of the Maya as we accept a top-down strategy and employ a technotasking approach in offsetting production deficiencies and countering population pressures. In fact, we have accelerated this approach in a number of ways, including the use of technology to make more technology and are now contemplating using technology (artificial intelligence) to guide our decision-making far more than practised to date. (see Erik Michaels' Problems, Predicaments, and Technology for more on the issues surrounding technology use and the predicament it has led our species into)

Fifth, we can see in the Maya a faltering of technological innovations and their maintenance as a result of organisational communications breaking down. This eventually led to a degradation of important complexities, especially pertaining to food production. This occurred as the elite consolidated resources for themselves to offset the limits society was encountering. Elite self interest resulted in more and more resources being directed towards this ruling minority and less towards the systems necessary to support the societal complexities needed for everyone.

Sixth, despite assurances in modern times by the priesthood of economic 'science' that resource limits are meaningless in a world of 'free' market economies where human ingenuity and technology can counter deficiencies in resource supplies, hard biogeophysical limits to infinite growth exist. These real limits lead to massive issues for the technotasking pathway but it is almost always chosen to be pursued because it can accommodate rapid growth and the consolidation of social/economic power for the ruling elite to whom most of the benefits accrue. This occurs without much thought or concern, if any, about sustainability.

Finally, it may only be with the fall of nation states and other forms of large, complex societies (and the caste of elite that accompany such social organisations) that more sustainable forms of human existence can be pursued. This depends on a number of important factors not least of which are: the number of our species that survive the fall of the current industrial-based, globalised complex society; the state of the planet's ecological systems once all mass, extractive enterprises are curtailed; the survivability of our planet due to our overshooting of various planetary boundaries; the availability of certain, important natural resources (especially potable water, food sources, and regional shelter needs); and the ability of any remaining human populations to live within the capacity of their local natural resources/environment.

A handful of previous Contemplations looking at how the past informs the possible future…
Today's Contemplation: Collapse Cometh CLXXIX–**Archaeology of Overshoot and Collapse** May 24, 2024
Today's Contemplation: Collapse Cometh CLXVI–**Societal Collapse: The Past is Prologue** November 27, 2023
Today's Contemplation: Collapse Cometh CXLVIII–**What Do Previous Experiments in Societal Complexity Suggest About 'Managing' Our Future** September 1, 2023

Today's Contemplation: Collapse cometh CXLIII–**Ruling Caste Responses to Societal Breakdown/Decline** August 3, 2023
Today's Contemplation: Collapse Cometh CXLI–**Declining Returns, Societal Surpluses, and Collapse** July 19, 2023
Today's Contemplation: Collapse Cometh CXXXIX–**Our Deep Future: Techno-Utopia Or A Return To the Distant Past** July 10, 2023

Complexity and Sustainability: Perspectives From the Ancient Maya and the Modern Balinese

V.L. Scarborough and W.R. Burnside
American Antiquity, April 2010. Vol. 75 No. 2, pp. 327-363

Scarborough and Burnside argue that there exists several different pathways for societal complexity to emerge in human populations (where complexity is defined "as the nonlinear escalation of costs and emergent infrastructure with rising energy use and concentrated power as societies develop." (p. 327)) Using examples drawn from the ancient Maya and modern Balinese, two of the pathways are compared highlighting "their relative costs, benefits, and potential for long-term sustainability." (p. 327)

After a brief discussion of how best to conceptualise societal complexity for the purposes of their research, the authors concentrate upon socioenvironmental relationships, especially around water management for their compare/contrast analysis with the complexity resulting from increasing 'throughput'.

Human groups self-organise within their biophysical environment with their culture altering the environment. New cultural systems can be highly adaptable but they are also more fragile and can lead to relatively quick 'collapse'. Social modifications usually lead to stressed living conditions with increased costs and three possible futures if harmful conditions cannot be absorbed by the biophysical and/or sociocultural systems: "(1) the cultural system cuts its exaggerated and mounting social costs by lessening its intensity of resource use resulting in a partial reversion to an earlier lifeway of reduced costs and relative simplicity; (2) the system suffers from relatively abrupt social collapse; or (3) the system cultivates and focuses its energy and social capital on greater "complexity" associated with an evolved set of institutional structures–an emergent organizer of information and resources." (pp. 329-330)
Research suggests that societies follow a labourtasking or technotasking path (or combination) to incorporate new resources or reset old ones.

Technotasking offsets production deficiencies by investing in 'technological innovation' that can help establish surpluses. In an early/primary state, 'canalisation' (i.e., riverine drainage system) was a commonly employed innovation as it could be adopted relatively quickly. The resource concentration such adaptations resulted in led to the emergent phenomenon of urbanisation and organisational structures, with those in 'control' of these economic/political structures benefitting disproportionately–"...those profiting most from the newly invented technologies accrued greater quantities, concentrations, and control of key resources." (p. 332).

Deployment of a new technology is costly in terms of society and its environment but even after costs 'level-out' time and entropy can begin to increase costs. These increased costs can lead to a slowing of growth, collapse, or, with a new technology, a restart of the process. Transitions to greater complexity

seem to be triggered by these rapid reorganisations. Successful and long-term shifts are limited by immediately available resources. Such change creates vulnerability if the new structural complexity cannot adjust to resource use/demand "If the new structure and the necessary resources are not synchronized and compatible, then the social system will collapse or at least slip back to an earlier, less complex social order." (p. 335)

Labourtasking relies upon trained labour pools to help modify the landscape rather than a technological 'breakthrough'. Here, the resulting change is incremental, long lasting, monitored, promoted generationally, and refined according to local conditions. Complexity and its social costs increase over time but in a smooth, uninterrupted manner. There are no abrupt transitions preceded by breakthrough technologies. Complexity costs increase but at a smaller ratio than in technotasking societies.

The ancient Maya and modern Balinese both have tended to employ labourtasking to aid in their adaptation to their somewhat similar semitropical settings whereby heavy seasonal rains were followed by prolonged dry periods. Both developed microwatershed adaptations but via different 'technologies'.

The Maya would take advantage of natural drainage catchments and enhance them via landscape modifications (channel systems and reservoir) with household and monumental architecture mound volume equivalent to drainage volume. "[T]he system was likely a communitywide effort monitored by a collective interested in sustaining the entire group." (p. 338) Although labourtasking was their primary economic means for some time, the Maya shifted into and out of technotasking as needs required. Innovations, however, would hasten resource drawdown and quicken negative impacts (e.g., erosion and sediment accumulation).

It appears that the Mayan success led to its eventual demise. Turmoil within large centres disrupted community communication beginning in the west. Information exchange faltered and the elite succumbed to immediate self-interest and became less responsive to other needs investing fewer resources in the many and more to the few; a scramble for hegemonic control between the large centres ensued. Written records suggest a governing council was implemented at Chichen Itza as depopulation hit its southern contemporaries but rather than adjust social networks (i.e.., economic and political) the elite chose to seek greater control. During the Terminal Classic demise phase there is evidence that the cost-complicated landscapes suffered the most from this, In particular, was the impact upon irrigation channels and reservoirs that show massive sediment/silt buildup; impacts that can still be seen today.

Mayan 'collapse' appears to have ensued once the environment and its natural resources could no longer support societal complexities. While several major centres and their hinterlands experienced 'collapse' (especially acute depopulation and the overshoot of local resources), some smaller communities were resilient and avoided the fate of the large ones–mostly by specialising in local resources and establishing trade with nearby populations. Those populations that shifted towards labourtasking-based adaptations were able to sustain themselves for a period of time beyond those that depended upon technotasking. "Generally speaking, the more long-term time and energy invested in the system, the greater the degree of collapse if the fields or related surfaces are neglected or abandoned for even a short period." (p. 349)

The modern Balinese, in comparison, have oriented towards a labourtasking pathway after having their initial attempts (circa 11-12th century) to recreate their Javanese roots fail due to significant geographical differences. Its highly-dissected, steep-sided valleys with little in the way of natural resources required

more decentralised structures. Indigenous farming populations managed their own affairs avoiding centralised bureaucracies and their demands. Groups self organised within their unique ecological circumstances. This approach proved productive and shaped the social system. “Balinese social institutions remain responsive to the complex adaptive system they have spawned, providing the flexibility to accommodate and locally manage accretional landscape change.” (p. 353)

The Balinese, with their labourtasking approach that focuses upon decentralisation (as opposed to the hypercentralisaiton characterised by the Late Classic Maya), have so far avoided collapse and suggests a path forward for sustainability. Resilience and long-lived stability would appear to be the result of small, incremental adjustments in a labourtasking approach as opposed to the frequent and rapid shifts that result from a technotasking one. However, near the end of an extended run, labourtasking systems may still result in extreme social ‘collapse’.

“A key difference between the two systems is the expectations for grand collapse…Because of the ever-changing, nonlinear interdependencies within and between groups and their environments, labortasking leads to a set of ‘phase transitions’ that produce adaptive forms of social organization and built environments. This process is long-lasting, resilient, and generally well-adjusted to resource limitations, making it relatively sustainable. However, acute vulnerability or collapse can occur if drastic external and/or social structural change is unleashed.” (pp. 355-356)

Technological innovations that tend to buffer humans from the environment but negatively impact it are often chosen because they accommodate rapid growth and the consolidation of social/economic power without much thought or concern about sustainability. While improvements in human health and welfare can be attributed to technotasking these need to be evaluated in terms of the costs, especially upon the environment whose ‘health’ human societies depend on.

The longer summary notes of the article can be found here.

Bio
Steve Bull is a retired educator who spent the entire decade of the 1980s chasing four degrees, studying biology/physiology, psychology, anthropology/archaeology, and education–attaining a Master of Arts in archaeology but pursuing a career in education. He fell down the rabbit’s hole of Peak Oil and related predicaments after watching the documentary Collapse featuring the late Michael Ruppert. In an attempt to reduce the resulting cognitive dissonance, he ventured into fictional writing penning a novel trilogy centred around societal collapse to share his learnings with family and friends. Since that time he has–when he’s not spending time with his family or working to sustain and expand his food gardens–pursued non-fictional writing on the topics discussed in this compilation.