



richardheinberg.com

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Envisioning a Livable Future

Sir David King, former chief scientific advisor to the UK government, recently [wrote](#) that, “On our present path, civilization as we know it will disappear.” More than a century’s worth of sustainability research has documented how humanity is undermining its own future by polluting the environment, depleting resources, and damaging the natural systems that support complex life on our planet.

Sadly, most people fail to understand the seriousness of our predicament. They assume that simple economic adjustments (such as substituting “good” technologies for “bad” ones) will allow continued growth of population and consumption. But pollution, depletion, and harm to nature are inherent in the industrial system and the growth-seeking economy.

Consider climate change. It is caused largely by an invisible, odorless form of pollution—carbon dioxide emitted by burning fossil fuels. These fuels have also been responsible for most economic expansion over the past century and have enabled high rates of population growth. The only times when greenhouse gas emissions have fallen significantly were periods when the global economy was contracting (during the Great Depression, and, more recently, the 2008 global financial crisis and the COVID pandemic). Aside from those brief respites, carbon emissions have continued to increase, as has the concentration of greenhouse gases in Earth’s atmosphere—and this despite trillions of dollars spent on developing alternative, low-carbon energy sources. Experts forecast dire consequences from climate change, but humanity has so far continued on the path of growth. And climate change is only one of [several survival-level threats now converging](#)—all consequences of our modern industrial way of life.

We are all tempted to look for techno-optimist “solutions” that allow us to keep the comforts and conveniences of modernity while avoiding the harms caused by our globe-spanning systems of extraction and production. But this approach is wishful thinking at best, self-delusion at worst. A livable future would need to look profoundly different from the human world of the early 21st century. In this article, we’ll explore what would have to change, what the world might look like as a result, and how a livable future might be achieved.

What would have to change?

In order to build a sustainable society, humanity would have to change the factors that are currently driving us toward the precipice. The myriad of individual instances where humanity is chipping away at its long-term viability can be sorted into two bins: pollution or resource depletion. Both cause harm to natural systems. (There is spillover from one bin to another—as when extractive industries pollute).

These two bins of environmental sins are perched on a tripod of seeming goods. This tripod is described by the I=PAT model of environmental impact developed in 1971 by biologist Paul Ehrlich and environmental scientist John Holdren. According to the model, environmental impact (“I”) results from the combination of

- **Population (P)**: the total number of people in a given area,
- **Affluence (A)**: the average consumption rate of individuals within a population, and
- **Technology (T)**: the energy resources needed to meet consumption.

These three factors interact, since the discovery of new energy sources enables population and affluence to grow temporarily—until those energy sources are exhausted or until expanded consumption and pollution degrade the environment’s ability to support humanity’s increased population.

In the modern world, governments encourage all three factors—population growth, increasing affluence, and the development of new technology and energy resources. “P,” “A,” and “T” can grow quickly in a self-reinforcing feedback process, which, in turn, can make impact also grow: not only do energy and technology enable more consumption and population growth, but a larger population leads to more consumption and technology, and more consumption often results in the development of still more technology (though not necessarily a larger population). Most economists and policy makers see this as a virtuous cycle, but they tend to ignore its costs, which are often delayed. Today, we’re way past the point where costs already in the pipeline will overwhelm any benefits of growth that we experience now.

Most people look to technology for solutions to virtually all human problems—environmental as well as medical and economic. However, technology’s track record with regard to the environment is spotty at best. At the margins, replacement technologies can help (for example [CFCs](#), which nearly destroyed the planetary ozone layer, have been replaced by somewhat less dangerous chemicals). Further, birth control technologies can help slow or reverse population growth. But, on the whole, the introduction of new technologies tends to increase [consumption](#), as well as [economic inequality](#).

So, it is extremely unlikely that technology—whether in the form of solar panels or AI—will by itself sufficiently reduce humanity’s environmental impact. A livable future will therefore depend mostly on whether we can reduce population and consumption to sustainable levels.

What would a sustainable society look like?

Since the past two centuries have seen dramatic growth in population and consumption, when imagining a future of population and consumption

shrinkage, it's tempting simply to project images of the past onto our collective future. As a first approximation, this may be helpful. Over the past few millennia, and the last two centuries especially, we've shifted from communities of local sufficiency to a globalized economy of long supply chains, one that undermines nature at every turn. Why not just run that movie backward? In considering that question, two others come to mind.

First, how far back must we rewind the movie of history (what boosters call "economic progress")? Do we need to reverse it to agrarian times? Or even further—perhaps to hunting and gathering? Few policy makers or industrialists would willingly contemplate either possibility. But remember: we're talking about the survival of more than just profits and political power. The fate of our species and countless others is at stake. We have to be willing to follow evidence and logic and to think uncomfortable thoughts.

If the industrial paradigm cannot be sustained, then perhaps an agrarian future is an acceptable fallback goal. Agriculture brought many seeming benefits—the opportunity to produce larger seasonal food surpluses, which in turn enabled growth of population, full-time division of labor, and urbanization. The derivation of the word *civilization*, from the Latin *civis*, or "town," attests to the centrality of agriculture and urbanization to the development of complex societies with writing and money. But agriculture is ultimately self-limiting, because it tends to [degrade soil](#). Further, many agrarian societies have been [brutal and unequal](#).

Greatly reducing population could increase agriculture's ecological viability: if there were fewer people needing agricultural products, the scope of production could shrink, thereby reducing farming's environmental impact. However, we could also farm differently. Instead of plowing fields and planting monocrops, we could focus more on diverse tree crops and other perennials (such as the perennial grain crops being developed by the [The Land Institute](#)), which don't require soil-damaging tillage. Further, instead of agriculture (from the Latin *ager*, "field") we could concentrate on horticulture (from *hortus*, "garden"). This is the strategy envisioned by the founders of [permaculture](#) (from *permanere*, "to endure"). Gardening, using mostly perennials, would entail more labor, but could be far more ecologically benign, and would likely foster more egalitarian and women-centered social arrangements—as have many (though certainly not all) [horticultural societies](#).

Second question: have we learned or accomplished things during the brief efflorescence of modernity that might be worth retaining? Do we have to give up all the scientific knowledge and artistic achievements of the past few centuries? One would hope not. The ideal outcome might be a world of linked, diverse, locally adapted, cooperative societies sharing similar ecological guidelines regarding population, consumption, and technology, while preserving knowledge and producing beauty.

Specific ideas about how a livable future might look can be drawn from the human imagination via fiction (see, for example, Ernest Callenbach's 1975 novel, [Ecotopia](#)). But reality will no doubt be stranger and more creative than even the best science fiction.

Whatever actually unfolds in the human future will be constrained by genetics (human mental and physical capabilities), ecological conditions, and

persistent cultural attitudes and beliefs. Maybe, in seeking to imagine a livable future, the best we can do is focus on two related variables: how we get our food (see the discussion of horticulture versus agriculture above), and how we organize our social relations. A smaller population and a less impactful food system may entail local adaptation to limits and opportunities, and therefore a reversal of globalization. Without agriculture, capitalism and money might have little usefulness, and it could well be argued on humanitarian grounds that they have no place in a livable future anyway. The commons would replace private ownership of natural resources. But smaller, more locally organized societies could be more or less egalitarian, and more or less warlike and brutal. Their character will depend upon cultural factors that may be difficult to engineer—though we can do our best now to support the values of equity and compassion within our existing relations, thereby perhaps sowing seeds for peaceful coexistence in future societies.

How do we get there?

If we keep going as we are, we will arrive at a post-industrial future via catastrophe and suffering. Nature will break down to the point where it can no longer support the existing human population. Human social systems will implode amid a mad scramble for power and survival. Our species may not outlive this unraveling. That's the worst-case outcome.

In principle, there is a gentler path. It would require rapidly but systematically letting go of each feature of modernity that is unsustainable. This path would also require an ongoing reduction in population, achieved by falling fertility rates. We would do all of this cooperatively and peacefully, retaining whatever serves life, beauty, and happiness, while willingly sacrificing profit, convenience, and accumulation of power. The result would be innumerable locally adapted Indigenous societies, all imbued with lessons learned from the consequences of industrial civilization's ruthless exploitation of nature and other human beings. Communities would aim to serve the common good through social institutions that are durable and convivial: coops, neighborhood councils, community gardens, farmers markets, art and music guilds, and permaculture schools.

[Ecological thinkers](#) have been promoting that gentler path for decades. So far, only a small segment of the general public—whether in rich countries or poor ones—has responded, and humanity has remained on the path of unrestrained industrial growth.

This rejection of moderation is nowhere more apparent than in the recent U.S. presidential election. Neither political party promoted degrowth in any fashion; and, of the two, the party that appealed more successfully to voters' economic self-interest prevailed. It's understandable that wage earners, who have a harder time each year affording housing and food, would vote for immediate financial security; it's less forgivable that some leaders would try to take advantage of the situation by demonizing relatively powerless social groups (mostly immigrants) while promising a return to more prosperous times. The result is likely to be a billionaire-led fascist regime that's obsessed with amassing social power, while having zero interest in ecological sustainability. This regime might accidentally trigger degrowth by crashing the economy. But it is exceedingly unlikely to promote policies for greater equity, and far more likely to unleash the rich to grab common assets

(including national parks and other public lands, maybe privatizing Social Security) and fleece the general populace to the maximum degree possible.

If humanity were going to take the gentler path, it would have had to start decades ago. Given the incentives (immediate gain) and disincentives (the requirement to forgo population growth and wealth accumulation), the [Small Is Beautiful](#) approach had only a small chance of success. Pro-growth leaders fogged critical issues by paying smart people to come up with persuasive but fanciful explanations for how new technologies can enable the economy to grow forever. The fact is, humanity has made its choice, just as American voters have: the latter were swayed by an empty promise to “make America great again,” when in fact the national and global economy are at their apex of size and speed, and it’s all downhill from here. The decision is in: the future be damned. We’re going down the hard way.

That’s a profoundly discouraging realization. However, even if the die is cast, it still makes sense for those with awareness to continue working toward the best case while trying to avoid the worst. This way, we minimize whatever harm we can, while planting cultural seeds that may germinate over time. We also get to savor the joys of simple living, while all around us fret about the glitches in their apps or the downturns in their investment portfolios. It’s worth noting, however, that adopting the strategy of slowing down, simplifying, and relocalizing may not provide shelter from prejudice or violence that flow from national or global politics. That’s why it’s important to develop and live within the strongest community networks possible. [Commoning](#), permaculture, and practices of mutual aid provide a positive way forward, as they can help us both build community resilience and create ecologically sound, right-sized local economies.

It is entirely possible that humanity itself is an evolutionary mistake—that intelligence is of only marginal usefulness in long-term survival, and that its over-emphasis puts our species on a glidepath to extinction. Intelligent animals like crows and raccoons are opportunistic critters, and it’s easy to admire their cleverness. Our species’ abilities with tools and language have given us cleverness to shame any raccoon. But might that hyper-amplified cleverness qualify us for a [Darwin Award](#)?

We have a relatively brief chance to prove this cynical condemnation of our species wrong. We won’t do so through party politics. We won’t do it through achieving “net zero” using a new generation of gadgets. It’s likely that we can only do it personally, through reflection and self-transformation, and in small communities devoted to kindness, systems thinking, and love of nature.

We need to become a species that deserves to survive. In the end, we will thrive not because we believe human beings are superior to the rest of life, nor because of our great music, impressive architecture, or even our wit and humor. If we persist, it will be because we have given the biosphere sufficient incentive to let us stick around.

Most big-think essays like this end on a note of inspiration and hope. For once, I’ll resist the temptation to go that route. Can we humans make ourselves useful to the rest of life? It’s an open question.