



Essays

Farewell Alternative Futures?

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ABSTRACT

The notion of 'alternative futures' played a significant role in the early development of futures studies and applied foresight (FSAF) and remains in wide use. But the optimism it signified, the sense of unqualified agency, no longer rings true. The paper explores the grounds of this shift and considers some implications. It concentrates on four of many possible factors, each of which may help to account for this underlying shift: global system change and the Anthropocene; denialism and the unreality industry; the role of repressed aspects of history and qualitative changes within futures studies and applied foresight (FSAF). Two broad types of human and cultural response are evident. First, those that broadly accept the evidence and support constructive actions and second, those that seek to deny the evidence and inhibit or undermine such actions. Despite such concerns, however, the paper ends on a note of qualified optimism. While alternative macro-futures at the global level may have lost credibility and salience, human agency has not been nullified since multiple alternatives clearly exist at nearly every other level.

1. Introduction

A generalised guiding notion of 'alternative futures' arguably played a dominant role as a guiding concept in the early development of futures studies and applied foresight (FSAF). Yet the optimism it signified, the sense of unqualified agency, no longer rings true - or at least not as convincingly. The paper explores some of the grounds of this shift and considers some implications. At the outset it's worth noting that while the approach taken here questions notions of discrete alternative macro-futures it in no way questions the value of less ambitious, less monolithic alternatives. Nor does it question other modes of futures enquiry such as the study and use of visioning, alternative images of futures or the very real existence of alternatives at other levels that remain broadly useful in countless futures-related contexts (Dator, 2017). It is significant, however, that visions and images of futures are 'interior' phenomena that originate within the minds of individuals and groups. By contrast, the approach taken here draws substantially on several empirically grounded sources.² Evidence-based work is, of course, also framed and evaluated within prepared human minds. But the nature and quality of the evidence is crucial and requires careful evaluation. Hence this account seeks to balance internal and external factors.

Limitations of space dictate that the paper concentrates on four of many possible factors, each of which arguably contribute to the shift outlined above.

- Global system change and the rise of the Anthropocene.
- The rise of denialism and 'unreality industries' that have inhibited more constructive responses.

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² These correspond to the 'left-' and 'right-hand quadrants' of Integral Theory as mentioned in section 5.

- The role of forgotten, hidden or repressed aspects of the long 'human story.'
- Qualitative development and of methods within FSAF.

A primary feature of our time is that, despite numerous warnings and ever-more reliable evidence from multiple sources, humanity is failing to comprehend and manage its spiralling impacts upon the global system. Significant parts of that system are therefore inexorably shifting away from an earlier, more stable era - collectively known as the Holocene - to one in which humanity is faced with unprecedented existential risks (Curry & OhEigeartaigh, 2018). A clear-headed review of the evidence reveals the same underlying dynamic. Human civilisation has colonised the planet. It operates as a powerful, yet barely conscious, systemic force in its own right. Humanity is clearly challenged to moderate this dynamic in order to maintain the very conditions upon which its well-being depends. One observer encapsulated this change in the following way. For him 'the most significant event in the last century was not the World Wars, the Cold War, the Great Depression, civil rights, or the moon landings. It was when our species overtook the great forces of nature to become the most significant driver of change of Earth's biosphere' (Rockstrom, 2015).

Two broad types of human and cultural response are evident. First, those that broadly accept the evidence and support constructive actions and second, those that seek to deny the evidence and inhibit or undermine such actions. The former may claim a long aspirational track record but remain far from achieving broad recognition and support. The latter emerge from the deliberate, calculated actions of a powerful and well-resourced minority that work directly against primary human interests in a more stable, less threatened, world. Setting aside the vital fact that 'organised scepticism' is one of the non-negotiable norms, or corner stones of science, this group has invested a great deal of time and effort in promoting denialism (Oreskes & Conway, 2011). It has been surprisingly successful in retarding structural change and adaptive innovation at the very time when these are needed more than ever.

The way that these contending forces are playing out stand at the heart of our global dilemma that can appear irresolvable. But this is not necessarily the case. A fresh look at macro-history introduces new and perhaps under-regarded elements into the discussion. It suggests that some aspects of the barely conscious, but commonly accepted, triumphalist 'story' of humanity's rise to global domination may have played a hidden role in creating and sustaining the collective vulnerability of our civilisation. There are at least two reasons why a more balanced view may be helpful. One is that the unacknowledged influence of earlier assumptions can be brought to greater awareness, considered and moderated. A second is that when firmly based on clear historical evidence a generic case for more constructive responses becomes somewhat clearer, better grounded and perhaps even undeniable.

Finally, as the external world has changed so has the evolving domain of FSAF itself. A brief review of aspects of its development as a field of study and action provides clear evidence. It includes shifts away from empiricism and idealism toward a clearer acknowledgement of embedded realities within a more Protean, difficult-to-influence, world. A world in which terms such as 'choice' and 'action,' and indeed 'alternatives', among many others, have become more problematic. Similarly, early futures work tended to focus external trends and developments, which meant that the shaping influence of, for example, values, worldviews and social interests was widely overlooked. Yet by the early 2,000s futures workers nearly everywhere had a much clearer appreciation of systems thinking, complexity, unpredictability and the powerfully shaping role of intangible factors at every level. A crucial shift occurred when it became clear that interpretive capability was as vital as methodological rigour or, rather, an essential aspect of it. The rise of the notion that we are now living in what's been termed a VUCA world (one that's increasingly volatile, uncertain, complex and ambiguous) is consistent with this shift. At some point during this process the notion of clearly defined 'alternative futures' representing real, achievable options, ran out of steam. One reason for this was a growing appreciation of profound changes taking place in the global system.

2. Global system change

2.1. Global warming / heating

The identification of global warming as an issue of concern to humanity has a surprisingly long history. Suffice it to say here that the discovery that carbon dioxide (CO₂) causes heating in the atmosphere is said to date back to the work of Irish physicist John Tyndall in the 1850s. The way in which this was linked to global warming is usually credited to Swedish scientist Svante Arrhenius in 1896. But it took two World Wars and a further century or so for scientific measurements of atmospheric gases to become sufficiently reliable and accurate to support confident statements about what that might imply. Yet when NASA scientist James Hansen fronted up to a US congressional hearing in 1988 he declared 'with 99% confidence' that the visible increases in global temperatures were indeed the direct result of human activities. Although his warnings of likely consequences went largely unheeded, by 1992 the United Nations (UN) felt that there was indeed sufficient evidence to justify a series of international conferences. In 2015 it was finally agreed that accumulated evidence of the many effects of rising temperatures mandated a need for concerted human action to limit them to 2 degrees centigrade or less. While a 1.5 degree target still contained serious risks they were judged 'acceptable' under the circumstances.

But by 2018 actual progress in reducing CO₂ emissions had fallen far short. Global temperatures had increased by the 1.8 degrees suggested by earlier data. Some three decades since his congressional appearance Hansen continued his attempts to warn the world of the now unambiguous dangers it faces (Hansen, 2009). Speaking in mid-2018 he was quoted as saying that the world is 'failing miserably' to deal with the onset of global warming and that 'all we've done is to agree there's a problem'. He added that:

We agreed that in 1992 [at the Earth summit in Rio] and re-agreed it again in Paris [at the 2015 climate conference]. We haven't acknowledged what is required to solve it. Promises like Paris don't mean much, it's wishful thinking. It's a hoax that governments

have played on us since the 1990s (Milman, 2018)

Throughout the latter part of the last thirty years scientists have maintained that for a lasting solution carbon-producing fuels need to be taxed at source. Hanson was also quoted as saying that 'the solutions are not complicated... Emissions are not going to go down if the cost of fossil fuels is not honest. Economists are very clear on this. We need a steadily increasing fee that is then distributed to the public' (Milman, 2018). But solutions that address the source of these problems appear to be beyond the capacity even of advanced and wealthy societies. The Meadows team who ran the *Limits to Growth* (LtG) project, Jurgen Randers and Jared Diamond, along with other qualified observers, all seem to agree on one point. The slow and ineffectual nature of social decision-making is a major contributor to humanity's slide toward more dangerous and disrupted futures (Meadows, Meadows, Randers, & Behrens, 1972; Meadows, Meadows, & Randers, 2005; Diamond, 2005; Randers, 2012).

There is little point in berating America, the United Nations or anyone else for what appear to be near-universal oversights and failings. But the global consequences include sea level rise, radical changes in weather patterns and ocean circulation and the slow but steady acidification of the ocean. Even taken singly each of these is of profound significance. It is therefore not surprising that the first publications declaring that it is already 'too late' to prevent runaway global heating have already appeared (Greer, 2013; Maslin, 2017; Wallace-Wells, 2019a). Here is a fairly typical description of the implications:

The frenetic pace of contemporary life is having a devastating impact on this planet. Humans have transformed more than half the ice-free land on Earth. We have changed the composition of the atmosphere and the chemistry of the oceans from which we came. We now use more than half the planet's readily accessible freshwater runoff, and the majority of the world's major rivers have been either dammed or diverted. As a species, we now hang over the abyss of a geoengineered future we have created for ourselves. At our insistence, our voracious appetite is consuming nature itself. We have refused to heed the warnings Earth has been sending, and there is no rescue team on its way (Jamail, 2019)

Powerful as such statements may be, however, there are other – perhaps better - ways of coming to grips with the issues. One of these is via the notion of planetary boundaries.

2.2. Breaching planetary boundaries

In 2009, some years after the completion of the LtG project, Johan Rockstrom, director of the Stockholm Environment Institute (SEI), Sweden, brought together an international team of specialists to consider the current status of human impacts on the global system. Their interest lay in identifying nine interlinked planetary boundaries that had operated over millennia and sustained the conditions that allowed the rise of human civilisation. Moreover, what was new is that they sought to understand and measure the thresholds associated with each of them. What the team discovered served to confirm some of the key conclusions of earlier work. The group presented hard evidence from numerous sources that planetary boundaries had already been exceeded in three key areas: climate change, species extinctions and the nitrogen cycle. They also concluded that four more - ozone depletion, fresh water usage, ocean acidification and changes in land use - were likely to be exceeded in the near-term future. At the time insufficient data was available to determine the status of atmospheric aerosol loading and chemical pollution (Rockstrom, 2009). Given that this was not a stand-alone study a rational response, even with attached uncertainties, would have been to regard it as a highly credible warning requiring a serious human response. Global systems were clearly diverging from extremely long-term norms so how could humanity not be affected?

Six years later, in 2015, a further study clarified and confirmed these results. Nor was this a simple repeat of earlier work. Rather, some of the key metrics were refined, making them more reliable and accurate. The new study confirmed that four of the nine boundaries had by then been exceeded. Two of these - biosphere integrity and impacts of nitrogen and phosphorus cycles - were now regarded as being 'high risk', while two others - climate change and land use change - were now in the 'danger zone' (Rockstrom, 2015). What these results unambiguously demonstrated was that humanity was changing the way the great global systems, including cycles of matter and energy, operated. Some were not merely shifting but becoming unstable. The prospect of crossing various 'tipping points' in relation to global heating, ocean acidification, pollution and sea-level rise (to name but four) was looking increasingly likely (Slaughter, 2015b; Higgs, 2014). As with earlier studies business-as-usual projections no longer applied. Science could only go so far. What was needed was a strong and united response. Yet without radically transforming what is meant by 'growth' and 'economic development' such a response would remain problematic at best.

So Rockstrom and others proposed what they call a 'great transition' initiative and a 'two-track' approach to bringing it about. The 'fast-track' component would work through existing, albeit obsolete, development paradigms and conventional policy measures. The 'slow-track' component, however, would entail

'a profound mind shift toward universal values that re-connect world development with a resilient Earth, recognise the right of all to development and promote a shift from materialistic lifestyles to the pursuit of well-being and fulfilment.' (It would also involve) three critical transformations ... decarbonising the world economy by 2050 to 2070, feeding the world through sustainable agriculture by 2050 and accelerating progress toward an economy of cyclic material flows ... (Rockstrom, 2015).

Needless to say, these were ambitious goals and in the years since this initiative was announced it would be a mistake to deny that some limited progress has occurred. Currently, however, changes in the global system continue to outpace the human ability to react to them in such far-sighted and rational ways. There is no doubt that, based on this evidence, the outlook for humanity continues to deteriorate.

For all those who have been paying attention the initiatives outlined above have all contributed to a growing body of reliable knowledge about the condition of humanity in relation to the shifting parameters of the global system. They have also confirmed that during the mid-20th century humanity left the relatively benign and stable period known as the Holocene Era during which it had developed and thrived over millennia and entered a new period which has been called the Anthropocene (Slaughter, 2010a; Slaughter, 2012b). This notion originally advanced by geologist Paul Cruzen and others has steadily gained credibility. Consciously or otherwise, most people who have considered the evidence accept that the unprecedented growth both of human numbers and their ramifying global impacts could not *but* have far-reaching systemic consequences. Discussions about exactly when exactly the Anthropocene could be said to have started may never be entirely settled but 1945 is a popular choice. This is where empirical science becomes essential. Time series data collected, analysed, debated and communicated over an extended period paints a very clear picture of what those changes are to the point where denial becomes irrational. Hard evidence from many sources has contributed to a broad and balanced account of the 'great acceleration' that has occurred since World War Two (Lewis & Maslin, 2018; Steffen, Broadgate, Deutsch, Gaffney, & Ludwig, 2015). Hence, overall, there can be no credible doubt that the global system is indeed responding to the forcing effects of human-related impacts. The environmental future looks set to deteriorate even further. Another, mostly under-appreciated, reason for this is the steady approach of what has been called an 'energy / climate chasm.'

2.3. *The coming energy / climate chasm*

Just as all individuals have significant gaps in understanding themselves so there is also a homology of sorts at the societal level where even greater gaps in self-knowledge and understanding can arguably be found.³ Nowhere is this more the case than in relation to energy. It's common knowledge, for example, that the term 'fossil fuels' has been a commonplace term in collective parlance for many years. Yet it's worth asking what this signifies. Fossils are generally understood to be inert pieces of rock or rock-like materials that were formed aeons ago that have been dug up by human hand or revealed by natural processes such as weathering or erosion. So at a very basic symbolic level there's something unusual about marrying the terms 'fossil' and 'fuels' together. Yet few people seem aware of this dissonance for one simple reason - it has become habitual and faded into the background of collective awareness. As will be suggested in part four, below, social amnesia is widely discounted yet surprisingly influential. When millions of people fill their petrol tanks, take a hot shower, board an aircraft or turn on an air conditioner, the last thing on their minds is what this conjunction of terms might signify. But that is set to change.

In their book *The Human Planet* Lewis and Maslin take the reader through several broad stages of what they call 'human modes of being'. These are: hunter-gathering, agricultural, mercantile capitalism, industrial capitalism and consumer capitalism.⁴ They show how per capita energy use in Western Europe increased from about 300 watts during the hunter-gatherer period some 200,000 years ago to about 8,000 watts in the present consumer capitalism phase. Moreover, the time taken to double this energy use fell, stage by stage, from some 2,400 years at the outset to a mere 42 years in our time (Lewis & Maslin, 2018, 350-1). In other words, this is the long pre-history of the present 'great acceleration.' The facts are widely known yet their implications are largely overlooked by affluent populations who have become more dependent than they realise. In the absence of such vital contextual knowledge good decisions, preparations for more challenging futures, become far more difficult.

Alexander and Floyd take a forensic look at the nature of present energy use and options into the future. Their book on *Carbon Civilisation* is essential reading on this topic as it provides a concise and coherent account of the 'energy chasm.' They provide a textbook example of what can be expected when any society or culture exploits a new energy source without careful attention to the new costs and dependencies involved. They note that the fossil fuels that humanity has been burning through in a historically brief period took some 'half a billion years to accumulate' and is currently being used 'a million times faster' than the time taken for their formation (Alexander & Floyd, 2018, 42). They also show that orthodox assumptions that humanity will always find new sources of energy as and when they are required are unfounded. Such assumptions are therefore both misleading and dangerous as they provide a false sense of security. This is not only because fossil fuels are in principle limited and will inevitably decline, but also because the potential of renewables, of 'alternative energy' sources, has been vastly exaggerated. While they are part of any possible solution, they do not even come close when it comes to replacing the concentrated energy of oil, especially as liquid fuels used in virtually all modes of transportation. The energy density of oil has been a one-time-only 'gift' to humanity of strictly limited duration. The writers identify what they term a great 'dark secret,' namely that the approaching shortfall, or 'gap', cannot be plugged by commensurate increases in supply. The only remaining options are for energy efficiency to be increased while, at the same time, demand is drastically reduced. Yet, as they point out, even at this late stage, this is literally unthinkable within a culture committed to economic growth and continued expansion. Here is where some of the details of the trap humanity has constructed for itself become clear. As Alexander put it in a recent speech:

Capitalism wants or needs what it cannot have: that is, limitless growth on a finite planet. This ecological predicament is the defining contradiction of capitalism in the 21st century, insofar as growth is now causing the problems that growth was supposed to be solving (Alexander, 2018).

³ Tainter illustrates this beautifully with respect to the limited options available to Roman emperors given their lack of knowledge in areas such as logistics, economics and monetary policy. (Tainter, 1988, Chapter 5.) Today equivalent areas of blindness would include systems dynamics and the deferred costs of economic growth.

⁴ For more details see Hamilton, 2007, chapter 10.

Turning from issues of supply to those of global heating the picture is equally challenging. As noted earlier CO2 emissions have continued to increase over the decade or more since the United Nations (UN) panel on climate change was established. The weight of reliable opinion now is that rates of warming, and the effects of warming (such as glacier melt, sea level rise, increasingly destructive storms and so on) will push global temperatures well beyond the preferred 1.5 or 2.00 C degree range set as a priority goal. Humanity is therefore confronted with a clear example of impending overshoot. Some of the implications are summarised by Wallace-Wells who writes that:

At 2C, the ice sheets will begin their collapse, bringing, over centuries, 50 metres of sea-level rise. An additional 400 million people will suffer from water scarcity, major cities in the equatorial band of the planet will become unlivable, and even in the northern latitudes heatwaves will kill thousands each summer. There would be 32 times as many extreme heatwaves in India, and each would last five times as long, exposing 93 times more people. This is our best-case scenario. At 3C, southern Europe would be in permanent drought, and the average drought in Central America would last 19 months longer. In northern Africa, the figure is 60 months longer: five years. At 4C, there would be 8m more cases of dengue fever each year in Latin America alone and close to annual global food crises. Damages from river flooding would grow thirtyfold in Bangladesh, twentyfold in India, and as much as sixtyfold in the UK. Globally, damages from climate-driven natural disasters could pass \$600tn - more than twice the wealth that exists in the world today (Wallace-Wells, 2019a).

Given the time needed to put alternative arrangements and systems in place it is clear that deep and serious carbon abatement should already be well in hand. But this has not occurred. Then, beyond this, if the notion of achieving greater global equity in energy usage were to have any meaning, one must admit that it looks highly unlikely under present geo-political conditions. The global community is too preoccupied with its own internal conflicts and insufficiently integrated in relation to its values and purposes to achieve this any time soon. Here, then, are further seeds of conflict for an already insecure and unsettled world. By misconceiving the issues and holding fast to unsustainable values and economic systems, present-day decision-makers are, as the saying goes, effectively 'kicking the can down the road.' So according to the above author:

It would take a spectacular coincidence of bad choices and bad luck to make a completely uninhabitable Earth possible within our lifetime. But the fact that we have brought that eventuality into play at all is perhaps the overwhelming cultural and historical fact of the modern era. Whatever we do to stop warming, and however aggressively we act to protect ourselves from its ravages, we will have pulled the devastation of human life on Earth into view - close enough that we can see clearly what it would look like, and know, with some degree of precision, how it will punish our children and grandchildren (Wallace-Wells, 2019a).

The implications of global system change for FSAF are profound. This is no longer a world within which multiple global futures can be anticipated, explored or designed without limit. Rather, it is one in which overshoot and collapse is increasingly looking like the only credible future available. There are many reasons why humanity has not been able to see this clearly. Among them are that it has failed to free itself from certain powerful ideas (section 3) and other misperceptions that originate far back in human history (section 4). Consequently humanity is entering new and largely unexplored territory broadly unaware of what this means and poorly equipped to make wise choices.

3. The power of past ideas

3.1. Neoliberalism and the flight from reality

Throughout earlier years many practicing futurists sought to democratise the future by promoting notions of empowerment, choice and alternatives (1981, De Jouvenel, 1967; Henderson, 1978, 1996; Jungk & Mullert, 1987). Yet at the same time a different view was gaining dominance especially in the US. Following the chaos and devastation of two World Wars powerful interests there asserted that its strategic intent and preferred path into the future would be to achieve global dominance. This required it to plan for overwhelming military might, a resurgent corporate sector and investment in the rapid development of new technological capabilities. Allied with this is a strong sense that during the last several decades the US appeared to loosen its grip on reality in part by allowing non-, and irrational elements within its culture to become increasingly widespread and influential. An entire branch of literature has recorded and tracked this loss of a common world of understanding and value right up to the present time (Bloom, 1987; Mitroff & Bennis, 1989). It is widely accepted, for example, that this process paved the way for the election of the current White House incumbent (Andersen, 2017).

Within this environment it is not surprising that many US-based futures practitioners tended to frame their forward thinking within an expansionist, technology-focused worldview. A common default assumption regarding the supposed 'neutrality' of technology served not only to separate it from its foundations in social, corporate and economic interests but for many to regard it as perhaps *the* major force in creating the future. Yet the nature of those interests and their embedded assumptions were and remain as influential as any of their tangible products (Zuboff, 2019; Slaughter, 2015a; Urry, 2013). The rise of neoliberal ideology in particular has shaped our present world every bit as much as computing, antibiotics, the Internet and nuclear weapons are often thought to have done. It has done so by embracing and disseminating a diminished worldview that denies or avoids broad swathes of reality. This leaves vested interests to pursue their various goals regardless of the wider social implications. In so doing some of the most vital fields of knowledge required to understand the 21 st Century human condition have been overlooked and many promising pathways have been blocked.⁵ Given the scale and truly global implications it helps to be clear about the origins and consequences of neoliberalism.

⁵ For example: the complete dependence of humanity on the natural world; the responsibility of business to observe credible social norms; the distinction between 'having' and 'being' and, last but not least, the need for government oversight – especially in the IT sector – and high-quality social foresight.

A pivotal role in this account belongs neither to a technologist nor an entrepreneur but to the stark and rigorous vision of an atheist writer whose influence continued long after her death in 1982. Ayn Rand was a powerful and effective advocate of a philosophy that promoted what she called 'the virtue of selfishness.' A philosophy of rugged, uncompromising individualism, it encouraged contempt for the state and other, dissenting views. As a dedicated empiricist she had no time or patience for anything that could not be directly experienced. Then, as now, her 'influence is manifest less in party political libertarianism than in a single-minded determination to follow a personal vision, regardless of the impact.' This is 'an ideology that denounces altruism, elevates individualism into a faith and gives a spurious moral licence to raw selfishness.' It comes as no surprise to discover that there are strong and direct links between Rand's ultimately sterile views and 'the princes of Silicon Valley (who are) driven by their own genius to remake the world and damn the consequences' (Freedland, 2017).

Other figures with similar outlooks took up some of Rand's core assumptions and applied them more widely. Her followers included Alan Greenspan, chairman of the US Federal Reserve for close to two decades and economist Milton Freedman of the Chicago School of Economics. Hayek's influence is also significant here since his thesis in *The Road to Serfdom* (Hayek, 1944) provided further support for what were then called 'free' markets, small government and minimal regulation. Robert Bork, a specialist in anti-trust laws at the Yale Law School, also insisted that 'the sole matter that should concern regulators was whether prices to consumers were falling.' This one apparently obscure distinction has, however, had world-changing consequences. It meant that 'the conservative professors who dominated the Chicago school faculty discouraged any belief that government could or should play a role in regulating business. The 'free' market needed to function, unencumbered by government regulation.' Hence, according to Taplin, 'Google, Amazon and Facebook are all monopolies that would be prosecuted under anti-trust statutes if it were not for Robert Bork' (Taplin, 2017, 109-12).

When Barack Obama came to office as a progressive president with a 'yes we can' slogan many hoped that he would help to moderate this 'winner takes all' ideology. But it was beyond even his capability to challenge the market-led credo and associated 'unreal industries' of the time or to see where the 'weaponised' Internet was heading.⁶ Following the 2008 Global Financial Crisis (GFC) Obama again failed to prosecute those in Wall Street responsible for creating 'junk bonds' and other worthless financial instruments. They were, as the saying goes, 'too big to fail'. Despite a Federal government in perpetual conflict he finally succeeded in getting his signature health care legislation passed. But the power of 'special interests' meant that he was unable to bring the banks, the corporate sector and Silicon Valley to heel. Which helps to explain why an ideology that elevates hyper-individualism, worships 'unfettered markets' and turns a blind eye toward socially divisive enterprises continued unabated. The 2016 US election then dashed the hopes of all those who sought a reduction in growth- and technology-led, corporate power. Instead the latter found a dangerously myopic, idiosyncratic, neoliberal champion in the new president so any hope of reform was again deferred.

A profound irony attends these concerns since so many of the positive innovations, strategies and people required to bring about progressive change themselves emerged within US culture and society (Bell, 1997). But it seems clear that many were out-manoeuvred and overwhelmed by divisive social trends exacerbated by an ideology that, far from removing or resolving change-resistant interests, inscribed them ever more deeply in US life and culture.⁷ While 'innovation' is often viewed as a core value of US society and culture, history is likely to regard some of its consequences as counter-productive or worse. Although the downfall of neoliberalism is by now inevitable, the disruptions and induced 'lag effects' are real and the evidence gathered here suggests that its consequences will resonate far into the distant future.

3.2. Denialism and its consequences

Straightforward denial is a strategy used by virtually everyone to block or negate some aspect of reality that they find unwelcome or uncomfortable. It's one of many that people use to protect themselves from aspects of the world that disturb, frighten or challenge them. Reducing and avoiding such incursions can engender a sense of equilibrium. We may not be ready to confront something. It may be the wrong time. We may feel under-equipped to deal with it or simply be managing other concerns that leave us feeling unable to cope with new demands. But from the mid-Twentieth Century denial as a psychological gambit became something far more dangerous when it was actively and aggressively deployed in defence of a particular worldview. In effect it became institutionalised and transformed into an offensive weapon for social, economic and political ends. If the rise of the early environmental movement in the 1970s was the beginning of broad-based attempts to come to grips with pressing global concerns - such as pollution and threatened wildlife - then the rise of organised denial was explicitly intended as a counter-trend. Its purpose was to undermine, divert and in many cases destroy the credibility and careers of those working for positive change. Moreover, this manufactured conflict was not confined to a few isolated issues - it targeted a series of them and continues to this day. Simple human denial was transformed into denialism per se (Slaughter, 2014).

The underlying reasons for the emergence of denialism as a deeply regressive ideology are both tragic and ironic. They can be viewed as a consequence of the 'free market' itself creating systemic problems it neither understood nor was equipped to solve. Virtually all the issues that arose can be viewed as market failures. They include various forms of pollution (DDT, acid rain, CHCs diminishing the ozone layer, cigarette smoke), the tangible costs of raw economic growth (decimated wildlife, resource shortages, social disruptions, global warming) and a host of other unaccounted-for 'externalities'. Rachel Carson, whose famous book *Silent*

⁶ Pictures of Obama sharing the stage with Zuckerberg show that the President was unaware of the mass dispossession of human resources by 'social media' that were well under way at the time.

⁷ For an overview of this process see Slaughter, R. 2010, chapter 2: Conventional Responses.

Spring described the widespread consequences of DDT accumulation in ecological systems, was merely one of the first who drew attention to these issues (Carson, 1962). Even years after her death her work was still being subjected to sustained attacks by those who sought to deny the consequences. Oreskes and Conway's now-classic work *Doubt is Our Product* remains a primary resource that tracks these manufactured conflicts over decades (Oreskes & Conway, 2011).

Then just as the neoliberal project had invented its own institutional frameworks, donors and champions to support its emergence and subsequent growth, the denialist enterprise did exactly the same a few years later. For example, in his book *Scorcher*, Clive Hamilton writes that:

In addition to front groups and industry-funded websites a number of right-wing think tanks have played a role in preventing action on global warming. Perhaps the foremost has been the Competitive Enterprise Institute, a Washington-based conservative think tank 'dedicated to advancing the principles of free enterprise and limited government'. Among its many statements denying the seriousness of global warming are claims that climate change would create 'a milder, greener and more prosperous world' and that 'Kyoto was a power grab based on deception and fear'. Corporate funders include the American Petroleum Institute, Cigna Corporation, Dow Chemical, EBCO Corp, General Motors and IBM, as well as ExxonMobil' (Hamilton, 2007, 131-2).

One of the most penetrating and insightful accounts of this phenomenon is John Urry's book *Societies Beyond Oil* in which he describes in some detail how the 'carbon complex' in the USA 'shaped the world to its developing interests since the 1970s' (Urry, 2013, 86). He adds that during the 1980s US corporations developed a 'counter activism' against environmentalism and brought about a virtual moratorium on new environmental legislation as well as reversing other US regulations' (Ibid, 83). This succeeded in heading off the perceived 'threat' of low-carbon energy strategies that had emerged earlier and refigured very different modes of development. In retrospect it's obvious that at each stage of this process viable future options were being shut down and foreclosed. Yet this was never merely a question of ideology per se. The broad influence of neoliberalism was itself extended and multiplied by rich and powerful donors who employed their vast resources to achieve their goals. Jane Mayer's book *Dark Money* shows in some detail how two leaders in this enterprise - the Koch brothers - operated (Mayer, 2016). In the words of one reviewer they 'created a private political bank capable of bestowing unlimited amounts of money on favoured candidates, doing it with virtually no disclosure of its source'. The Kochs had 'made their money in the carbon business' ... and have since 'been at the forefront of climate-change opposition over the past decade' (Ehrenhalt, 2016).

While the US has been, and remains, the heartland of denialism, other countries have not been immune. Although on a distinctly smaller scale Australia also has a history of right-wing organisations intent on extending the use of CO₂-intensive coal resources, opening new mines and watering down attempts to meaningfully reduce emissions. This at a time when rising sea temperatures and the steady increase in ocean acidity are placing the very survival of the Great Barrier Reef at risk. Here, as elsewhere, the conservative media have often represented global warming as a debate between two equal sides rather than an extensive body of well-established scientific facts against obscurantism and self-interest. As Hamilton noted back in 2008 NewsCorp's *Australian* newspaper has 'for years been conducting a sustained war on climate science and the Kyoto Protocol'. He adds that it 'promotes a form of anti-scientific fundamentalism that has less regard for scientific method than the most committed constructivist on any university campus'. Finally, one of his closing comments is worth reiterating here. He writes that 'every piece of evidence that challenges their convictions represents a profound threat to their world view' (Hamilton, 2007, 163-4). It is not so much technology per se that has brought the world ever closer to the risk of diminished and perhaps catastrophic overshoot and collapse (O&C) futures so much as the specific worldview and values that were enacted through and by it (Slaughter, 2010b; Gidley, 2017).

Multiple forms of institutionalised denialism are now writ large across the world and will not be quickly undone. Credible warnings about critical issues have therefore often proved ineffectual. If the warnings are not believed and acted upon, or believed and not acted upon, the result is the same. The savings that flow from timely and effective foresight have been widely denied to societies whose need for them has grown steadily over time. It's this gap, perhaps, more than anything else that fuels a sense of social and economic dysfunction in the hearts and minds of so many people. Dissonances experienced within the realm of everyday life create contrasts and contradictions that are both troubling to individuals and deeply threatening to the societies in which they live. So it is not surprising that what might be called the 'dynamics of denial' are increasingly visible. They are seen in the loss of hope, in a range of health effects and the rise of cultural products of a Dystopian or apocalyptic nature. It is then but a short step to the creation and replication of 'collapse narratives' that further embed the notion that as Schell put it some years ago 'formerly the future was given to us, now it must be achieved' (Schell, 1982). Yet some of the keys for dealing with this apparently intractable impasse have deep historical roots.

4. Reflections on the long 'human story'

4.1. A hidden side of macrohistory

Attempts to depict stages of human history on a variety of scales are neither new nor uncommon. They range from what has been called 'big history' starting with the 'big bang' proceeding through various phases of cosmic and planetary development up to our present time. Others employ more limited timescales and have a more close-up cultural or human focus. While useful for various academic or historical purposes these are perhaps of limited value when considering long-term changes over the vast span of human evolution. In the present context the most useful accounts are those that embrace panoramic views of human civilisational developments from the very earliest times. Taking the 'long view' back enables us to grasp, and reflect upon, changes to humanity itself, its cultures and the natural world over millennia. 'Species exceptionalism' has many aspects but the significant point here is how

accounts of the human project tend to focus almost exclusively on innovations and achievements. The overall tone is celebratory and expresses a widely shared sense of 'species pride'.

A case in point can be found in a special issue of Scientific American entitled *A Singular Species: The Science of Being Human* that sought to identify the main features leading to humanity's success (DiChristina, 2018). This is the default or 'standard story' of humanity's emergence from pre-history to world dominance. But the dilemmas facing humankind in the 21st Century are precisely those that have arisen not merely from one or another kind of success but from a vast and never-ending sequence. The combined effects of unconscious pride, ethnocentricity and unthinking exceptionalism are seldom openly acknowledged. But the focus on success and achievement seems to have obscured this 'other side' of all this progress - costs, dependencies and long-term consequences. Yet the human story cannot be understood without including cascading consequences and planet-wide impacts. As the unmistakable signs of 'overshoot' phenomena bear down upon us; as these become closer, more frequent, dramatic and credible, civilisation itself becomes ever more exposed and vulnerable.

Lewis and Maslin's *The Human Planet: How We Created the Anthropocene* (Lewis & Maslin, 2018) has particular relevance here for a couple of reasons. First, they show how so many of the factors that now loom large in our day had their origins all the way back at the very start of human history. Second, they argue that many - if not all - of the inventions and changes hitherto represented largely as 'successful gains' also brought 'progress traps' in their wake. These are consequences with hidden costs that only emerged over time.⁸ Some examples are summarised in Table 1.

From about 50,000 years ago social learning, and the creation of cumulative cultures in pre-historical times, led to a new reality. In essence this lifted human horizons from the limitations of pre-historic hunter gathering. Over a vast period of time more and more people and groups were able to organise more effectively and to reap the benefits of cooperation. They could hunt more effectively and kill more animals. But the long-term consequences included fewer animals and, eventually, the extinction of the Megafauna. Lewis and Maslin then use the term 'ratchet' to describe the subsequent process of domestication. Once this had been achieved, populations grew beyond the previous carrying capacity of the land, thus making it difficult or impossible to return to an earlier stage of development.

A similar effect also occurred later with the first round of globalisation often referred to as 'the Columbian exchange.' It, too, initiated another irreversible, one-way process by providing wealth, land, new foods etc. for the victors and humiliation, penury and death for the conquered. The stream of organisms (including diseases), people, books, ideas, religion and the rest flowed back to Europe and subsequently around the world. Colonialism radically boosted the ability of Europe to live beyond its means and, in so doing, set up a model that Western civilisation would follow thereafter. At a later stage it led to a scientific revolution setting in train challenges to authority which led to the steady decline of the latter. There were many obvious gains in science and technology, new social forms were created along with further sources of conflict. Luther's role in the Reformation is very much part of that picture as scholasticism gave way to critical thinking and greater individuation. Such changes were then again supercharged by the Industrial Revolution with its own pattern of successes and cascading consequences. On the one hand new products and sources of wealth; on the other 'satanic mills', newly exploited underclasses and the beginning of the fossil fuel frenzy that remains with us today. Summarised in these terms it is obvious that history has always involved spiraling costs along with all this 'success'. Farming itself is now believed to have been responsible for maintaining an 'extended inter-glacial period' of human flourishing we call the Holocene. But the unthinking exploitation and use of natural resources, and especially fossil fuels, has inevitably led toward our current dilemma with rapid global heating and the energy chasm described above.

Lewis and Maslin also draw attention to the critical role of the stories that humans, and human societies, tell themselves. I have suggested here that the dominant story of progressive human success creates a narrative that highlights one dynamic of history at the expense of obscuring the costs and penalties that attend every stage of that story. This helps to explain why the existential threats now facing the species are not more commonly acknowledged. Positive human stories appear to fit much more readily into the unconscious self-understanding of the human psyche. Yet, at the same time, superficial use is made of these same tendencies by neoliberal capitalism and reinforced continually through pervasive marketing that works to normalise profit-, and growth-oriented institutions. In this view, human history cannot properly be described in terms of an imagined 'arc of success' from darkness to light, from ignorance to wisdom. The fact is that while success produced benefits for some or all at any one time they also contributed to the accumulating costs that were deferred into the ever-receding future. Some of those displaced futures of accumulated costs have finally arrived in our own fractured and highly unstable present.

4.2. Progress traps and the modern world

These and related deficiencies continue to allow powerful agencies within some of the richest and/or most technically developed societies (the USA, Russia, China) to engage in modes of development with little or no appreciation of the inevitable progress traps and deferred costs that accompany them. In a more measured and far-sighted view with a more nuanced understanding of history, ambitious developments might well have been considered and evaluated with far greater care. For example, the global financial crisis (GFC) of 2008 revealed the dangers of under-regulated financial markets that had lost any connection with the real world. Abstraction was piled upon abstraction merely to satisfy the greed of a vanishingly small group of individuals and organisations. The wider implications did not figure anywhere in their calculations. Yet the result was that profits were privatised whereas the costs were socialised, spread throughout society. This pattern is not dissimilar to the emergence of 'wild globalisation' that transformed

⁸ Since the authors also argue that there is, in fact, no real 'ladder of progress' these could also be called 'development traps'.

Table 1

Cumulative Progress Traps From 100,000 BP* to Present.

(Source: Lewis & Maslin, 2018)

| |
|--|
| Social Learning -> cumulative culture -> hunting success -> increased pressure on food sources -> extinction of megafauna |
| The Domestication Ratchet -> population increase -> hunting & 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 & 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 increase dramatically ->?? |

* Estimated time Before Present.

trading and markets into a vast integrated global economic machine. But, again, it led to perverse and highly unequal outcomes that have since been strongly identified with the emergence of dissatisfaction and protest in many different places (Piketty, 2013).

Finally, throughout this same period, powerful corporate and military entities have sponsored waves of technological innovation that have disrupted, and continue to disrupt, long-standing social structures, professions and, indeed, the integrity of global life-support systems. One of the most far-reaching errors of the post-war US Federal government has been its failure to recognise the radical ambiguity of rapid high-tech innovation and the corresponding need for more effective oversight and regulation. This is particularly true of IT innovation and the subsequent rise of a debased and compromised Internet (Lewis, 2019). As is now well known, the latter allowed vast global monopolies to grow wealthy through the wholesale theft of personal data which is on-sold to advertisers and the peddlers of influence. It has also led to the creation in China of the world's first technological dystopia (Slaughter, 2018). The term that best describes this reductive and openly dysfunctional system is 'surveillance capitalism.' It, too, constitutes a vast 'progress trap' that now poses historically unique challenges to every society on Earth (Zuboff, 2019).

What has been widely missed is that unconstrained processes of socio-technical-economic innovation based on unexamined assumptions, inadequate values and limited worldviews have created new dimensions of hazard and risk. Some have already led to the collapse of human and natural sub-systems that were stressed or exploited beyond their natural tolerance (Diamond, 2005; Tainter, 1988). It follows that there is plentiful evidence to support the view that the human prospect now appears increasingly bleak. Tacit images of failed futures are constantly reflected back at entire populations through the replication of fictional Dystopias in virtually all media. Yet such phenomena are not always quite what they appear and require careful evaluation. Research by Kareiva and Carranza, for example, suggests that popular media treatments of Armageddon tend to attribute responsibility to visible causes such as out-of-control technology, over-industrialisation and population growth. In their view, however, the most serious existential risks facing humankind are largely of a different order. They are hidden away in positive feedback loops and 'multiplicative stresses' within the global system itself (Kareiva & Carranza, 2018).⁹

Clearly O&C phenomena are not merely possible - they are already occurring in multiple locations. The global system itself is reacting to numerous impacts and forcing events such that even mainstream news media are beginning to acknowledge the likelihood of systemic breakdowns (Wallace-Wells, 2019b; Watts, 2019). These issues all have major implications for FSAF.

5. Evolution of studies and applied foresight

5.1. Changing paradigms, approaches, methods

There are many reasons why the field of Futures Studies and Applied Foresight (FSAF) emerged when it did after World War Two.

⁹ Intriguingly these comments evoke the work of the Meadows team and the LtG project described in part 2 that pioneered the use of dynamic models of the global system.

One of the most obvious was a sense that, after the obliteration of Hiroshima and Nagasaki by nuclear weapons, questions arose as to whether there might even be a future for humans on a devastated planet. Even when the overt fear of direct conflict subsided it arguably continued to exert a variety of influences within the human psyche. Equally, if one assumed that there would indeed be some sort of nuclear conflict it could take a variety of forms. From these assumptions a view quite naturally emerged that there were choices to be made, priorities set and alternatives to pursue. Before long the latter notion became widely regarded as a handy justification for all kinds of future-related projects, few of which could be considered 'mainstream.' However, 'alternative futures' remained a 'significant orienting concept' for many years because it supported notions of autonomy and choice for a broad range of people.¹⁰ As time passed the field progressed through several stages and a distinct disciplinary lineage began to emerge. This is a huge topic and one that necessarily requires the input of others. In the limited space available the following account draws primarily on the writer's own experience, that of close colleagues and available material.¹¹

It's widely accepted that the field had its origins in the post-war US in the form of war games and strategic analysis. The name most commonly cited from this period is that of Herman Kahn who is often credited with inventing scenarios and the Delphi method. Some of his most well-known work dealt specifically with the implications of nuclear war, but it was not long before wider applications emerged within the government and a resurgent corporate sector. The dominant methods of the time included quantitative forecasting, trend analysis and technology assessment. This work was not lacking in intellectual heft but it tended to be narrowly based on empirical methods derived from positivist outlooks which themselves were driven by notions of prediction and control. Thus to later arrivals this tradition sometimes appeared over-confident in its prescriptions and not always open to other approaches. Perhaps its greatest weakness was that it overlooked the active influence of powerful socio-cultural factors such as language, values, power and embedded social interests. The primary world, the main focus of attention, was the external, measureable world. Which often meant that the interiors of cultures lay out of sight and overlooked.¹²

The emergence of critical futures studies (CFS) occurred for at least two key reasons. One was a direct response to what were perceived as systemic limitations within the earlier tradition. A second drew on advances in the social and human sciences that brought new concepts and understandings to bear. Among these were critical sociology, Hermeneutics and the post-modernist interrogation of embedded issues such as power, language and meaning (Ramos, 2003). Careful attention to such sources meant that CFS could begin to draw attention to what were arguably deeper and broader views of reality. Words, for example, do not just 'mean what they say'; they are constituted in various ways according to different cultures, traditions and ways of knowing. This felt like new territory at the time. But it enabled some fundamental changes to occur. The exterior empirical world 'out there' was increasingly understood to be influenced by the prior existence and active influence of interpretive worlds 'in here.' Futures work could no longer be seen in a unitary way. Complexity, nuance and depth lay in every direction. Another powerfully clarifying notion emerged from the work of the German philosopher, Jurgen Habermas. He argued that all individuals inherently possessed what he called three 'constitutive human interests'. He called these the 'technical', 'practical' and 'emancipatory interests' (Habermas, 1971). Viewing the world through these lenses highlighted the fact that they were not equally represented within human societies but often radically out of balance. Here, then, was another source of insight into, and critique of, technically advanced societies: how was the emancipatory interest expressed or repressed within them?¹³

What has been called the 'critical turn' in FS re-focused attention upon the hitherto overlooked interiors and, in so doing, revealed the endless processes of social construction and legitimation (Luckmann & Berger, 1967). With this in mind it became possible to more clearly identify abuses of power and the origins of conflict. Embedded processes of meaning-making and loss of meaning became more accessible. As the dynamics of the social world came into view quite new insights, methods and professional options also began to emerge. For example, by 1989 it became clear how viewing futures work in terms of 'layers' enabled practitioners to understand more clearly how different phenomena required different approaches and tools (Slaughter, 1989; Slaughter, 2002). Similarly, questions of gender and gender equity no longer remained a minority concern hidden away in the background. They became a distinct and visible presence that challenged the dominance of patriarchy virtually everywhere (Gidley & Ferguson, 2015; Jarva, 2005; Milojevic, 2005).

What Gidley refers to as cultural and participatory futures drew on these sources and introduced other new elements into the field. Qualities of imagination and creativity, along with new inputs from related areas such as constructivism and ethnography extended the reach of futures enquiry. As did the rise of participatory approaches drawing on action research and hope theories for human empowerment and social transformation. Visioning, action research and new forms of activism were added to the ever-growing list of widely used methods and tools. Following a decade-long gestation period Integral Futures (IF) led to a further phase of integration

¹⁰ It should be noted that this discussion focuses on implications of this concept. It should not be taken as applying to scenarios.

¹¹ For a broader view see accounts provided by Slaughter, 1998; Bloom, 1987; Ehrenhalt, 2016. Beyond this there's a clear need for fresh thinking to clarify just what aspects of a complex world in deep crisis can support notions of human agency expressed through notions of alternatives. See, for example, Higgs, 2014).

¹² Thus Khan, for example, could consider nuclear warfare in strategic, logistical and geopolitical terms but completely overlook the sources of fear and terror within the human psyche and political structures of the time.

¹³ None of this is esoteric. *The technical interest* is about work and getting things done. It's about rules, methods, machines, efficiency and so on. It keeps the lights on. But it also thrives in high tech, bureaucratic and top-down authoritarian societies. *The practical interest* deals with interaction. It is grounded in concerns about how people interact, and especially how they communicate. It values interpretive understanding and how these translate into practical life choices. Finally *the emancipatory interest* is both the most interesting and sometimes the most problematic since it is concerned with power, freedom from oppression and the exercise of human autonomy. It supports critiques of domination, oppression and distorted communication (Habermas, 1971).

and development. Transpersonal theorist Ken Wilber played a central role in creating an intriguing - some would say 'over-ambitious' - meta-perspective (Slaughter, 2012a). Yet it was sometimes forgotten that this rested on a clear and detailed appreciation of a huge body of earlier work by many other writers and researchers, Aldous Huxley and Jean Gebser being among them (Gidley, 2016; Wilber, 1995). The breadth and reach of the approach ruffled a few feathers but the perspective - and especially Wilber's four-quadrant model - helped to refresh and reinvigorate the language and symbolic power of futures work across the board. It was soon regarded as a valuable addition to the expanding futures 'tool kit' (Slaughter, 2005, 2012d).¹⁴ As is now well known the model proposed four 'windows on reality'. These are metaphorically similar to layers in that they each refer to a specific domain with 'ways of knowing' specific to each (Table 2).

The simplest use of this device is as a checklist that asks if anything vital has been left out of a particular account or project. But the model is far from static. Within each quadrant there are levels, lines and stages of development particular to it. It is here that the implications of Integral perspectives began to emerge. The inclusion of widely researched and well-understood developmental structures within each domain took interested practitioners into new - or at least 'under populated' - territory. It enabled deeper, broader understandings of different aspects of the world, including the active, shaping roles of people and cultures. Values and worldviews, for example, no longer appear as vague and difficult to grasp. When viewed developmentally they sprang into much clearer focus. A sequence of insights in this area led on to the development of what Beck and Cowan called *Spiral Dynamics* (Beck & Cowan, 1996). The point is that deeper insight into the interior worlds of people and cultures help to illuminate processes of continuity and change that arguably lie at the core of futures work (Esbjorn-Hargens, 2009).

5.2. Qualitative gifts for a troubled world

The implications of these shifts of perspective and of methods are decidedly non-trivial. For example, within the Integral model, a shift in worldviews from conventional-, to post-conventional thinking and action in the UL quadrant arguably provides one of the keys to dealing with complex issues and exploring the grounds of livable futures. Conventional outlooks identify ways that people adopt standard, largely passive ways of thinking and operating, therefore fitting into the existing status quo, however unjust or unsustainable it may be. On the other hand, post-conventional outlooks embody an awareness of the 'constructedness' of things. They are not only distinctly richer and more complex but also allow for a certain distance from taken-for-granted structures and open to a broader array of possible responses (Slaughter, 2012c; Hayward, 2005). Similar distinctions can be found within many other lines of human and cultural development. It can be shown, for example, how values of ascending complexity and reach provide many clues about what inner resources are required to help move the species forward toward better times (Beck & Cowan, 1996). So, in brief, what Integral perspectives (plural) offer is a powerful set of tools and methods for understanding the world more clearly in both its interior and exterior aspects.

By drawing on a range of different areas and fields the FSAF domain has clearly moved well beyond its earlier limitations and to create an ever-changing synthesis. Like the *Knowledge Base of Futures Studies* (KBFS) itself, it can be identified through a core of distinct elements that distinguish it from other areas or fields (Slaughter, 2005). But it is also connected laterally with related domains and therefore has few or no actual boundaries. As such it can borrow, adapt and re-purpose resources from almost anywhere. As noted above the field has been greatly enriched with material drawn from LH quadrant sources such as social construction theory, post-modernism, hermeneutics, gender theory and many others. But its interactions with some RHQ (right-hand quadrant, or external collective) sources give cause for concern because it's here that futures work can become compromised and unbalanced. This arguably happens whenever 'the future' is exclusively identified with new technology, the Internet, Transhumanist ideology and the other high-tech wonders that are constantly produced without regard for human life or global limits (Gidley, 2017). More robust ways of understanding and responding to these concerns can undoubtedly be found within social studies of science but these have yet to be widely taken up and applied within FSAF. There is, however, huge potential for them to do so. The power of well-grounded critique to penetrate the assumptions underlying so much ill-directed technical development is well worth investigating in depth (Greenfield, 2017).

Social construction theory has clearly revealed how definitional power is projected upon society through commercial applications of high technology - which helps explain why we are living with a degraded and dysfunctional Internet. The question then arises as to how such interlocking structures of exploitation and power are maintained and legitimated over time. The present struggle to limit the power of the Internet oligarchs and their investments in 'surveillance capitalism' is just such a legitimation crisis (Zuboff, 2019). Responding to this and the immanent onset of high-tech Dystopian systems of social control - such as those under way in China - calls forth a kind of 'grand refusal' of developments that ignore human interests and cannot but be eventually self-defeating. It follows that the processes of meaning-making, empowerment and social innovation that are central to applied futures work take on greater salience and purpose as the stakes continue to grow.

Overall, this is a time when we might want to celebrate the fact that innovative future work is occurring in many forms and emerging in many different places. It is clearly beyond the scope of this piece to enumerate them. Some examples can, however, be briefly mentioned. One international group of scholar practitioners has drawn inspiration from the pioneering studies of 'anticipatory systems' carried out by Rosen (Rosen, 2012) and others. It is exploring the view that a deeper understanding of anticipatory assumptions and systems provides better-grounded and more useful ways of understanding how conscious agents in the present interact

¹⁴ The notion, however, that 'all models both reveal and conceal at the same time' was repeated frequently with the intention that the limitations of new methods should be borne clearly in mind.

Table 2
The Four Quadrants of Integral Enquiry

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- The upper left quadrant (UL) - the interior world of each person.
 - The upper right quadrant (UR) - the external world of each person.
 - The lower left quadrant (LL) - the interior world of culture.
 - The lower right quadrant (LR) - the exterior physical world.
-

with this powerful idea of the ‘not here and the not yet’ (Fuller, 2017; Poli, 2017). The group has undertaken an ambitious research agenda supported by UNESCO that seeks to extend the scope of this work around the world (Miller, 2018). The fact that such work is highly abstract, conceptually demanding and essentially philosophical in nature suggests that it may have limited appeal in the short term. If successful, however, the long-term implications could be profound. Another who has responded to our current sense of upheaval, threat, change and radical difference is Islamic scholar Ziaddin Sardar. Following on from earlier critiques of Western hegemony and colonialism, he has explored a range of responses to this drastically altered environment. His suggestions about how post-normal thinking and methods can yield insights and practices that are relevant futures enquiry in this context are well worth considering (Sardar, 2015).

Similarly, growing awareness of a VUCA world means that practitioners know that simple explanations and quick fixes are no longer adequate. They are adapting and refreshing earlier methods in the light of shifts and challenges outlined here. One example of this work is provided by Burrows and Gnad in their description of the Dahrendorf Foresight Process. In their view ‘the art of strategic foresight is to connect the data points of today with the trends, drivers and key factors of change of tomorrow – and to separate the wheat from the chaff’ (Burrows & Gnad, 2018, 11). As with the anticipation theorists they pay careful attention to assumptions before generating multiple scenarios along with relevant indicators and narratives of change. This more flexible and elaborate methodology is aimed at assisting the EU ‘to regain the political initiative’ not only to reinvigorate what they call the ‘European idea’ but also to ‘think the unthinkable’ about scenarios and events that could ‘bring the European project to its knees.’ Such examples suggest that many in the profession are taking the problematic present, and ever more problematic future, very seriously indeed and adjusting their work accordingly.

6. Conclusion

This paper has suggested that for many years the notion of ‘alternative futures’ arguably constituted what was widely seen as the ‘master concept’ of Futures Studies and applied foresight. It articulated a central goal of the field and, at the same time, provided an implicit assurance that such alternatives could be meaningfully explored. From there it seemed but a short step to assume that ‘preferred futures’ could then be selected as legitimate aspirations at the personal, organisational and social levels. If one could visualise such nascent futures clearly enough, and if one was prepared to cooperate with others to put in the necessary work, it was widely believed that such futures could be realised. But those days are behind us and these assumptions no longer ring true.

Mainstream opportunities to respond to the all-too-obvious dangers and dilemmas ahead arose many times during the late 20th Century but were widely ignored. Despite this, the pace and quality of futures work picked up around the 1970s with the *Limits to Growth* project and related projects (Meadows et al., 1972). In time the post WWII period became known to those who were paying attention to processes of global change as the time of the ‘great acceleration.’ The time, that is, when human impacts of the planet grew exponentially with each passing decade. Yet, at the same time, ‘unreality industries’ were multiplying such that reason, truth and science (to name but three of the casualties) were effectively undermined and neoliberal ideology spread across the globe. Despite a series of UN conferences and related efforts to highlight vital global issues, the palette of options for navigating between generically different futures began to fade. By the early 21st Century denialism had taken on a more pathological form and it was no longer irrational to wonder if an escape from the consequences of our current global trajectory toward overshoot and collapse was even possible. Multiple high-tech diversions, surrogate worlds, virtual realities, along with implacable marketing and age-old strategies of denial and evasion, served to insulate vast numbers of people from systemic changes occurring around them in the real world. Yet other choices, other strategies have always been available.

For example, rather than seeking to maintain the illusion that all is well it makes sense to devote vastly more time and energy to understanding in detail *the nature of the trap our species has created for itself*. The prospects for reducing our collective impacts on the global system soon enough to make a difference are certainly declining. In this context the quest for ‘alternative futures’ per se becomes increasingly problematic as a mosaic-like but almost singular macro-future bears down on humanity.¹⁵ How can we act to recover our options and reduce the damage? We could perhaps go beyond earlier notions of sustainability and turn our attention toward processes of renewal, resilience and conscious descent. Access to appropriate values is vital. Their singular power to enliven our understanding and engender ‘fresh eyes’ is well understood. Here, too, is where vision and capability can be reinvigorated. The consequences are non-trivial: new options and strategies appear under even the most trying circumstances (Floyd & Slaughter, 2014; Macy, 1983; Solnit, 2005).

¹⁵ The term ‘mosaic future’ is intended to signify a dominant future that is singular in many or most of its structural components but within which there are many sub-systems and elements that remain dynamic, open, unfinished and evolving. Future work will need to address this hypothesis in greater detail than is possible here. For example if, as suggested here, human agency becomes problematic at the macro level, at what levels and in what specific ways does the search for alternatives regain viability and coherence?

The paper has attempted to explore four of the many factors that have led to the present civilisational impasse. It explored the significance of changes in the global system and the implications of denialism. It looked back at stages in the very long history of humankind and noted how a series of 'progress traps' were created from the very beginning. Their steady accumulation throughout human history has finally brought us to a point where the ultimate trap is arguably that of high-tech civilisation itself.¹⁶ Finally it attempted to summarise some aspects of innovation and change within FSAF. Such qualitative gifts are still not widely known or appreciated. But they arguably bring hope to a troubled world unsure of its present and fearful of its likely future. Equipped with these tools and understandings practitioners are better equipped than ever to undertake tasks such:

- Redefining the field's earlier purposes.
- Producing well-grounded critiques of existing institutions and the dilemmas of raw economic and technical power.
- Offering a cultural diagnosis and renewed world story founded less on the ambiguous achievements of high-tech than on value and worldview shifts.
- The rise of coherent approaches to defining viable pathways forward.

What it cannot, and in this view, should not do in this historical moment is to imply that there are any generically alternative global macro-futures left to study and explore. Instead we are left with variations on common theme. One metaphor for this is that of a civilisational 'bottleneck'. As E.O. Wilson puts it:

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 (Wilson, 2002).

'Science, technology, foresight, moral courage' is a pretty good start. Our present default image of the global future is a consequence of long-term human, social and historical processes that we have only belatedly come to understand. Perhaps the most credible macro-alternatives remaining in the present global outlook are variations of a broad, unstable patchwork or mosaic future. For example:

- An upbeat version: huge problems, challenges, crises but humanity is learning to cope in a compromised world, its energy is devoted to survival, healing and recovery.
- A downbeat version: humanity fails to deal effectively with its conflicts and differences. Virtually all societies are well into their own versions of collapse. Who knows what will be left after the planet has finished adapting to the shocks and progress traps that accompanied humanity every step of the way?

Is this future dangerous? Certainly. Is it inevitably disastrous? That depends. The main suggestion put forward here is that what the futures field may have lost in naivety it has gained in interpretive power, visionary potential and practical utility. We now have vastly improved means to interrogate the most challenging future prospects that humanity has ever faced. Moreover, it is here in the vast array of strategies and responses to the declining global outlook that multiple alternatives can be conceived, negotiated and applied. Such an outlook can be powerfully motivating; an undeniable call to action across multiple cultures, fields and domains... After all, what is there to lose?

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¹⁶ Many basic social and economic functions have become dependent on high-tech coordination and control but no one knows how to secure these systems against malign uses and disruptions. The Internet of Things (IoT) is a case in point. The dominant narrative created by corporate entities insists that, along with many other high-tech devices that no one is asking for 'it is coming' anyway. Building such a system is one thing. But securing it another thing entirely. In fact, unless the character and operation of Internet-enabled transactions can be drastically modified and democratised, it may never be secured (Zuboff, 2019).

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