

DEEP TIME AND FUTURES

By Richard Slaughter

We have entered the Century of the Environment, in which the immediate future is usefully conceived as a bottleneck. Science and technology, combined with a lack of self-understanding and a Paleolithic obstinacy, brought us to where we are today. Now science and technology, combined with foresight and moral courage, must see us through the bottleneck and out.

-- E.O. Wilson, *The Future of Life* (2002)

INTRODUCTION

As futurists, our task is to look forward. We know that the past informs the present but when you think about it, our default views of the past are quite cursory. If, however, our work relies overwhelmingly on contemporary data ('megatrends', driving forces and related signals of change) what might we be missing?

I've recently taken something of a 'deep dive' into the Earth's distant past and have been reminded that, while humans are, from an evolutionary viewpoint, relatively recent newcomers, previous generations have been changing the planet for thousands of years. Prior to this we are looking at millions of years for the evolution of life itself. How aware are we of these upheavals and the trajectories that ensued? And do we fully appreciate characteristics within our own species' makeup that have, so to speak, been 'baked in' over long periods of time? Moving closer to the present, do we recognize the 'progress traps' that have occurred throughout history and are still happening? Overall, it's worth looking a bit more carefully at the past through a deep time lens. But let me begin with time frames.

In 1996 I wrote a [short article](#) around two ideas:

1. Our shared default notion of the 'here and now' readily collapses into what I referred to as the 'minimal present' and served to isolate us from much of the texture and dynamism of the world around us.
2. Everyone uses different time frames for different purposes, but those choices are seldom conscious or explicit. One of the tasks of the futurist, therefore, was to show how more informed and astute choices were possible and desirable. Now, it seems to me that opening our minds to deep time provides access to further vital, but under-appreciated, aspects of our existence. Equally, forgetting that story, or simply ignoring it may, at a deep level, have been complicit in allowing successive stages of cultural and economic development -- all the way up to our digitally networked world -- to have proceeded in ways that are neither durable nor wise.

LIFE ITSELF IS EXCEPTIONAL AND RARE

Disciplined research into the origins of life on Earth is a long-term collaborative project that generates new knowledge even as it reveals many gaps and questions. There's still much to discover, but some things are clear in in [broad outline](#). For example, half a billion turbulent years passed on this unquiet planet before the simplest building blocks of life emerged. A further two billion years went by before cyanobacteria gained the ability to photosynthesise, thereby creating the first molecules of oxygen. Multicellular organisms are thought to have taken a further billion years to emerge and multicellular life yet another billion. That's around four billion years, overall, before the present. The panorama of life within which we emerged is most clearly reflected in the fossil record over the last 500 - 600 million years. Hominid evolution occurred within a much shorter time frame but, even so, it's believed that while homo sapiens had been around for several millennia, its further development was inhibited by repeated ice age disruptions.

Then, some 12,000 years ago, the glaciation cycle ended, and what has been called the 'Eocene summer' began. More settled conditions allowed humans to begin the ascent to civilization as we know it. Farming became the norm in many places. Populations grew. Civilizations rose and fell. The outlines of our present world slowly began to appear. The onset of the Anthropocene now broadly agreed to have occurred during the mid-20th Century, has brought this period to an end. The global system is currently adapting to the multiple impacts created by humankind.

However, if there's anything to be learned from the immensities of deep time, the hidden complexities of evolution, it's perhaps simply that life in general should never be taken for granted but, rather, celebrated and respected.

It's worth recalling at this point that during recent years astronomers have also been hard at work actively exploring the sky. They've looked out beyond our home world to scan for evidence of other life. The SETI (Search for Extra-terrestrial Life) project attracted sufficient funds to become established as a global scientific project. Yet despite several decades of intensive work, no hint of extra-terrestrial life has been found. Improvements in technology and technique progressively revealed evidence of a growing number exo-planets (planets around other stars) but still no evidence of life. What these sources suggest quite clearly is that life is not only exceptionally valuable, but also very rare. Which should give us pause when we consider what is at stake as global dilemmas of our own making unfold before us. Given limited space I'll turn briefly to a few key areas require our attention. They include progress traps and cultural narratives or stories.



Fossil

Image source: Canva

PROGRESS TRAPS AND CIVILISATION

A great deal of work has been performed by historians and others in various attempts to tell 'the human story' about the development of civilization. One of the most popular and widely read is Harari's book [Sapiens](#) which provides a fair summary of the various steps and stages involved. For present purposes, however, a more useful and incisive account is provided by Lewis and Maslin in their book [The Human Planet](#) which succinctly reviews states of the global system over several millennia. It also identifies key stages of development that led to what they call our 'Anthropocene conundrum' or interlocking set of global dilemmas. Of particular interest here is the authors' view of what they call 'progress traps' (Figure 1 on next page). These are events -- often viewed as 'progress' -- that become irreversible over time and, in so doing, impose continuing costs that tend to be forgotten. An early example is the 'domestication ratchet,' meaning that once farming became widespread, populations grew, and it was no longer possible to rely on hunting and gathering.

Extended views of human history necessarily draw upon a number of disciplines: from hard science to anthropology, from social studies to climate modeling. Futures enquiry necessarily draws on many such sources in its own search for understanding and knowledge. Integrating multiple views and perspectives is, in brief 'what we do' and it can reveal a great deal about the present -- including hidden factors that are often overlooked. It was significant, for example, in this context that Lewis and Maslin chose to highlight the potentially critical role of the [Limits to Growth](#) (LtG) study from the



Image source: Amazon

early 1970s. It offered humanity the beginnings of a way out of the trap it was heading toward but, as we know, was undermined by powerful groups whose short-term interests prevailed. The implications have been reviewed many times and perhaps most convincingly by Karen Higgs in her well-researched 2015 book [Collision Course](#).

Perhaps we can sum all of this up in the following way: While the human journey has clearly been successful up to a point, this 'success' has come at an enormous cost to ourselves and to other life on the planet. We could think of this as the 'shadow story' of human progress. We know, for example, that we've collectively initiated a [sixth extinction](#) while also driving the system toward further global tipping points. As is now painfully clear in Europe, despite 12,000 years of civilization-building we've neither resolved ancient inter-group conflicts nor formed a viable, stable relationship with our world. It's possible that we've gone too far too quickly. We are certainly too self-focused, poor at taking a longer, wider view and distinctly under-achieving when it comes to reconciling our own species interests with those of the broader life world.

FIGURE 1. CUMULATIVE PROGRESS TRAPS FROM 100,000 BP* TO PRESENT

Social Learning ▶ cumulative culture ▶ hunting success ▶ increased pressure on food sources ▶ extinction of megafauna

The Domestication Ratchet ▶ population increase ▶ hunting and gathering gives way to farming ▶ larger populations dependent ▶ no going back

Globalisation 1 ▶ conquered nations decimated ▶ new wealth flows back to old world ▶ Europe living beyond means ▶ colonialism embedded ▶ slavery and exploitation normalised

Scientific Revolution ▶ rapid increase in instrumental power ▶ nature as object ▶ decline of authority ▶ rise of class and other conflicts ▶ future now in human hands

Industrial Revolution ▶ new processes and products ▶ rapid growth but also new costs and problems ▶ crowded cities ▶ drain on resources ▶ widespread pollution

Fossil Fuels ▶ mass transportation ▶ faster long-distance access ▶ new materials ▶ global impacts ▶ climate change ▶ global warming begins

Globalisation 2 ▶ expansion of markets ▶ rise of corporate dominance ▶ efficiencies of scale ▶ off-shoring of jobs ▶ decline of working classes ▶ growing inequality and polarisation within and between nation states ▶ hyper-consumption normalised ▶ global limits breached in at least four key areas (nitrogen and carbon cycles, biodiversity loss, ocean acidification)

IT Revolution ▶ US government funds early research ▶ Internet evolves rapidly from obscurity to ubiquity ▶ Internet oligarchs thrive ▶ extensive 'disruption' of businesses and professions ▶ new dangers include hacking, cyberwar, social extremism and fake news ▶ rise of surveillance capitalism ▶ China invents the modern Panopticon ▶ technological dystopia arrives

Global Overshoot ▶ Evidence accumulates of global dysfunctions ▶ emergence of de-growth and conscious descent strategies ▶ special interests support finance and manufacture of denialism ▶ acceptance of reality of global progress trap impeded ▶ savings of applied foresight overlooked ▶ probability of sudden, uncontrolled adjustments within the global system increases dramatically ▶??

* Estimated time Before Present.

Source: Lewis & Maslin (2018) The Human Planet

REDUNDANT CULTURAL SOFTWARE

One of the many things that becomes clear when we re-focus on the big picture of life over aeons is the unavoidable fact that all forms of life carry the products of deep time within them. The air we breathe is a product of life over billions of years. Looking deep inside our own bodies we find entities such as mitochondria, cellular power sources that, again, come to us from early life forms that date back many millions of years. Our DNA contains the chemical signatures of countless past hominid generations. In other words, ***each of us is a walking, living, product of deep time without which we simply would not exist.*** To know this, to bring it to full consciousness, is to realize that we are not special, not in charge and never were the 'lords and masters of nature.' We're here because vast and unknowable forces created this world and set in motion the hidden processes of life that painfully, over long aeons, created primitive forms of life from which our species eventually emerged.

Harari suggests that stories are among the most vital building blocks of all civilizations. Language, co-operation and belief in stories are central in his view. He's less clear about those that currently rely on assumptions about the mastery of nature, separateness and the continuing over dominance of instrumental reason. Moreover, we're finding it difficult to revise such assumptions in ways that allow them to evolve with our changing reality. Thus, we have the odd situation of a high-tech civilization with access to truly awesome instrumental power running essentially on what looks like redundant cultural software. This generates [skewed narratives](#) and contradictions that crop up every day in our

private, professional and public lives. Which, again, helps to explain why we should not just extrapolate uncritically from the taken-for-granted present. It seems clear by now that conceptions of human and social life that are alienated from deep time, the long process of life and the dynamics of the global system are unlikely to prosper. During the last 500 years we interpreted the scientific revolution, and those that followed, as increasing our dominance and power while, at a cultural level, we let slip from our memory the undeniable fact that the costs of each have increased rapidly throughout this time. There's no doubt, however, that the '[great acceleration](#)' has huge consequences for all possible futures yet, strangely, it seems absent from the 'mental maps' of most people I know.

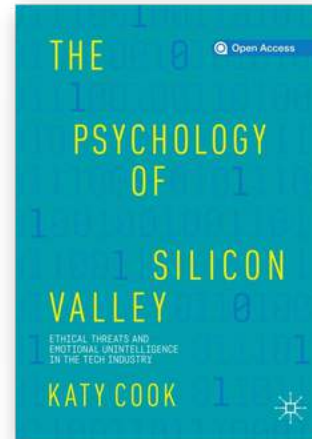
Civilizational blind spots and related category errors protect us from acknowledging that we failed to balance the rise of instrumental power with corresponding increases in our ability to act as caring stewards. Seen in this light, the Neoliberal ascendancy, the Trump presidency and now the war in Ukraine were and are expensive diversions that drain energy, structure and meaning from the very system that sustains us. Contradictory signs can be found just about everywhere, and futurists should strive to make sense of them. This is, of course, a collective effort so the suggestions I put forward in [Farewell alternative futures](#) need to be critiqued and extended by others. Another, fairly obvious, option is to consciously work through the three stages of foresight work: from pragmatic, to problem-solving, to civilizational perspectives.

AMBIGUOUS IT

Over recent years I've followed the trajectory of the IT revolution partly to understand why the hopeful anticipations of the pioneers remain largely unfulfilled. As futurists well know, when there are danger signs ahead, we look for active responses. I soon realized that there are indeed many ways out of what looks a lot like a progress trap created by the all-too-rapid spread of compromised and inferior IT systems. But only if we collectively reject the role of passive consumers and organize ourselves, along with civil society, to do things differently. This is a rich area of enquire and action, aspects of which are explored in a 2021 anthology [The Public Square Project](#) edited by Lewis and Guiao. In this context, question of values and worldviews are central. Just imagine how different Silicon Valley and the Internet would be if openness, awareness and humility had been among the core values.



Image source: Canva



Book: *The Psychology of Silicon Valley* by Cathy Cook

Image source: Amazon

What actually happened is so very different. Entrepreneurial skill and technical innovation were driven by self-serving motives and values around power, profit and exploitation. When the internet oligarchs invaded unprotected human space, they did so long before anyone, including the U.S. government, really comprehended what was happening. Human and social wellbeing had no part in the game plan. Indeed, It took seven long years well after these events for Shoshana Zuboff to carry out the research and give us the full story in her magisterial work, *The Age of Surveillance Capitalism*. For those who simply don't have time to read the original, there are many [reviews](#) that provide useful starting points. Similarly, Katy Cook's 2020 book on [The Psychology of Silicon Valley](#) opens out a whole inner landscape that clearly show the industry failed to understand itself and opt for more constructive options. China's use of IT is even more extreme and concerning since it appears to be heading rapidly toward a full-on technological dystopia characterised by what Khalil calls [Digital Authoritarianism](#).

WHAT DO GLACIERS REMEMBER?

Glaciers are among the most reliable indicators of a warming world. But they may only have a few decades left. Which is a shame since some of them are as much as 20,000 years old. They are coded and compressed libraries packed with information about the past that can be intensively studied and understood. Together with other records such as tree rings, ocean sediments and changing landscapes, they provide a rich source of understanding of previous climate variability, weather systems and even historical events. All of which informs the efforts of climate scientists and others who seek to understand present-day climate shifts and weather systems. [An article](#) published by the University of California explains how such research has uncovered some 66 million years of Earth's climate history. It clearly demonstrates, for example, how CO2 levels and global temperatures remain tightly linked over millennia. Now a combination of melting polar ice sheets and warming permafrost in northern latitudes are highlighting an unfamiliar, or disowned, aspect of the 'sixth extinction.' This time we are front and center. The most recent IPCC data suggests that as these tipping points are crossed greenhouse gas (CO2 and methane) levels will accelerate well beyond any hope of human moderation. As has occurred so often before back in deep time, the global system is slowly and irrevocably shifting away from a settled period that we call the 'Eocene summer' toward a temperature regime not seen on Earth or many millions of years.

The point is straightforward. In our systemically threatened world, futurists cannot be neutral. At a surface level we know that to say anything of value about the future we need to look back and ask questions such as: 'how did we get here', 'what are the main drivers' and 'what are we missing?' It seems to me, however, that as a profession, we've largely overlooked Earth history and the panorama of deep time. With notable exceptions, we've tended to jump on the latest trend, technology, consulting opportunity and the like with insufficient awareness of underlying issues. In this respect opening to deep time can help us to see things with fresh eyes, to look beneath the surface and to tease out new sources of understanding and insight. Used sparingly and well it can help us find our cultural bearings, to know where and when we are, and make better decisions about how to apply our limited time and effort.



Image source: Canva

CONCLUSION

What has been suggested here recalls a quote from [The Foresight Principle](#), which was published in 1995. Namely that Foresight stands at the juncture of terror and promise. In summary:

- Life itself is exceptional and vanishingly rare.
- Human civilization is merely a brief ripple on the surface of deep time.
- We owe our existence to several billion years of evolutionary experimentation.
- The signature of that past is irrevocably present within every cell of our bodies.
- We are therefore intimately connected with all life, past, present and future.
- Technology per se is not the answer and information does not want to be free because it is an agent of power that needs to be shared.
- The global life support system requires our urgent, collaborative attention.
- Recognizing the above, our most pressing priorities involve shifts toward broader, longer-term worldviews and more sustaining and viable values.

Foresight work currently remains all too rare but, at the same time, has never been so badly needed. An improved awareness of deep time won't compensate for long-standing blindness, but if it motivates us to probe more fully into values and assumptions, progress traps, redundant stories, fashions in technology and so on, we might gain some much-needed confidence and clarity. We can: choose alienation from natural process to deep identification with it; exchange some power for a measure of wisdom and profit for empathy. Shifts of this kind are not particularly easy but then, nothing about the emerging future is.



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