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The IT revolution part 4: Transcending the matrix \star

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Keywords: It revolution De-coding the matrix Surveillance capitalism Avoiding a technological dystopia Role of human and social interiors	This paper is the final in the IT Revolution series. It continues the analysis started in parts 1–3 and brings in new sources and information that have occurred since. In particular it draws on the substantive work of four articulate 'witnesses' to the most recent stages of this revolution: Namely Cook on the Psychology of Silicon Valley, Snowden on his dilemma on discovering that the government was spying on its own people, Zuboff on the structure and processes of 'surveillance capitalism' and Doctorow on internet strategy and opposition to the rise of monopoly capitalism. These and other sources contribute to an overall analysis and 'de-coding' of the real-world matrix that threatens to drive humanity into a technological dystopia that, if left unchecked, could cripple the lives and prospects of future generations. Such debased futures are, however, far from inevitable. Careful re-valuation of more positive values and more embracing worldviews can help humanity transcend the matrix (and associated technological metaphors) in pursuit of more humanly viable futures.

1. Introduction

This enquiry into the IT revolution began with a literature review and the identification of emerging issues and case studies. Two specific assumptions regarding technology were proposed. First, that the term should not be associated merely with material objects themselves but also refer to the social factors that produced them. Second that, while new technologies are inherently ambiguous, especially during the early stages, warnings and costs associated with them had been widely overlooked. A review of the Internet of Things (IoT) and the prospect of 'driverless cars', confirmed that the widespread and largely unreflected-upon adoption of Silicon Valley's high-tech offerings had had indeed emerged from surprisingly narrow and inherently problematic foundations. It is therefore unsurprising that a number of human and social concerns have emerged that cast doubt on the viability of this trajectory and outlook. Among them are:

- Questionable values (unbounded profit, growth of monopoly power, size and over-reach in multiple domains).
- The calculated use of strategies intended to conceal how high tech and the growth of corporate power compromise and degrade many aspects of public and private life.
- Inadequate conceptions of human identity and purpose that contradict standards of safety, respect and dignity as defined, for example, in the UN Declaration on Human rights.
- Equally thin and instrumental views of socially vital concepts such as 'friends', 'communication' and 'progress.'

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- One-dimensional views of high tech that bestow upon it an assumed and unquestioned ontological status that can neither be justified nor sustained.
- Failure to question self-serving practices that permit high-tech innovations to be released into social and economic contexts without due regard for unintended effects, drawbacks and long-term implications.
- How foresight and provident care have been overtaken by the naked power of speculative investments in ill-considered innovation, marketing and the resurgence of monopoly practices on a global scale (Author, 2018a).

Part three considered some features of 'compulsive innovation,' took a brief look at artificial intelligence (AI) and also drew attention to the apparently unstoppable rise of surveillance systems around the world. Its main emphasis, however, was to begin the task of 'framing solutions.' It was proposed that certain 'blind spots' that afflict Silicon Valley, its investors and supporters, could be reconceptualised as opportunities to reframe and re-direct the entire enterprise. A four-quadrant model from Integral enquiry refocused attention away from the over-hyped exterior aspects of IT systems to highlight dynamic but widely overlooked interior phenomena such as worldviews and values.

It may be helpful to reiterate here that a summary of the 'human and cultural-values-oriented stance' employed in this series was provided in the previous papers. For example, it was suggested, first, that the four quadrants of integral enquiry provide a beginning 'lens' to identify key features of human existence. Second, that levels of worldview complexity directly affect the capacity (or lack of) that individuals and organisations, for example, are able to bring to any occasion. Third, that a hierarchy of values is accessible in one or more specific lines of human development that, again, profoundly influence what can be known and enacted. Some implications of these variables were considered. Specifically, contrasts were drawn between outlooks 'typified by greed, selfishness, exploitation and ... disregard for real human and social needs' on the one hand and others characterised by 'generosity, care and respect, especially when coupled with sociocentric or world-centric outlooks.' It was suggested that such contrasts are magnified or enhanced when combined with critically significant shifts from conventional thinking (following rules in a taken-for-granted world) to a post-conventional stance (recognising that key aspects of social reality are constructed and therefore subject to negotiation and change). Some of these distinctions were further elaborated by reference to social perspectives and stages of moral development.¹ Habermas' insistence on the primacy of what he calls 'constitutive human interests' also served to anchor the discussion in these vital domains. The paper also reviewed a variety of strategies for better understanding and intervening in systems that undermine humanity's autonomy and well-being. They included:

- Transcending reductionism and re-purposing the Internet;
- Productive innovation; and,
- Humanising and democratising the IT revolution (Author, 2018b).

It is universally accepted, however, that the IT revolution is anything but static. It is therefore unsurprising that a multi-faceted 'pushback' against the continued expansion and power of the Internet oligarchs has continued to grow and develop.² This fourth and final paper draws on some of these newly emerging insights to extend the scope of the critique and provide further support for possible solutions. It begins with a view of the 'fractured present' and continues with four contrasting accounts by individuals who have, in quite specific ways, acted as 'witnesses' to this unprecedented upheaval. The paper also employs a metaphor from *The Matrix* film trilogy to consider how the real-world matrix of high-tech entities and systems can be better understood, or 'decoded.' Overall, it suggests that the clarity of insight now emerging from such sources is a necessary step toward resolving the dilemmas we collectively face. It provides us with grounds for hope, effective action and, perhaps, options that transcend technological metaphors. One thing is clear: the over-reach of high-tech innovation and thoughtless implementation has multiple costs and brings with it quite new dimensions of hazard and risk. In other words, this is a highly unstable system ripe for change. But what kind of change and whose interests will prevail?

2. The fractured present

Many features of human history are known to work against integration and the smooth functioning of society. They include poverty, revolution, war, disease, the exhaustion of physical resources and imagination (Tainter, 1988). During recent centuries, and especially since the Industrial Revolution, new forms of human organisation and technology progressively extended this list, giving rise to new versions of old problems as well as entirely new ones. During the early 21st Century, a particularly perverse combination of IT capability and capitalist values created powerful waves of change and dis-integration that now permeate our own fractured present. While it suited the institutional beneficiaries of the IT revolution (Silicon Valley behemoths, associated start-ups, investors, certain government agencies) to evoke the myth of progress and portray this 'revolution' as a broadly liberating force, that view has steadily lost credibility. What is often forgotten is that this particular series of events and dispossessions occurred within a very specific historical context sometimes known as the 'Neoliberal ascendancy' which unfortunately occurred at what now looks like precisely the wrong moment in history. As global dilemmas were becoming increasingly evident, the view that 'markets' should prevail over

¹ These references can be found in Part 2 Table 1 (Author 2018b); Also Part 6.2 and Conclusion and (Author, 2018c). An extensive set of introductions to, and readings on Integral Futures are available here: https://foresightinternational.com.au/introductions/.

² In an Atlantic essay during mid-2019, Madrigal outlines 15 entities that he refers to as 'an ecosystem of tech opponents. (Madrigal, 2019).

'governance' was used to repeatedly delay or disable many of the very adaptive responses upon which more far-sighted policies could have been based.³ But US governments in particular failed to fully comprehend or restrain the aggressive, monopolistic strategies that arose in their midst. Consequently, no-one in positions of power and authority succeeded in subjecting these developments to sufficiently thorough-going assessments, technological or otherwise.⁴

In retrospect it is remarkable how few people paused to consider what kind of future was being created in plain sight. Some may argue that this apparent blindness should be attributed to inherent human limitations, including plain, old fashioned naivety. Yet the fact remains that the self-serving propaganda of the Internet oligarchs intentionally obscured the growing costs of their activities behind a wall of marketing glitz, distraction and outright deception. The costs include undermining human agency, weakening democracy, destroying livelihoods, fracturing social systems and creating new sources of conflict and violence. The following vignettes evoke the 'lived quality' of situations replete with disturbing human consequences (Fazzini, 2019).

- A mother discovers that her 12-year-old son has become addicted to the hard porn he first encountered via friend's 'phone in a school playground.
- A student who'd sent intimate images of herself to her boyfriend finds herself being ogled and trolled months later by school acquaintances as well as strangers on the internet.
- New parents who'd installed a video monitor on their child's crib find out later that the feed was intercepted by thieves who used it to compromise their home network.
- A young man is hauled before a court for furiously striking his pregnant partner because she challenged his addiction to multiplayer on-line gaming.
- The owners of any organisation with an on-line presence can switch their computers on one morning only to find that they've become a victim of 'ransom ware' and have been 'locked out' of all their data. To have any chance of retrieving it they are required to pay a sum of money in Bitcoin to a remote and unknown entity. Help is available but there's no guarantee the data will ever be recovered.
- A mature affluent woman falls for a good-looking former soldier on the internet who has run into hard times. As their relationship develops, he asks for financial help. After several such transactions the victim discovers that she has been sending money to a 20-something scammer in Nigeria.
- The would-be purchasers of a new property discover that the deposit paid into their lawyers' authorised account was diverted elsewhere by scammers and could not be recovered. The bank denies all responsibility.⁵

These and countless similar examples have occurred, and are occurring, almost everywhere. Table 1 provides an indicative overview under three broad headings.⁶

These examples demonstrate just how profoundly the IT revolution - as implemented by Silicon Valley and its clients - has helped to fashion the dangerous and unstable world that we now inhabit. It is a world that blunders into new dilemmas even while failing to resolve those it already has. What many have overlooked, for example, is that simply to maintain what are now considered 'normal' operations, the high-tech world can no longer function without recourse to vast numbers of very complex devices operating silently in the background. The entire system is, in principle, vulnerable and needs to be constantly protected from entropic malfunction and deliberate on-line aggression (Galloway, 2020a, 2020b). Needless to say, assurances regarding these endless liabilities have never been fulfilled, nor it is unlikely that they ever will be (Gent, 2020).

To summarise, Western civilisation has embarked on a process of high-tech development with certain well-known benefits and other less well-known costs for which there are no easy or ready-made solutions. One way to think about this is to enquire if the IT revolution itself may constitute a new and dangerous progress trap.⁷ So instead of passively accepting these changes, it is imperative that they be subjected to sustained critical enquiry. Exactly how does this historical condition affect life, culture, tradition and meaning? How, under such circumstances, can solutions be crafted that hold out real hope of recovering the collective future? In order to de-code the matrix we first need to understand how it developed and why.

3. Understanding the matrix

3.1. Red pill, blue pill?

In the first *Matrix* movie the lead character, Neo, is offered a choice between red and blue pills (Warner Bros, 1999). One will wipe his memory and return him to the world of conventional surfaces with which he is familiar. The other will open his eyes so that he can not only see *The Matrix* for what it is but penetrate into, and perhaps even influence it. He opts for the latter and as the mundane world

³ For a succinct overview see Author (2020) section 3.1 Neoliberalism and the flight from reality.

⁴ Or if they did do so they were ridiculed or ignored.

⁵ See Brignall (2019) for further details. These incidents and countless others like them are regularly reported in mainstream media. See Fazzini's *Continent of Lies* (2019) for a broader review.

⁶ It is noted, however, that most have implications and impacts across more than one category.

⁷ For a description of progress traps through history see Lewis & Maslin (2018) Chapter 10: How we became a force of nature. Also Author (2020) section 4.2 Progress traps and the modern world.

Table 1

Human, Social and Geopolitical Costs of the IT Revolution.

Human costs:

- The loss of privacy on a vast scale.
- · Loss of control over private data and the uses to which it is put.
- · A steady decline in respect and tolerance for 'others' and other ways of being.
- A growing tendency to stereotype, blame, exploit and attack from a distance.
- Misuse of passwords to threaten, steal and control.; the rise of identity theft.
- The rise of hacking, phishing, cyber-bullying and scams of every possible kind.
- The rise of on-line predatory behaviour, including the sexual abuse of children.
- Diminution of the right to be free of such abuse, and of the right to sanctuary.
- Evisceration of the inner lives of countless individuals, especially in developing nations.
- Propagation of false solutions and solutions to problems that do not exist (solutionism).
- Propagation of vacuous 'entertainment' that degrades human life and experience.
- The rise of equally vacuous 'influencers' who are richly rewarded for showcasing trash.
- The active promotion of outrage as a means of creating 'user engagement.'
- Careless and repeated abrogation of the 1946 UN Declaration of Human Rights.
- Denial of the right to an open and 'surveillance free' life now and in the future.
- Social costs:
- Repeated assaults on the value of truth and the integrity of scientific knowledge.
- The consequent weakening of social integration and clear-sighted decision making.
- Radical questioning / undermining of precedence and authority in almost every domain.
- The compromising of core human institutions such as: government, health and education.
- The decay of social capital, traditions and ways of life built up over generations.
- The deliberate or careless resourcing of 'bad actors' at every level and in every country.
- The broadcasting of demeaning ideas, memes, narratives and images of every kind.
- The curation, replication and use of anti-social 'performances' (including sexual assault and mass killings) that in turn promote further violence and destructive responses.
- The deliberate use of dopamine reward responses to create and sustain addiction for commercial gain.
- The deliberate and systematic appropriate of creative work including that of artists, writers, musicians and journalists without any or adequate payment.
- The associated 'starvation' of traditional news through direct theft of material and loss of funding through declining advertising income.
- The attempt to replace government services funded by formal taxation with commercial for-profit costs levied by private companies in their own interests (for example, age care, health care, education and related social services).
- The re-orientation of intra-nation security services from protection of native populations to the wholesale invasion of their privacy and autonomy.

• The corresponding inability of governments to protect themselves or their citizens from random external cyberattacks.

- Geopolitical costs:
- A continuing shift from the Internet as positive enabler of legitimate civil functions to a multi-dimensional liability, i.e. an expanding series of hard-to-fix vulnerabilities.
- The willingness of nation states to develop increasingly powerful surveillance capabilities and high-risk interventions in the IT systems of other countries for purposes of intimidation and control.
- The resulting 'dismal dialectic' by which competing nation states seek temporary advantage over others by pursuing ever more dangerous and threatening internet- and satellite-enabled offensive capabilities.
- The growing likelihood of autonomous 'soldiers,' 'smart' drones and the like, bringing the prospect of cyber warfare ever closer.
- The asymmetric benefits that accrue to 'bad actors' at every level. For example, Internet-enabled crime such as money laundering, financial scams, illegal transfers to and from rogue administrations. As compared with the very high costs of pursuing any kind of wrong-doing or criminal activities via Internet means. The costs of the latter tend to be very low, while the costs of pursuing it in terms of time, money and expertise are prohibitively high.
- Multiple vulnerabilities arising from the lack of coordination and cooperation in the digital arena between the three largest centres of power and control: China, Russia and the USA.
- The global emergency, however, recognises no political boundaries whatsoever. Although IT systems have achieved global reach few or no effective human / political organisations have emerged that are capable of providing integration and coordination on a similar scale.
- Effective global governance appears to be a remote possibility at present.

slumbers begins his 'deep dive' into reality. The trilogy narrative may not be entirely coherent, but it certainly tapped some deep and perhaps obscured aspects of human psychology. In so doing it arguably triggered half-conscious questions or fears about 'what is really going on' confronted as we are with succeeding waves of technology over which we appear to have little or no control. The key word here is 'appear' since what is at stake are not immutable, natural forces or God-like injunctions handed down from above. The high-tech world has been created by individuals making critical decisions at actual times, in real places and according to quite specific values and imperatives. To imagine that our current 'digital reality' is an inevitable consequence of the technology itself is a distraction that bears a striking resemblance to the 'red pill' of technological determinism.

In that version of 'the real' the world-spanning monopoly platforms created by Google, Facebook and others are thought to exist to help us access information, explore human knowledge and connect with others around the world. We are led to believe that the power

of modern technology is at everyone's fingertips to do with as they will. In exchange for what are described as 'free' services, data from everyday lives and activities is scanned, recorded, used and sold. This material, the story goes, helps ever-attentive suppliers to better know and anticipate human needs. By drawing on as much information as possible dedicated Google users are, it is said, enabled to more efficiently navigate their way through an ever more complex world. For reasons best known to themselves some appear happy to install various 'digital assistants' that record their daily conversations. Some choose to unburden themselves of familiar low-grade tasks such as remembering train times, navigating a city or knowing what groceries to buy when. Which encourages them to use these services in real time. Dedicated 'always-on' monitoring devices that connect the young to their parents and friends and the elderly to medical support seem to have wide appeal. Looking in upon everyone, even in their most private moments, are hidden armies of 'data aggregators' that sift and sort and organise the flood of information about what people do, where, how and even why they do it. It can be claimed that such technologies protect individuals from external harm and perhaps protect society from certain kinds of criminal activity. All-up, it can be argued that the 'red pill' provides a pretty fair bargain.

Such passive and generalised assumptions that the technology and the systems they are embedded in are benign and useful have been widely accepted. We know this because the monopoly platforms (and their investors) have grown so immensely rich and powerful on the proceeds.⁸ A 'business-as-usual' view simply assumes that these arrangements are broadly acceptable - albeit requiring routine upgrades and related changes from time to time (improved 'personalisation', longer battery life, sleeker handsets etc). In the absence of countervailing perspectives and clear evidence, alternative views of high-tech modernity can be difficult or impossible to articulate. This is especially the case in less affluent nations where Facebook, for example, and its subsidiary 'WhatsApp,' are used by large numbers of people who confuse these invasive or innocent-looking apps with the Internet *per se* (Frenkel & Kang, 2021). Given the ability of social media to exacerbate dissent, extremism and even direct violence the consequences can be tragic.⁹ So much so, in fact, that in late 2021 Facebook was placed under added scrutiny about its role in fuelling violence and instability in Myanmar and Ethiopia (Akinwotu, 2021).

Clearly a 'blue pill' account requires real effort over time and a certain tolerance for discomfort and uncertainty. It raises disturbing questions that not everyone may be ready or able to pursue. It acknowledges the reality of what some regard as a true existential crisis with 'forks in the road' and pathways to radically different future outcomes. This view also suggests that the continuation and further development of surveillance capitalism leads directly to the kind of over-determined Dystopian oppression already emerging in China.¹⁰ It therefore seeks to clarify just how the juggernaut works, to identify and name hidden factors, to expose the intangible forces that are working behind the scenes to shape our reality, and ourselves, in a variety of perverse ways. Yet before it can be tamed or directed toward different ends society needs to understand in some depth how we arrived at the point where societies are confronted by deformed versions of high tech and a fundamentally compromised Internet. As Lewis Mumford understood five decades ago (Mumford, 1971) accounts of this kind clearly go beyond the critique of technical arrangements to questions of purpose, history and context.

3.2. Misconceptions, merchandising and addiction

The view explored here is that the IT revolution owes at least as much to human and cultural factors as it does to purely technical ones. For example, the barely qualified optimism with which it has been associated arguably owes more to marketing and merchandising – America's great unsought 'gifts' to the world – than it does to the services and distractions of any device whatsoever. The close association that's claimed to exist between technical innovation on the one hand and human progress on the other tells only part of the story and therefore remains problematic. Such generic 'optimism' is, perhaps, little more than a handy distraction used to conceal the predations of corporate power in this singularly heartless industry. As digital devices continue to penetrate nearly every aspect of human life, the forces driving them need close attention. They are shaped and enabled every bit as much by unconscious presuppositions and cultural myths as they are by computer chips, hard drives and servers (Lewis & Maslin (2018). Such underlying intangibles - values, cultures and worldviews - powerfully determine what forms technologies take and the uses to which they are put.¹¹

John Naughton, a seasoned observer of the shifting IT landscape, identified what he refers to as 'two fundamental misconceptions.' The first is 'implicit determinism' which he describes as:

⁸ In early 2019 several nations were preparing to impose more realistic levels of taxation on the largest companies as this extract shows: "The tax will only affect companies with an estimated \$1 billion in annual global turnover such as Facebook, Uber, Airbnb, Twitter and Google. By 2020, they are expected to be hit with a tax bill worth up to \$2.5 billion worldwide, a figure that is expected to grow as more countries prepare for OECD-wide measures. Google Australia reported a revenue of \$1 billion in 2017, including \$604 million from advertising. It paid \$37 million in tax on a total profit of \$125 million." (Bagshaw, 2019).

⁹ This has been seen in many mass shootings, some of which have been streamed in real time. But a similar dynamic has occurred in other situations where social dissent has risen to such extremes that community violence and 'ethnic cleansing' have resulted. Two examples are the descent of the 'Arab Spring' into chaos and the expulsion of the Rohingya from their homes and villages in Myanmar to a precarious existence in nearby Bangladesh. Nor, given recent events, is the US immune from such consequences...

¹⁰ Needham, 2019, outlines some key features of China's oppressive 'Social credit system.'

¹¹ This is beautifully explored in many of Ursula Le Guin's novels and, in particular, her novel *Always Coming Home* (Gollancz, 1986). Here the values, worldview and culture of the Kesh are shown to powerfully affect how technology is created, framed and used.

the doctrine that technology drives history and society's role is to adapt to it as best it can. It's a narrative suffused with Joseph Schumpeter's idea that capitalism progresses by "creative destruction" – a "process of industrial mutation that continuously revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one"... And implicit in it was the assumption that society's only role on this voyage to tech nirvana is to pick up the pieces on the way (Naughton, 2020).

In this view the second critical flaw in the worldview of Silicon Valley is 'its indifference to the requirements of democracy.'

One of the lessons we have learned over a couple of centuries is that functioning societies need free media... It's unquestionable that the survival of liberal democracy requires a functioning public sphere in which information circulates freely and in which wrongdoing, corruption, incompetence and injustices can be investigated and brought to public attention. And one of the consequences of the rise of social media is that whatever public sphere we once had is now distorted and polluted by being forced through four narrow apertures called Google, YouTube, Facebook and Twitter, services in which almost everything that people see, read or hear is curated by algorithms designed solely to increase the profitability of their owners (Ibid).

The' determinism' and 'indifference' that Naughton refers to are two of many unacknowledged features that characterise this particular high-tech culture and degrade so many of its offerings. Another is the promotion of addiction to digital devices and the services they provide. Their appeal was 'designed in' with enormous care and strenuously promoted using every available marketing tool and technique. The language of advertising is, quite obviously, a projection of corporate interests and, as such, has no place for what might be called 'autonomous needs.' Its intrinsic conceptions of human beings, human life, are irredeemably reductive. The fact that advertising became the central pillar of the Internet is therefore not something to be passively accepted. It requires an explanation.

During the post-war years, routine sales were regarded as too slow and uncertain, meaning that profits were always going suffer. The advertising industry was a response to this highly 'unsatisfactory' situation. The whole point was to boost 'demand.' The strategy was so successful that that over subsequent years 'consumer demand' itself became a 'meta-product' of this particular worldview (growthism) that expressed specific values (materialism, envy, consumerism etc). Buying and selling in this high-pressure mode made a kind of sense in the heady years of post-war America. The big mistake, if that is the right term, was to allow it to become so embedded, so much part of the 'American way of life' that it became normalised thereafter (Packard, 1962). Clearly times have changed, and those early imperatives make less sense than ever. Yet the present wave of IT-related selling continues to draw heavily on the very same manipulative tradition. One clear difference, however, with this new flood of products and services, is that entirely novel features appeared that seemed to by-pass rational thought and ethical evaluation. Compelling new devices and the apparently 'free' services that they enabled seemed to meet peoples' authentic needs for organisation, communication, agency and so on. At the time they were mistaken for gifts. More recently, however, the nature, extent and costs of addiction to digital devices, especially for children and young people, have become impossible to ignore (Krein, 2020). Yet even now responses to such concerns remain slow, uncertain and largely cosmetic (Exposure Labs, 2020).

Heavily curated projections of IT as a neutral or positive enabler have clearly succeeded up to a point. But as more people experience the social, cultural and economic ramifications the legitimacy of digital manipulation will likely attract ever greater scrutiny. Societies permeated by powerfully networked digital devices not only don't operate along traditional lines, they also overturn earlier ways of life (Klein, 2020). The era of large-scale, targeted and pervasive merchandising may not be over, but it does face new challenges that emerge from lived experience and the deep, irrepressible need for human autonomy. As people seek to understand their reality, their world, in greater depth they will perhaps be more willing to look beyond the photo app, the chat group and those innocent-looking Facebook pages where powerful AIs stare coldly back right into their soul. They will want to know why this happened and how it can be prevented from happening again. They will need a clearer understanding of the innovation context and demand more honest explanations from those who shaped this revolution without regard for the consequences.

3.3. Monetising data, inventing 'behavioural surplus'

Google was incorporated in the USA in 1998 soon after the Mosaic web browser that opened up the Internet to the public became widely available. Data collected at that early stage was seen merely as raw research material for which authorisation was neither sought nor granted. Indexing the World Wide Web (WWW) provided reams of data which was analysed and fed back into the system for users' own benefit. It allowed them, for example, to fine tune their own searches. This arrangement recognised what had long been a standard feature of commercial practice - the *inherent reciprocity* between a company and its customers. But since Google did not have a distinctive product of its own the company was considered insufficiently profitable (itself a social judgement based on particular values and priorities). Subsequent discoveries, however, in what was then known as 'data mining' constituted a 'tipping point' that changed everything. Rich patterns of human behavior were progressively revealed but the research interest no longer applied; it had been overtaken by commercial imperatives. Hence these operations were regarded as highly secret and shielded from public view. A further critical shift occurred when it was realised that the avalanche of new data could be manipulated and monetised. The vast potential was eagerly welcomed by Google's equity investors who, as Google announced at a 1999 press conference, had contributed some US\$25 million to the company. These investors, with their value focus on money, expansion and profit, brought strong pressures to bear with the sole aim of boosting the company's financial returns in which they now held a powerful interest. None of these activities appears to have broken any laws or regulations as they existed at the time, so it cannot be argued that they were illegal. The best that can be said is that they were, perhaps, 'non-legal' in that they took place in secret and within a regulatory vacuum.

Although few understood it at the time this constituted a critical point of transition from one form of commercial activity to another. But it was consistent with Google's priorities which had never been on improving peoples' lives or contributing to society in

any meaningful way. A couple of years later one of Google's founders, Larry Page, spoke about further options that lay beyond mere searching operations. This was made explicit when he declared that 'People will generate huge amounts of data... Everything you've heard or seen or experienced will become searchable... Your whole life will be searchable' (Zuboff, 2019, 98). As Zuboff notes 'Google's users were not customers – there is no economic exchange, no price and no profit. Users are not products but sources of raw-material supply (Ibid, 68–9).' She adds that:

Google turned its growing cache of behavioural data, computer power and expertise to the single task of matching ads with queries... It would cross into virgin territory. Search results were...put to use in service of targeting ads to individual users... Some data would continue to be applied to service improvement, but growing stores of collateral signals would be repurposed to improve profitability both for Google and its advertisers. These behavioural data available for use *beyond* service improvement constituted a surplus, and it was on the strength of this *behavioural surplus* that the young company would find its way to the "sustained and exponential profits" that would be necessary for survival (Ibid 74–5).

To achieve this the company simply ignored social, moral and legal issues in favour of technological opportunism and unilateral power. It's helpful to remember, yet again, that these were and are all *human* decisions, human inventions, not inherent features of digital technology or information capitalism. This was 'intentionally constructed at a moment in history (and represented) *a sweeping new logic that enshrined surveillance and the unilateral expropriation of* behavior *as the basis for a new market form*. (It) resulted in a huge increase in profits on less than four years' (Ibid, 85–7; emphasis added).

Greed and opportunism were, however, not the only factors involved. The dominant Neoliberalist ideology succeeded in reducing the scope and power of government regulation and promoting a structural shift toward market-led practices. Anti-trust strategies that had previously been used to constrain monopolies were also set aside leaving companies to expand seemingly without limit. As mentioned below, Zuboff and Snowden both refer to the aftermath of the 9/11 disaster when the CIA and other government agencies formed a powerful but hidden alliance with Google. The former made a fatal choice to draw as fully and deeply as possible on the very surveillance techniques pioneered commercially by Google. These two highly secretive entities then found ways to conceal their surveillance operations not merely from the public but also from Congress. The immediate result was a decisive shift away from 'privacy' toward a new and dangerous type of 'security.'¹² Earlier aspirations for an 'open Internet,' and the long-standing value assumption that human rights were paramount, were abandoned. The scope of these changes was admitted in 2013 by former CIA Director Michael Haydon when he acknowledged that 'the CIA could be fairly charged with militarising the world wide web' (Ibid, 114). These developments arguably set the stage for the present dangerous and unstable geopolitical situation we now face in which contending nation states and power blocs armed with the most powerful weapons systems ever devised confront each other with suspicion and unease.

Google went from strength to strength. Its targeted advertising methodology was patented in 2003 and the company went public in 2004. Profits rose precipitously and it soon became one of the world's richest companies. In its rush for dominance and profit it pursued a series of unsanctioned, non-legal projects such as Google Earth (2001), an eventually unsuccessful attempt to 'digitise the world's books' (2004); (Guion, 2012) and Street View (2007). While all have their uses, the company's supreme over-confidence and ignorance of common values repeatedly demonstrated its complete lack of interest in seeking or gaining legitimate approval. What it did obtain within in the US was 'regulatory capture' of government policy. *The question that will not go away, however, is whether any private company should be allowed to have this power and whether that power is better invested in public utilities charged with pursuing social well-being rather than private profit.* Such distinctions matter a great deal and have implications beyond IT. In 2012, for example, Google paid its dues to its ideological allies by bestowing generous grants upon conservative anti-government groups that opposed regulation and taxes and actively supported climate change denial (Zuboff, 2019, 126). Hence the regressive aspects of Google's business model and sense of entitlement clearly extend far beyond the surveillance economy *per se*.

Having opened out vast new and undefended territories of 'behavioural surplus,' Google's model was emulated by many others, beginning with Facebook (Taplin, 2017). Today Google's penetration into nearly every aspect of social and economic life is more extensive, more powerful than that of any nation state. Yet the legitimacy of these operations remains as problematic as ever. In order to understand and confront the Matrix cultural factors, powerful individuals and obscure decisions all need to be taken into account.

4. Witnesses to the revolution

The steady emergence of publications and new sources of insight into the substantive character of the IT revolution arguably constitutes a counter trend in its own right since understanding precedes action. Although it is beyond the scope of any single paper to survey these in detail, four sources qualify for particular attention. They are *Permanent Record* (Snowdon, 2019), *The Psychology of Silicon Valley* (Cook, 2020), *The Age of Surveillance Capitalism* (Zuboff, 2019) and *How to Destroy Surveillance Capitalism* (Doctorow, 2020).¹³ Snowden's focus is primarily on his experience as a trusted member of the US security apparatus. He explains how, in the normal course of his work, he was confronted by critical changes in the way his government reacted to geopolitical shifts and events. He was shocked to discover how new the surveillance options enabled by newly emerging technologies were turned upon the American people. Cook's career began as co-founder of a non-profit organisation focusing on the effects of technology. This, in turn, led her to

¹² This shift, and its wider implications are described in detail in Snowdon (2019) and Greenwald (2015).

¹³ While Zuboff was indeed referenced in the third paper, such mentions were derived from short items published before her 2019 master work appeared. The latter took our understanding of the issues at hand into entirely new territory and it is this later material that is most useful here.

consider how high tech affects society more generally. From here it was a short step to exploring the psychological dimensions of Silicon Valley, the single most influential incubator of these changes. Her conclusions add compelling detail to the overall picture.

Zuboff's background was that of university business professor with long-standing interests in how new technology affects workers and organisations. This earlier focus provided a sound basis for her detailed investigation into how the Oligarchs were created. Of greatest significance, perhaps, was her in-depth exposure of the stealth methods embedded in their business models that allowed them to successfully avoid detection and regulation for so long. From here she provided a rich account about how they undermined democracy and social norms in the pursuit of ever larger profits. Doctorow, on the other hand, is a radical thinker with strong and wellestablished links within the IT subculture. His work embraces fictional and non-fictional approaches to IT-related issues. Thus, he has a distinctive 'insiders' view both of the tech itself and the critiques advanced against it. As such he provides his own critique of Zuboff's contention that the main culprit here is 'rogue capitalism.' For Doctorow the main issues concern the resurgence of monopolies and the need for far more comprehensive digital rights.

Taken together the authors of these works qualify as 'witnesses to the revolution.' As such, they serve as a further corrective to the prevailing view that this revolution is primarily about technology per se and the growing array of high-tech digital devices. Readers of earlier works will also be aware that Integral approaches distinguish between inner and outer realities as well as individual and collective ones. Hence much of our interest here is how this revolution has affected, and is continuing to affect, the inner lives of people, organisations and cultures. As Zuboff observed 'technology is not an autonomous process... It originates in the social, and it is here that we must find it and know it' (Zuboff, 2015, 75).

4.1. Snowdon's dilemma

In contrast to other, more in-depth treatments, Snowden's account is straightforward, almost banal. After being injured during army training his proficiency in IT enabled him to begin working in the security sector. He worked his way up through various government agencies and eventually earned the envied 'most trusted' status. With an unquestioned belief in the goals and purposes of this work he became adept at handling highly classified material. Until 9/11; after which everything changed. He discovered incontrovertible evidence that, contrary to accepted practice and in direct contravention of the US constitution, the US government had started spying on its own people. Back in 2004/5 he'd been aware of an unclassified report that outlined some superficial details of the President's Surveillance Program (PSP). This allowed for 'warrantless wiretapping' of citizens' communications and was supposed to wind down within a couple of years. Several years later, however, the classified version intended only for a very highly restricted group turned up on his desk. It described a secret program known as STELLARWIND which described how 'the agency's mission had been transformed from using technology to defend the country to using it to controlling it.' This had been achieved by 'redefining citizens' private Internet communications as potential signals intelligence.' He realised that 'the activities it outlined were so deeply criminal that no government would ever allow it to be released unredacted.' The National Security Agency (NSA) had argued that 'the speed and volume of contemporary communication had outpaced, and outgrown, American law ... and that a truly global world required a truly global intelligence agency.' This, in turn, and according to 'NSA logic,' led to 'the necessity of the bulk collection of internet communications' (Snowdon, 2019, 177). In summary, STELLARWIND was:

The classified report's deepest secret ... and the one that the report's sensitive status had been designed to protect. The program's very essence was an indication that the agency's mission has been transformed, from using technology to defend America to using technology to control it by redefining citizens' private Internet communications as potential signals intelligence (Ibid, 177).

What Snowden had unwittingly discovered was what he called a 'culture of impunity' that had somehow circumvented the Legislative Board, the Judiciary, Civil Society representatives and even the US Executive Branch. Notions of 'privacy' that had supposedly been enshrined in the post-war UN Declaration of Human Rights had been trashed without any real public justification, debate or explanation. These were political decisions taken under the protective cover of 'security' - but that was not all. There was something about the technology itself that lent itself to such egregious misuse. He realised, for example, that:

The law is country specific, whereas technology is not. Every nation has its own legal code but the same computer code. Technology crosses borders and carries almost every passport. ... (Likewise) ... our data wanders far and wide. Our data wanders endlessly. We start generating this data when we are born, when technologies detect us in utero, and our data will continue to proliferate even after we die. ... Our consciously created memories ... comprise just a sliver of the information that has been wrung out of our lives – most of it unconsciously, or without consent – by business and government surveillance. (Moreover) we are the first people in the history of this planet for whom this is true (Snowdon, 2019, 329–31).

Such conclusions are decidedly 'non-trivial.' They indicate global changes of state that cannot but affect humanity in powerful but little-understood ways. Among these are that the overreach of high tech and unconstrained power appear to lead, in Snowden's words, to 'a vision of an appalling future.' He is therefore justified in asking: is this indeed what we are willing to impose on present and future generations? In this view humanity appears to have reached what might be called 'a historical pivot' of unknown dimensions. Thus, while Snowden has been portrayed as a 'whistle blower' or even 'traitor' it's clear that he is neither speaking for himself, nor pursuing merely personal interests. He seeks to act on behalf of humanity and, indeed, of future generations. From an integral perspective the values expressed here are clearly world-centric in scope and the worldview post-conventional. His concern is not merely for himself nor even his country but humanity. He clearly recognises the limitations of accepted conventional views in favour of wider, more productive, alternatives. His decision to leave the US for what could well have been a lonely and isolated life in exile can therefore be seen not only an escape route but also a moral imperative.

Two related points stand out here. First, his view from the inner recesses of the US security apparatus raises deeply concerning questions about just what values are operating there. Second, if those values and their associated motivations serve to undermine, rather than protect civilised life, the capacity of US governance to deal firmly and decisively with the many dilemmas raised by its own agents of high-tech innovation cannot but also be compromised. It follows that the identity, values and culture of Silicon Valley (SV) itself are central and need to be taken fully into account. The myths and stories it tells itself, the narratives it projects upon the wider world have real consequences, some of them contradictory and severe. A psychological profile of the Valley can help to provide a more nuanced understanding of how we arrived at this particular point in history. Equally, such a profile, if credible, might well provide useful insights into just what changes in its culture and worldview may be required.

4.2. Psychology of Silicon Valley

Katy Cook's decision to explore of the psychology of SV began with the same questions that have occurred to many others. How, for example, was it that so many people were becoming addicted to successive waves of high-tech devices? What might be the cumulative effects on health, wellbeing and relationships? Where is all this unregulated innovation taking us? Her initial involvement was with a non-profit organisation that considered the effects of technology and ran awareness campaigns on possible responses. The perspective she later developed is useful here because, in contrast to more conventional views of the IT revolution, she focuses on interior aspects that often remain implicit, out of sight, and are thus seldom considered. Viewed from a psychological perspective, however, the Valley and all it represents, looks decidedly darker and more problematic than the upbeat public persona it presents to the world. It highlights, for example, the fact that there are major differences between what this world-shaping entity would like others to believe and what is actually there. Cook's view is essentially that SV has been 'corrupted' because it prioritises the wrong (i.e. socially damaging) things. These include making profit and growth the ultimate values, owners and shareholders the ultimate beneficiaries and the use of outright lies and manipulative evasions as core strategies. At heart, she believes, the Valley fails to understand itself. This may seem an obvious point, but it has real implications. It means, for example, that in spite of its wealth and power (or perhaps because of them) it lacks the qualities that psychologists have long associated with 'emotional intelligence.' These are serious charges so it's worth summarising the evidence.

Under 'identity' she notes that the Valley sees itself as a 'ideas culture.' Whereas in earlier times this was linked with countercultural aspirations for a more open and democratic future, established businesses and their investors remained doggedly focused on the same old 'extractive' culture. Big ideas are said to thrive in SV but they are narrowly applied in the search for technical solutions. This makes greater sense when key traits of programmers and computer specialists are revealed. A considerable body of evidence shows that they are skilled at puzzle solving but they neither like, nor are much interested in, people. Moreover, the industry actively selects for 'anti-social, mathematically inclined males' (Cook, 2020, 24). The author is not alone in suggesting that the 'high-fliers' of SV should be considered, in some crucial respects, as 'under-educated.' This initially startling conclusion is supported by evidence that their educational backgrounds are strongly associated with science, maths and engineering but lacking when it comes to the human sciences. John Naughton, came to exactly that conclusion back in 2017. In seeking to account for what looks like an ingrained structural bias he suggested two possible explanations. One was simply that they'd been so successful they simply didn't care. More credibly he also suggested that the collective bias might better be explained by the limited scope of their major disciplines. He wrote that:

Now mathematics, engineering and computer science are wonderful disciplines – intellectually demanding and fulfilling. And they are economically vital for any advanced society. But mastering them teaches students very little about society or history – or indeed about human nature. As a consequence, the new masters of our universe are people who are essentially only half-educated. They have had no exposure to the humanities or the social sciences, the academic disciplines that aim to provide some understanding of how society works, of history and of the roles that beliefs, philosophies, laws, norms, religion and customs play in the evolution of human culture. We are now beginning to see the consequences of the dominance of this half-educated elite (Naughton, 2017).

With this in mind we need look no further to explain what Cook regards as 'a staggering amount of unconscious bias.' In summary, she identifies three key issues:

- Tech tends to be an uncommonly homogenous culture, marked by a lack of diversity and an unwillingness to embrace pluralism.
- It is rife with discrimination, including sexism, ageism, and racism, as well as harassment.
- There is a disturbing level of immaturity that permeates many corporations, often emanating from the highest levels (Cook, 2020, 39).

For these and related reasons the author concludes that industry-wide there's evidence of a 'working environment that is fundamentally broken and unhealthy.' It's entirely consistent with this view that the myths and stories promulgated by SV have been carefully curated, and at huge expense, by marketing experts with the sole purpose of exerting desired effects on what, in this context, appear to be distinctly naïve populations. A litany of manufactured 'sound bites' familiar to many, are given that reveal many attempts to portray SV's major companies in a more positive light.¹⁴ Thus, while they may claim to reflect 'lofty aspirations' and 'benevolent ideals' they are just as likely to be 'false and toxic aphorisms designed to mask the true intentions of the companies who craft them.' Such slogans are intended to distract attention from the underlying aims of the industry which are to 'bring in the largest amount (SIC) of users, for the longest period possible, at the most frequent rate.' Hence, overall CV 'has managed to paint a self-serving picture of itself that fails to reflect the reality of its priorities and intentions' (Ibid 70). The key point to note is the divergence between what SV says and what it actually does. 'Capital' she notes, 'doesn't want to change the world. (It just) wants to make more capital.' And this really is the heart of the issue. Many of the claims that emerge from SV seek to promote 'desirables' such as engagement, connection, friendship and the like. But behind such pronouncements there is a barely concealed moral vacuum. There is no reality at all in shared 'background myths' such as 'tech knows best' or that these companies can in any way be considered 'trustworthy custodians.' The motivations and values underlying what they actually do clearly point in a quite different direction.¹⁵

Cook points to the tension between 'socially liberal values and techno-capitalist incentives' noting that the latter remain focused on the kinds of limited short-term profit-oriented values mentioned above. But what she calls the 'transgression' of SV 'is not so much a result of 'for-profit' and 'corporate priorities' so much as a 'gross misrepresentation of its motives.' Sufficient time has now passed for some of the consequences to become clear. She adds:

SV has spent years and billions of dollars persuading the public to worship an industry that claims to have its best interests at heart. (However) the tech industry is driven by the same market forces as any other market-driven industry ... Placing greater importance on making money than on taking care of people's needs results in a society with deeply unhealthy values, in which people come second to financial objectives. *A society built on such values loses a great deal of its capacity for humanity*. We have allowed the tech industry, through a lack of regulation and the proliferation of unhealthy behavioural norms, to become the bastion of an economic order that has abandoned morality in favour of dividends for an elite few. (Furthermore) research has found evidence of an inverse relationship between elevated social power and the capacity for empathy and compassion (Ibid. 105. Emphasis added).

The divergence between what SV claims to have delivered and what it has actually achieved is undoubtedly one of the chief underlying causes of the deep social divisions, disunity and perpetual conflict that have sadly become among the distinguishing features of American society. Having failed to rein in the Oligarchs and related financial and corporate interests the US appears to have suffered a 'collective breakdown of order, truth, and the psychological orientation they provide.' The profit and ad-driven business model that SV adopted thrived on the back of social trends that have progressively undermined the coherence and status of truth, respect and fact-based debate. Those trends include radical individualism, market fundamentalism, polarisation, volatile dissent and a callous indifference to the well-being of others. Hence, 'digital disinformation' now constitute a serious global risk for US society.

Clearly, the spread of such disruptions and distortions across entire populations does not end at the level of damaged individual lives. The deliberate and forceful ramping up of 'engagement' by any means deemed necessary ensured that the overall costs continued to mount such that a full accounting is unlikely to ever be rendered. While the potential for good certainly existed at the outset, the combination of naivety, greed and lack of oversight / regulation allowed a toxic ecology of dangerous technology-enabled innovations not merely to emerge but also be normalised. Collectively these drove the overall costs of the IT revolution into quite new territory. It was no longer simply a medium for individuals and powerful groups. It swelled with 'bad actors' of every kind, from petty criminals to nation states. What has since emerged even exceeds what the 'dark market' could achieve (Glenny, 2011). Both the disastrous 2016 US election and Brexit demonstrated that entire societies are no longer protected from digital manipulation. Which helps to explain why during 2019–2020 the world found itself backing uncertainly into a state of geopolitical instability and the ever-growing threat of global cyber war (Zappone, 2020).

4.3. Finding our bearings, challenging legitimacy

At close to 700 pages *The Age of Surveillance Capitalism* is not, by any means, a 'quick read.' The language makes few concessions and the barely concealed passion behind some sections are perhaps not entirely consistent with standard academic conventions. Yet the effort to come to grips with this revelatory and courageous work could hardly be more worthwhile. In effect the author re-frames key aspects of the last few decades, the very time when IT took on new forms and, as outlined here, literally invaded human awareness, ways of life, before anyone grasped the significance of what was happening. Now, however, that the details of that invasion have been documented in compelling detail, *a fundamental reorientation* (both to the high-tech systems themselves and, more importantly, to those in whose interests the present deceptions are maintained) can be envisaged. Which is no small achievement. At the macro level revised understandings of the recent past allow for a re-consideration of the present from which may emerge distinctively different futures than earlier, more anodyne, default views had perhaps allowed.¹⁶

One question answered early on is: who was responsible for this invasion? There's a distinct cast of characters, prominent among which are the owners and investors of Google, Facebook and similar companies. Behind these organisations, however, are many others

¹⁴ 'Bring the world closer together'; 'Give everyone a voice' (Facebook); 'Organise the world's information' (Google); 'Broadcast yourself' (You-Tube); 'Make tools that advance humankind' (Apple); 'Work hard. Have fun. Make History' (Amazon) etc. (Cook, 2020)

¹⁵ This view is reinforced by profiles of leading SV figures such as Mark Zuckerberg and Ray Kurzweil. See Author, 2015, for further details.

¹⁶ For example, Peter Schwartz' over-optimistic vision in *The Long Boom* (2000) is one of many that saw the coming IT revolution in highly positive terms.

including neo-liberal ideologists, venture capitalists, several US presidents and powerful agencies closely associated with the US government. Yet even that's too simple. As is clear from Snowden's account, Bin Laden, the prime mover of the 9/11 attack, also had an influence since it was this event that led US security agencies to pivot away from earlier concerns about 'privacy' in favour of a particularly invasive form of 'security'. It's a bit like the 'rabbit hole' featured in the Matrix film trilogy: the further down you go, the more you find. Zuboff, however, is far from getting lost. She locates dates, events, players and consequences in a highly disciplined and comprehensible way. Her almost forensic methods open up the possibility of knowing what has happened, understand it and gain clarity about what responses may be needed.¹⁷

Part of Zuboff's contribution is terminology. She provides a language and a framework that serves to reveal much of what's been hidden and to resource the kind of projects and actions that are clearly needed. It's necessary to note, however, that no language is objective and early attempts to create one based on quite new phenomena are bound to require critique and modification over time. Language is, of course, anything but static. A couple of examples will suffice to demonstrate the relevance of these interventions. One is a notion of the 'two texts;' while a second is about learning to distinguish between 'the puppet' and 'the puppet master.' In the former case she makes a strong distinction between what she calls the 'forward text' and the 'shadow text.' The forward text refers to that part of the on-line world that users of, say, Google and Facebook, can see, use and be generally aware of. This embraces the whole gamut of design features intended to keep people in the system where their actions and responses can be constantly harvested and on-sold to others (data processors, advertising companies, political parties and the like). The simplest way to think of this 'text' is to view it as the 'bait' that keeps people returning for repeated dopamine hits. The 'shadow text' refers to the vast hidden world owned by, controlled by, and singularly benefitting from what Zuboff calls the 'extraction imperative'. This is a secretive world that has thus far experienced minimal regulatory oversight, especially in the US, the country of origin. Similarly, in the second case, a so-called 'smart phone' can be regarded as 'the puppet' that appears to operate according to its proximate owner's bidding. Whereas the remote owners of hidden intelligences (a vast network of dedicated AI applications) are the invisible and currently unaccountable masters. Knowing how to use the former as a tool and enabler is one thing. Coming to grips with the hidden imperatives of the puppet masters is quite another. The separation between the two is corrosive, sustained and entirely deliberate. Knowing this can provide part of the motivation to respond by acting in defence of human autonomy itself.

The author carefully explores how this system became established and how it morphed from being something useful that initially supported peoples' authentic needs (for connection, communication, identity, location etc.) into an all-out assault on each person's interior life. The shift from serving customers with high quality search functions to ruthlessly exploiting their personal details is described in detail. Even now, following the Cambridge Analytica and similar scandals, few have yet grasped just how far this process of yielding their interiority to what Zuboff calls 'Big Other' has gone. For example, she documents how it exerts particularly savage consequences on young people at the very time when their identities, sense of self etc. are already unstable as they proceed through the upheavals of adolescence. She has strong words for what is involved. For example:

Young life now unfolds in the spaces of private capital, owned and operated by surveillance capitalists, mediated by their 'economic orientation' and operationalised in practices designed to maximise surveillance revenues... (Consequently) ...Adolescents and emerging young adults run naked through these digitally mediated social territories in search of proof of life... (Zuboff, 2019, 456, 463).

Immersion in social media is known to be associated with a range of symptoms such as anxiety and depression but this particular rabbit hole goes deeper. Viewed through the evidence presented here a combination of 'rogue capitalism' with the far-reaching capabilities of digital technology are bearing down on matters of primary and non-negotiable interest to all human beings. That is, the capacity of everyone to know, value and, indeed, to maintain their inner selves. It's here that Zuboff introduces a pivotal concept - the primacy of what she calls 'the latency of the self'. She writes:

What we are witnessing is a bet-the-farm commitment to the socialisation and the normalisation of instrumental power for the sake of surveillance revenues... In this process the inwardness that is the source of autonomous action and moral judgement suffers and suffocates (Zuboff, 2019, 468).

Thus far from being the fulfilment of humanity's aspirations and dreams, what she calls surveillance capitalism leads to 'the blankness of perpetual compliance.' Attentive readers may well ask 'have we not seen this before?' We have, not only in some of the great Dystopian fictions of our time but also in recent history. History shows that when entire populations are deprived of their inner lives, their deepest sense of self, they become depressed, diminished and even disposable. Among recent accounts, one of the most powerful is arguably that by Masha Gessen whose book *The Future is History* provides a moving collective portrait of Russia and the diminished human that she calls 'Homo Sovieticus', after the fall of the Soviet Union (Gessen, 2017). Zuboff gives credit to some of the early responses, many by the European Union. Yet there's a long way to go before the myths promulgated by the Internet oligarchs are recognised by entire populations (and the politicians that represent them) and seen for what they are: a sustained assault by secretive but radically indifferent private entities on the very foundations of their humanity.

¹⁷ Interestingly, she has little or nothing specific to say about the wider global emergency. Clearly the Oligarchs are confusing, obstructing, acting as spoilers and needlessly diverting whole populations away from our existential reality. From a point of view that seeks to explore liveable human futures it's unacceptable for any constellation of entities to operate in the ways outlined here. There's literally no future in actively working against humanity's underlying long-term interests.

4.4. Perils of monopoly

Zuboff's opus has obviously contributed much to the process of 'de-mythologising' the IT revolution and revealing the practices of some of its key players. It is both an analytic triumph and, at the same, a personal crusade that occasionally verges on the polemical. The passion of the writer for the subject is clear and it is to be expected that other observers will exhibit different and contrasting responses. E.L. Doctorow's account is informed by a cooler, more close-up, participant view of what the IT revolution is and does. His detailed view of how the new media actually work in practice suggests that the 'surveillance' side of the story, while dangerous and objectionable, may not be quite as trouble-free and all-powerful as it may first appear. In his understanding it is also, to some extent, a kind of double-edged sword with its own distinct weaknesses. So, rather than take on the Internet Oligarchs in a kind of 'frontal assault' he considers some of the traps and issues that cause them to appear less monolithic and somewhat less threatening. Specifically, he suggests that the primary focus needs to shift from surveillance per se to the raft of problems he associates with monopolies. For example:

Zuboff calls surveillance capitalism a 'rogue capitalism' whose data-hoarding and machine-learning techniques rob us of our free will. But influence campaigns that seek to displace existing, correct beliefs with false ones have an effect that is small and temporary while monopolistic dominance over informational systems has massive, enduring effects. Controlling the results to the world's search queries means controlling access both to arguments and their rebuttals and, thus, control over much of the world's beliefs. If our concern is how corporations are foreclosing on our ability to make up our own minds and determine our own futures, the impact of dominance far exceeds the impact of manipulation and should be central to our analysis and any remedies we seek (Doctorow, 2020, p. 7).¹⁸

Or again:

Data has a complex relationship with domination. Being able to spy on your customers can alert you to their preferences for your rivals and allow you to head off your rivals at the pass. More importantly, if you can dominate the information space while also gathering data, then you make other deceptive tactics stronger because it's harder to break out of the web of deceit you're spinning. Domination — that is, ultimately becoming a monopoly — and not the data itself is the supercharger that makes every tactic worth pursuing because monopolistic domination deprives your target of an escape route (Ibid, 10).

From this point of view the very real dangers and dysfunctions that Facebook, for example, imposes on users have a simple solution: break the company up into smaller elements and divest it of those it has monopolistically acquired. Of great interest in the present context, however, is that while Facebook's surveillance regime is 'without parallel in the Western world' and constitutes a 'very efficient tool for locating people with hard-to-find traits,' it cannot allow normal discussions to run unmolested. This is because the latter cannot deliver sufficient ads (or hits on ads) in the high-intensity mode demanded by the business model. The company therefore chose to boost what it calls 'engagement' by injecting streams of inflammatory material in order to create 'artificial outrage.' The fact that these can be dangerous and costly in the real world accurately demonstrates the perversity of the model and completely undermines any pretence that Facebook might contribute to social well-being. Thus, the writer is less concerned about the data capture per se than he is about the way the growth of monopolies forces people to consume the kind of material that makes them miserable! In this account the 'big four' (Facebook, Google, Amazon and Apple) all rely on such positions in order to dominate their respective market segments. In summary:

- Google's dominance isn't a matter of pure merit it's derived from leveraged tactics that would have been illegal under 'classical' (pre-Reagan) anti-trust regulations.
- Similarly, Amazon's self-serving editorial choices determine what people buy on that platform. Consumers' rights are overwhelmed because the company's wealth and power enable it to simply buy up any significant and rivals or would-be competitors.
- On the other hand, Apple is the only retailer permitted to sell via its products on its own platforms. It alone controls what products are allowed into its 'secret garden' (the app store). It monitors its customers and uses its dominance to exploit other software companies as 'free-market researchers' (Ibid 16).

The fact that these monopolistic conditions have obtained for well over a decade with little or no regulation once again reveals the inability of successive US governments to understand or respond to what has been happening in their midst. As Doctorow notes 'only the most extreme ideologues think that markets can self-regulate without state oversight.' He suggests three reasons for this:

- 1 *They're locked in to (a) 'limbic system arms race'* with our capacity to reinforce our attentional defence systems that seek to resist the new persuasion techniques. They're also locked in an arms race with their competitors to find new ways to target people for sales pitches.
- 2 They believe the surveillance capitalism story. Data is cheap to aggregate and store, and both proponents and opponents of surveillance capitalism have assured managers and product designers that if you collect enough data, you will be able to perform sorcerous acts of mind control, thus supercharging your sales.
- 3 The penalties for leaking data are negligible (Ibid, 17. Emphases added).

¹⁸ Page numbers relate to the unique downloaded version of the source material.

This is where things can appear confusing because, as Snowden's account suggested, state surveillance that had earlier been focused outward on the wider world was re-purposed to focus on the American people. In the process public / private distinctions became blurred. Similarly, big tech regularly 'rotates its key employees in and out of government service' meaning one or two years at Google could easily be followed by a similar time at the Department of Defence (DoD) or the White House, etc... This 'circulation of talent' leads to what's known as 'regulatory capture.' It indicates a diffuse but powerful sense of mutual understanding which emerges between organisations that previously had clear and distinct boundaries and quite different purposes. One of the consequences of such capture is that liability for questionable security practices can be shifted on to the customers of big tech and thence to the wider society. The question 'who is responsible?' then becomes more difficult to answer.

Doctorow asserts that 'big tech is able to practice surveillance not just because it is tech but because it is big;' also that (it) 'lies all the time, including in their sales literature' (bid 21-2). It got this way not because it was tech but because the industry arose at the very' moment that anti-trust was being dismantled.' The role that Robert Bork played in this process has been told by Taplin and others and the details will not be repeated here (Taplin, 2017). In essence, it meant that some 40 years ago, when anti-trust regulations were being framed, Bork ensured that they focused less on limiting corporate size and power than on attempting to restrain the costs of products to consumers. This judgement, and the legislative loophole in section 230 of the Communications Decency Act of 1996 (which ensured that media companies were protected from the consequences of any material that might appear on their sites) along with the lack of effective Congressional oversight, are essentially what allowed these companies to grow beyond any reasonable limit.¹⁹ The fact, as Cook noted, that 'capital wants to make more capital' supplied the motive and the rationale. And as Zuckerberg once pronounced, this also enabled them to 'move fast and break things.'

Where Doctorow differs most clearly from other commentators is in his tendency to see surveillance capitalism as anything other than plain, old-fashioned capitalism. Thus, in his view, it does not need to be 'cured.' Rather, what needs beefing up and applied more widely is 'trust-busting' and bans on monopolistic mergers. For him, big tech is not as powerful as it would like others to believe and, although it has largely escaped thus far, it cannot actually overturn the rules to protect itself from the resurgence and renewal of anti-trust measures. For him the issue is – are we up to it? It's clear that the 'we' he has in mind is considerably wider than that of gov-ernment agencies and the technically adept. For Doctorow the 'fake news' generated by monopolistic systems that have shredded what was earlier regarded as shared reality is not merely an irritant but 'an epistemological crisis.' A widespread breakdown of shared meanings, and the radical uncertainty it creates suggest the 'terrifying prospect' of a widespread loss of control and capability. Yet, one of the distinctive points of this account is that at the heart of any technologically advanced society is a need for integration. This, according to Doctorow, is what he calls 'the hard problem' of our species. If we can't coordinate different activities across multiple domains such a civilisation cannot but fail.

While for Zuboff, the high-tech path to the future is what she calls a 'bet-the-farm-commitment' or choice, here it is portrayed as the only real option. But it is framed through two different strategies. Ultimately, he believes, 'we can try to fix Big Tech by making it responsible for bad acts by its users, or we can try to fix the internet by cutting Big Tech down to size. But we can't do both' (Ibid. 33). In this view and outlook the preferred option is for a broad-based coalition spanning government and civil society to break up the monopolies, reform big tech and drive 'up and out' of the present dilemma.

5. Resistance and renewal

5.1. Re-constituting the present

Part three considered various aspects of the real-world matrix in order to know it, to deepen our understanding of what it is and what it means. Part four, above, provided substantive rationales and various proposals for taking informed action. This and the following section discuss some of the innovations and responses now under active consideration. Table 2 provides a summary of various propositions and proposals that have surfaced in this space. The specifics of each will evolve and more detailed treatments no doubt follow. Yet even this limited sample provides clear evidence of an increasingly credible shared agenda. To the extent that this can be worked out, developed, valued and resourced it can become a valuable source of actions and strategies that lead away from a high-tech Dystopia toward more desirable futures.

Zuboff's magisterial critique led her to articulate two fundamental needs of supreme and vital importance to all human beings. They are the need to recover the future tense and the need for sanctuary. Both are of clearly of great significance to Futurists and foresight practitioners. In relation to the former she frames her decision to spend seven years working on this book as an act of will that constitutes part of her own personal claim to the future. She then continues:

Will is the organ with which we summon our futures into existence...The freedom of the will is the bone structure that carries the moral flesh of every promise...These are necessary for the possibility of civilisation as a 'moral milieu'... (They are) the basis of contracts...collective decisions to make our vision real (Zuboff 2019, 331–3).

¹⁹ The clause reads 'No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider' (Harcher, 2020).

Suggested Actions

Table 2

80	
Zuboff (2019)	Re-establish our bearings. Voice collective outrage. Draw attention to earlier values. Establish new centres of collaborative power.
	Disrupt revenues of companies trading in human futures. Create new laws to support companies breaking with surveillance capitalism.
Cook (2020)	Remember that 'tech cannot fix itself.' Understand what went wrong inside Silicon Valley (SV). Understand its psychological
	deficiencies and the full implications of the values it has chosen to follow. Monitor its (lack of) emotional intelligence and its structural
	biases. Promote healthier psychological norms and revise its ethical foundations
Snowdon (2019)	Question the widespread use of illegal surveillance. Challenge its legitimacy and that of those employing it. Enact new laws to prevent it
	re-occurring. To avoid a nightmare future, individuals need to take back ownership of their own data.
Doctorow (2020)	Recognise 'fake news' as an existential threat to social integration and the well-being of society as a whole. Rather than be distracted by
	arguments about surveillance per se, re-focus on the raft of issues that arise from the unrestrained re-growth of monopolies. Reduce or
	eliminate these using anti-trust and related regulations. Ensure that everyone's digital rights are respected.
Morozov (2018)	Introduce legislation to force companies to pay for the data they extract. Improve citizens' rights to access data obtained from public
	sources (such as CCTV). Combine data protection with a proactive social and political agenda. Use the 'data debate' to re-think other
	utilities and services (such as welfare, unions and bureaucracy).
Howard (2020)	Establish the principle that 'public life belongs to the public.' Require companies to routinely contribute such data to archives, libraries
	and similar public institutions. Explore new opportunities for civic, as opposed to commercial, engagement.
Cadwalladr (2020)	Regulate in relation to four main categories. I. Safety. No product should be sold / shipped until it demonstrates safety and is free from
	obvious bias. 2. Privacy. Treat all private data as a human right, not an asset. 3. Honesty. Remove the oligopolistic power now exercised
	by companies such as Facebook and Google, especially as they affect ad networks. 4. Competition. Strengthen and enact the relevant
	anti-trust laws that encourage entrepreneurism and innovation.
Tarnoff and Weigel	Don't see IT issues as separate. Human beings have co-evolved with technologies over time. The focus should therefore be on 'humanity/
(2018)	technology co-evolution.' Society is not served well by having technologies imposed (or sold) from above. Society as a whole should be
	involved in deciding how to live with technology. If companies should follow specific rules that retain democracy as a guiding principle
Lavelle (2018)	Invert operating principles of Facebook, Google etc. Users to opt in rather than search for escape routes. They should be provided access
	to clearly documented and user-triendly tools for managing their data. Calibrated fines needed to deal with knowing misuse of data.
0 1 (0010)	Users have option of retaining all their data for a fee.
Sample (2019)	In 2019 1im Berners-Lee, an early internet pioneer, dratted a contract for the web. It sought to protect human privacy, provide access
	to individuals' data and establish a right to not have the latter processed. It argued for community consultation prior to products being
D - 11++ (0000)	launched, for the web to be safe and remain open for all users. Berners-Lee nas also created Solid, a more person-centred data system.
Delbert (2020)	New laws to restrain now tech companies gatner, process and nandle personal information. Companies required to open up algorithms
	etc to external scrutiny and public interest auditing. Legal protection of worker's rights in the gig economy. Repeal section 280 of
Econom (2010)	the 1990 Communications Decency Act.
Eggars (2018)	update the Universal Declaration of Human Rights and add two new amendments. I. Assert that all surveillance is inherently abhorrent
	and undertaken only by law enforcement with judicial oversight. Z. Kesist placing everything online. Ensure that human beings can
	continue to nive real analogue nives offline as much as possible.

The notion of 'civilisation as a moral milieu' is a powerful and compelling one that transcends more common utilitarian conventional views. By contrast, the conditions and agreements demanded by Google, for example, require centuries of human legal practice to be set aside in favour of what she calls 'Uncontracts'²⁰ The 'right to sanctuary' is also of primary significance. It is among the most ancient of human rights and thus of vital and enduring value. But it is far from impregnable when 'physical places, including our homes are increasingly saturated with informational violations as our lives are rendered as behaviour and expropriated as surplus.' Moreover, the power of Big Other 'outruns society and law in a self-authorised destruction of (this right) as it overwhelms considerations of justice with its tactical mastery of shock and awe.' What is required, therefore, are 'new forms of countervailing authority and power.' In place of a swelling 'social void' this depth critique envisages both 'direct challenges' to the power of Surveillance Capitalism and a commitment to 'new forms of creative action' (Ibid 479–86). Zuboff also advances a number of broad suggestions about what, in her view, needs to be done to rein in Surveillance Capitalism (SC). In summary they include:

- Naming and establishing our bearings, re-awakening our astonishment and sharing a sense of righteous dignity.
- Giving voice to our collective outrage and refusal of the diminished futures on offer.
- Becoming alert to the historical contingency of SC by calling attention to ordinary values and expectations that existed before it began its campaign of psychic numbing.
- Establishing new centres of countervailing civic power equipped with laws that reject the fundamental legitimacy of SC's declarations and interrupt its most basic operations (Ibid. 395–421).

A new regulatory regime equipped with adequate laws will clearly take time and effort to achieve. Of the three key suggestions that Zuboff makes at least two are based on historical precedents:

First, *interrupt and outlaw surveillance capitalism's data supplies and revenue flows*. This means, at the front end, outlawing the secret theft of private experience. At the back end, we can *disrupt revenues by outlawing markets that trade in human futures* knowing that their imperatives are fundamentally anti-democratic... Second, research over the past decade suggests that when

 $^{^{20}}$ These are forced 'agreements' created by the "positivist calculations of automated machine processes." In place of human qualities such as dialogue, problem solving and empathy, the 'Uncontract' leads back to 'the blankness of perpetual compliance' referred to above (Zuboff, 2019 334–6).

users; are informed of surveillance capitalism's backstage operations, they want protection, and they want alternatives. We need *laws and regulation designed to advantage companies that want to break with surveillance capitalism.*.. Third, lawmakers will need to support *new forms of collective action*, just as nearly a century ago workers won legal protection for their rights to organise, to bargain collectively and to strike. Lawmakers need citizen support, and citizens need the leadership of their elected officials (Zuboff, 2019; emphasis added).

Kathy Cook's exploration of the psychology of SV identified similar points of clarity and reached similar conclusions. She confirmed that we are facing an 'unprecedented transition.' Related to this is a strong belief that that 'tech cannot fix itself.' For her 'the notion that more tech is the answer to bad tech is psychologically curious at best, irrational and self-serving at worst; and yet it happens constantly, not only within the tech industry, but within society.' She adds that 'our increased reliance on technical solutions is rooted in a cultural narrative that purports the boundless power of technology' (Cook, 2020, 233). Clearly the embedded symbolic power of such cultural narratives also needs to be accounted for and moderated. What might be called the 'dual nature' of technology also helps clarify why the values, beliefs and practices that drive its use in these forms won't be corrected by its promoters and developers.²¹ To be at all useful initiatives must originate elsewhere. Hence Cook's instance on:

- Understanding what went wrong in the first place.
- Understanding the psychology and values driving the industry ... (in the belief that) that the world can be a better place; and,
- Working to ensure the industry moves forward with better values and healthier psych norms (which, in turn) requires a revisioning of the tech industry's ethical foundations.

Snowdon's account originated within the privileged spaces of the intelligence community. He saw how, under the pressure of the 9/ 11 attack and a renewed sense of threat, the character of that 'intelligence' gained new and problematic features. This is where events in SV connect back directly to themes, narratives, values and priorities in the wider culture of the US. It is a nation that has a long track record of sponsoring ideologies, trends and, indeed, technologies without paying a great deal of attention to the likely consequences.²² Snowdon is far from alone in wanting us to 'reclaim our data' and, in so doing, take active steps to avoid the kind of diminished future that his own experiences have led him to fear. As noted, Doctorow has a closer, more fine-grained view of the structures, processes and products of the IT revolution and he sees 'fake news' as a particularly serious existential crisis. His main concern is to bring back antitrust regulation in order to reduce or eliminate the extremes of monopoly power.

5.2. Turning the tide?

At the level of events steps are slowly being taken that seek to challenge and limit the power of the Internet Oligarchs. They're driven by actors in several countries working on behalf of governance and civil society. For example, during 2019 the French data watchdog fined Google Euro50 m 'for failing to provide users with transparent and understandable information on its data use policies' (Hearn, 2019). The European Union (EU) has flexed its regulatory muscles on several occasions in relation to privacy, taxation and monopolistic behaviour and especially via General Data Protection Regulation (Wikipedia, 2020). The UK began the process of establishing critical infrastructure to enforce a new raft of regulations. It included a new Competition and Markets Authority (CMA) containing a dedicated Digital Markets Unit (DMU) with the power to levy serious fines upon companies that failed to abide by the new rules. Even the USA, which had been so slow to react, showed signs of following suit. For example, in October 2020 the US justice department sued Google for illegal monopoly in the online search market. In the following December the US Federal Trade Commission sued Facebook for breaking anti-trust laws and threatened to break it up into smaller units (Canon, 2020). Several congressional hearings were subsequently held and executives of the 'big four' companies were summoned to appear. After an uncertain start the hearings slowly became more focused and effective. Then in October 2021 whistleblower, and former employee of Facebook Francis Haugen appeared, bringing with her solid documentary evidence of the way the company had pursued its own interests at the expense of others, particularly young women concerned with body image. It was a decisive moment when, for the first time, the initiative passed from the oligarchs to the elected authorities. Headlines including terms such as 'moral bankruptcy' and 'the end of the house of Zuckerberg' began to circulate world-wide (Cadwalladr, 2021; Smith, 2021) Only time will tell if a newly alert Congress will take the next steps including having the courage to repeal the infamous Section 230 of the Communications Decency Act of 1996.

During 2020 the Australian government took several small but significant steps. It confronted Google and Facebook with proposals for a levy intended to compensate news organisations for the loss of their advertising income and the illegal use (theft) of their material. An agreement among dominant media players was later signed (Speers, 2020). Concerns were also expressed about how children and young people in particular are exposed to both the opportunities and the very real dangers of the on-line world. Cyber bullying was deemed of particular concern (Ham, 2020). Very young children are obviously vulnerable since they have no defence against the digital incursions that have occurred through children's TV programs, games, YouTube and so on. During late 2020 a report

 $^{^{21}}$ A staff writer for The Atlantic who attended a 2020 Las Vegas consumer electronics show concluded that all available 'solutions' on offer involved the use of yet more technology. Given that most existing forms have known faults and costs, she emerged with a strong sense that this high-tech industry was less concerned with solving real problems than 'capitalising on the anxieties of the affluent.' As such it clearly fits a wider pattern. (Mull, 2020).

²² 'Action regardless of consequences' might well be its unacknowledged national motto. This and related themes are explored in *Is America the Land of the Future*? special issue of *Foresight* Vol 10, 4, 2008.

surfaced about the fact that 'always on' digital assistants in the home were attracting the attention of very young who were unconsciously providing family information to the remote listeners (Tapper, 2020). In response the Australian government began working toward the establishment of an Online Safety Act which became law during late 2021. Along with the appointment of an e-safety commissioner the Act is intended to augment other measures such as an existing 'e-safety' site.²³ The very real threat of direct exploitation of children and young people for criminal purposes also led to increased support to the Australian Federal Police (AFP). This was part of an even larger grant of AUD\$1.66 billion for a cyber security package provided to the AFP to help the nation defend itself from the growing threat of cybercrime and cyberwar (Galloway, 2020a, 2020b).

Taken at face value such practical responses on the part of various Western governments may appear to support the notion that the 'tide' may indeed be turning. Yet 2020-21 were not normal years. Covid-19 pandemic was a classic 'wild card' familiar to futurists and foresight practitioners. As is well known it impacted humanity with all the force of an unstoppable biological hurricane. Under the pressure of necessity large numbers of people were driven online. Almost everyone learned how to use Zoom but few grasped how increased dependence on an already dysfunctional system would place them at greater long term risk. In the midst of a torrent of unwelcome change it's all too easy to lose one's bearings. All of which evokes a playbook and a text that is decidedly less optimistic. As Klein explains in her analysis of 'disaster capitalism,' it is during just such times of shock and disruption, while public attention is diverted, that powerful entities quietly but actively pursue their own specific interests (Klein, 2017).

As Covid-19 proceeded physical money almost disappeared only to be replaced by digital alternatives such as card and 'contactless' payments. Few were disposed to consider the longer-term costs of a cash-starved society, but they are considerable, especially for informal uses and the poor (Kale, 2020).²⁴ Many organisations dispensed with offices requiring decision-makers and other employees to meet 'virtually.' Once again, the products and services offered by the Internet giants took centre stage and few involuntary 'customers' had time or opportunity to think beyond the moment. Journalist Anna Krien, however, took a close look at the online 'distance learning' arrangements adopted by many schools during the pandemic. She found disturbing connections between some educational administrators on the one hand and companies like Apple and Microsoft on the other. Dedicated delivery platforms and content were being widely widely taken up by schools and recommended to parents. During school visits she expressed her growing concerns, but to little avail. Since these companies had been courting them quietly for years it was easy for schools to slip all-too-readily into using commercially designed packages rather than those created by educators according to educational criteria (Krein, 2020).

Ronald Deibert and the Citizen Lab at the University of Toronto have considered these and similar questions. In their view too much attention has been focused on micro-issues, such as the uses and misuses of particular apps. Meanwhile, 'an entire landscape has been shifting beneath our feet.' Specifically, and in relation to the pandemic they suggest that:

This explosion of pandemic-era applications will invariably amplify the defects of the mobile marketing and location tracking industry – a sector made up mostly of bottom-feeder companies whose business model relies on collecting billions of usergenerated data points, later sold and repackaged to advertisers, law enforcement, the military, customs and border agencies, and private security services (not to mention bounty hunters and other dubious characters). A shocking number of entrepreneurs and policy makers are nonetheless turning to this cesspool of parasitic firms – poorly regulated and highly prone to abuses – as a proposed pandemic solution... The entire ecosystem presents a bonanza for petty criminals, ransomware opportunists, spyware firms and highly sophisticated nation-state spies alike.

Moreover, such concerns are unlikely to recede once the pandemic is over. Indeed:

some argue that this COVID-19-era innovation cycle will pass once there is a vaccine. But the more we embrace and habituate to these new applications, the deeper their tentacles reach into our everyday lives and the harder it will be to walk it all back. The "new normal" that will emerge after COVID-19 is not a one-off, bespoke contact-tracing app. Rather, it is a world that normalizes remote surveillance tools such as Proctorio, where private homes are transformed into ubiquitously monitored workplaces and where shady biometric start-ups and data analytics companies feed off the footloose biosurveillance economy (Deibert, 2020).

This raises the very real question as to just how societies already weakened by the virus and its multi-faceted aftermath will be able to gather the will, imagination, resources and organisational capacity to somehow 'disembed' themselves from these very same devices and systems. What will this take?

It may be useful to consider responses at several levels of aggregation, each of which may be appropriate to different tasks and actors.²⁵ Effective coordination between different levels and types of response would certainly increase the chances that more effective options for de-coding and re-constituting the matrix will emerge. Such multi-layered agendas will necessarily include progressive organisations, of which there are many, such as the Oxford Internet Institute and the Citizen Lab at the University of Toronto. Of many outstanding individual contributions such as Tim Berners-Lee's Contract for the Internet, Pascale's New Laws of Robotics and author Dave Eggers bid to re-imagine the UN Declaration of Human Rights are worthy of mention (Eggars, 2018; Funnell, 2020; Sample, 2019). While such contributions may be far from the public mind at present, they need to be recognised and, where appropriate

²³ See https://www.esafety.gov.au/.

²⁴ Costs include greater anxiety... Increased exploitation of unbanked people. Fewer options for women fleeing abusive relationships. The ability to beg and cash flow to charities that rely on cash donations are disadvantaged. A public locked into a private banking system from which we have no escape and increasingly less autonomy (Kale, 2020).

²⁵ For example: Individual; Civil and Group; State and International. This can be seen as part of an agenda for future work and clarification of 'who does what', where and when?

supported. Other, perhaps less obvious, factors may also serve to focus and undergird these efforts. For example, one of the most serious charges to be laid against the internet oligarchs, their supporters, investors and other interested parties is that *in pursuit of unlimited self-interest they have worked to sustain an environment characterised by stress, conflict and confusion when what the times call for are clarity, integrity and far-sighted care.* Yet at present, few seem to be explicitly aware that none of these over-confident entities possess anything remotely like a social licence for the intensive extractive and merchandising procedures they've undertake, or for the many unauthorised uses to which this stolen 'behavioural surplus' has been put.²⁶ In principle, therefore, democratic agencies have every right to strip them of as much of their illegitimately acquired dominance and power as required. But there is a huge task of institutional innovation and 'back-filling' to accomplish first. Ironically enough, some parts of the necessary institutional infrastructure do not need to be re-created from scratch.

It is worth recalling that back in 1972 an Office of Technology Assessment (OTA) was established to advise the US Congress on the 'complex scientific and technical issues of the late 20th Century.' It was highly successful and widely emulated. That is, until it was critiqued in a book favoured by the Reagan administration that claimed it was an 'unnecessary agency' (Wikipedia, 2015). Despite the fact that in the 24 years of its existence it had produced some 750 studies on a wide range of topics including 'acid rain, health care, climate change and polygraphs,' it was abolished in 1995. Subsequent initiatives were predictably smaller, more limited and less well funded. The point is that, prior to the emergence of the IT revolution proper, and the development of surveillance capitalism, prevailing political elites in the US chose to eliminate this core institutional capability leaving the nation (and world) ever more vulnerable to the unanticipated costs of high-tech innovation. Some 25 years later Institutions of Foresight (IoFs) are still uncommon. Very few nations have a high-quality foresight capability installed at the national level to advise governments on the issues such as those discussed here.²⁷ But this could change very quickly if what has been learned from previous iterations were to be taken up and consistently applied.²⁸

In the absence of high-quality scanning, foresight and technology assessment societies remain profoundly vulnerable to a wide variety of future hazards. These obviously include further high-impact technological innovations and their accompanying disruptions. This is particularly the case with poorer and less developed nations such as the Pacific Islands which, at the time of writing, were being newly connected to the internet by high-speed undersea cable. Needless to say, scant preparation for the ensuing social and cultural impacts had been carried out (Higgenbotham, 2020). This particular example is a reminder that there are still few or no effective, non-commercial, 'filters,' 'barriers' or 'testing / proving grounds' through which new technologies and applications are required to pass prior to implementation.

The steady rise of Artificial Intelligence (AI) is among the most serious issues of concern, especially when united with new generations of high-tech weapons (Chan, 2019).²⁹ Google's Deep Mind project generates headlines each time it makes new discoveries but as the property of a vast private company it raises far more questions than it answers.³⁰ Lanier goes as far as to suggest that AI should be seen less as a technology than as an ideology.³¹ Similar issues also proliferate in the open market as consumer electronics become more complex and powerful. Apple has, for example, been working for some time to develop its 'consumer smart glasses' without reference to any substantive external foresight evaluation. It was overtaken in these efforts in late 2021 when Facebook announced the arrival of its own 'RayBan' VR glasses as an addition to 'consumer wearables.' Typically, however, the event was seen entirely through the lens (no pun intended) of in-house policy such that any wider implications were left to others (Hearn, 2021) Such devices are intended to be worn like regular glasses but include a visible layer of digital information known as AR (Artificial Reality). While this may sound useful it raises profound questions indeed not merely about data access, privacy, regulation and so on, but about the kind of 'cyborg' society that would likely result. If, as suggested here, current IT frameworks and installations are frequently pernicious and defective, ways of urgently enquiring at the social level whether such devices have any legitimate place at all in our lives, let alone those of children and young people.

If there's one thing that's clear it is that AR glasses cannot be free standing. They become one of countless other devices engaged in what's being called 'world scraping.' That is, the constant recording and up-loading of information on more or less everything. It was referred to by one IT developer as 'a big tech dream – and a privacy activist's nightmare.' He added that:

Smart glasses turn people into walking CCTV cameras, and the data a company could gather from that is mindboggling. Every time someone went to a supermarket, their smart glasses would be recording pricing data, stock levels and browsing habits; every time they opened a newspaper, their glasses would know which stories they read, which adverts they looked at and which pictures they lingered on (Hearn, 2020).

In this context the need for more appropriate values, enhanced worldviews and a new sense of reality and purpose is paramount.

²⁶ To say nothing of those who divert high-tech equipment and expertise to support openly criminal enterprises. A case in point is the way that Mexican drug cartels are reported to have purchased high-tech spyware from their country's own police force (Schillis-Gallego & Lakhani, 2020).
²⁷ Three notable exceptions are Singapore, Finland and Sweden all of whom see the value of an installed foresight capability at government level given that each face particular weaknesses and external hazards.

²⁸ See Author, 2004, chapter 14: Creating and Sustaining Second-Generation institutions of foresight.

²⁹ However, see Pasquale (2020) for some practical suggestions about improving on Asimov's famous, but now dated 'three laws of robotics.'

³⁰ For example, a 2020 Guardian editorial in noted that 'Only 25% of AI papers publish their code. DeepMind, say experts, regularly does not.' Guardian Editors, December 7th.

³¹ "AI" is best understood as a political and social ideology rather than as a basket of algorithms. The core of the ideology is that a suite of technologies, designed by a small technical elite, can and should become autonomous from and eventually replace, rather than complement, not just individual humans but much of humanity (Lanier, 2020).

Under 'appropriate values' we might consider respect for human dignity, kindness, empathy, freedom from oppression and so on. Under 'enhanced worldviews, we might nominate 'world-centricity' coupled with a 'post-conventional' openness and a focus on community-based innovation. A 'new sense of reality' emerges from many such helpful combinations and is visible, for example, in the work of those who've seen beyond dystopia to futures characterised by informed hope and deep commonalities of interest (Solnit, 2005). New institutions and institutional settings are required to provide the means by which societies can refresh their view of the past, present and possible futures. The hard questions are indeed right there in plain sight. How, for example, can a society 'find its bearings' without putting in place learning contexts in which the broad issues of history, the constitution of the present and the span of possible future options can be freely examined and discussed? How can any social entity make considered choices about its present commitments and aspirations for the future without access to high quality, dedicated foresight capabilities and services? How can anyone gain a critical purchase on existing and new technologies without the embodied social capacity to do so? It takes years of effort and application to produce highly trained people who qualify as pathfinders and guides to the chaos ahead. None of these things can happen until societies wake up to the existential predicament that humanity has created for itself. But there are distinct signs of hope. The 'pushback' against the Internet as a medium of extraction, exploitation and abuse has already progressed from a few lonely voices to a growing chorus of dissent. If the means can be rapidly put in place to invest in state backed, cooperatively owned and operated social media, the Oligarchs can be retired from history.³² They will become redundant as the character and functions of IT shift from one cultural universe (invasion, dispossession and exploitation) to another (respectful fulfilment of authentic needs).

6. Conclusion

This series has argued that current trends, while powerfully established, are far from inevitable. They are perhaps best viewed as warnings that can inspire us in many different ways to take decisive action. 'De-coding the Matrix' is a vital and necessary step in the context of the global emergency but it is part of a broader, deeper picture. Issues regarding 'technology' per se are by no means the only, or even the main concern. A case has been presented here suggesting that interior human characteristics such as ignorance, greed, self-regard and what E.O. Wilson once called our 'paleolithic obstinacy' have affected the trajectory of human development every bit as much as any conceivable array of devices and tools. In this view, the compromised condition of the Internet is a reflection of ourselves writ large. Navigating around a global, high-tech Dystopia requires setting aside the self-serving values and outlooks that created it. Our most precious resource, perhaps, may be a new or renewed emphasis on the most positive and inclusive human qualities such as foresight, self-knowledge, empathy and perceptiveness. Which is why developmental psychology, integral theory and related fields constitute vital assets at this time (Author, 2012; Gidley, 2017).

Throughout this period countless warnings have been voiced about the failure of humanity to come to terms with the implications of its growing impacts on the global system. In September 2020, in the middle of a global pandemic, the United Nations (UN) published yet another 'state of nature' report which stated that the world had failed to meet any of the targets set decade earlier to stem the tide of destruction (Greenfield, 2020).³³ We know that coral reefs are disappearing while glaciers and ice sheets are melting at alarming rates. The last half-century has seen precipitous declines in a number of wildlife populations (Weston, 2021). We know that in relation to the remaining 'carbon budget' (the amount of CO2 that can be put into the atmosphere) humanity has no more than a decade to avoid the chaos of irreversible global heating (IPCC, 2021). The environment is, of course, 'only' one source of long-term systemic risk.

Views looking back to the decline and collapse of earlier civilisations make it clear that many human / cultural / technical combinations readily become unsuccessful and disaster-prone (Diamond, 2005; Oreskes & Conway, 2016). This is certainly the case within our fractured present when extreme degrees of self-regard took flight within a socially sanctioned system designed to maximise private profit at all costs. This, in turn, occurred within an over-confident, expansionist worldview that encouraged the world's richest nations to believe that they had the right to promulgate a limitless economy of acquisition and greed. In order to sustain the illusion, dominant players gave themselves permission to view the world as little more than a vast array of resources offering endless extractive opportunities and infinite wealth.³⁴ It is within these very specific human and ideological circumstances that the IT revolution took root. Few realised at the time that the design template perfected in 1950s America contained no limiting principle and had tended toward 'overshoot and collapse' from the very outset. Yet it was within these very specific human and technological circumstances that the IT revolution took root. The ruthlessness of raw capitalist imperatives, along with the radically limited value set of the oligarchs, encouraged them to grow rich by invading unprotected human space. The defects and dangers associated with these particular human and cultural combinations were and are well known and obvious, but the voices of those who understood them, and sought alternatives, were overwhelmed. Pathways to other and more viable human futures were deliberately cast aside. The result is a world in

³² A number of approaches to productive innovation along with strategies for humanising and democratising the IT revolution are summarised in Author, 2018c. Also see Deleting Dystopia (Author, 2021).

³³ The UN's head of biodiversity was quoted as saying that 'Earth's living systems as a whole are being compromised... The more humanity exploits nature in unsustainable ways and undermines its contributions to people, the more we undermine our own wellbeing, security and prosperity' (Greenfield, 2020).

³⁴ A process that continues up to this day regardless of global heating and rother well-known hazards. See Neate, 2019.

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which extractive hyper-cultures are failing, having reached the early stages of their own entropic breakdown (Wallace-Wells, 2019).³⁵

In summary, the key to moving forward is a paradigmatic shift, or several, from passively accepting the views of reality tenaciously promulgated by Silicon Valley and its global marketing apparatus toward a different reality altogether. In contrast to the self-centred and defective values of the oligarchs, we require broader, more embracing worldviews coupled with some of the life-affirming values outlined above that respect our common humanity *and* the fragility of the world upon which we depend. Together they clearly provide a more appropriate and durable basis for civilised life. The proposition that knits together so much of what needs to be done is that the IT revolution has been wild, unauthorised, secretive and subversive of our humanity and our world. The practical shift away from what is already a 'failed future' has two parts. The first is to comprehensively deny continued, 'rubber stamp' social validation to these rich and powerful companies. It was never theirs to begin with. The second is to transfer or duplicate the most socially useful parts of their operations from closed private infrastructures to a range of civil equivalents, each equipped with suitable codes of practice operating exclusively in the public interest. It is indeed an opportunity to 'reset and rethink the entire technological ecosystem from the ground up' (Deibert, 2020).

The future before us continues to appear threatening not because of any built-in necessity but because societies, and those in positions of power and authority, have still not woken up to the full costs of raw, unrestrained capitalism and the very real threats that now confront humanity. Does it make sense to stand by and passively watch the world's most powerful organisations create further waves of technological disruption regardless of consequences? If so, then we can say farewell to what remains of our environment, our autonomy, our privacy and humanity. If not, then we need to find the collective will to moderate the IT revolution and fit it more carefully in to a very different, more humanised, outlook. The good news is that the balance is certainly shifting. It follows that the very best time to consciously draw upon more sustaining values and more embracing worldviews is right now.

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³⁵ It's clear in retrospect that the struggle to induce the world to 'wake up' to the consequences of its own success, particularly in relation to its growing impacts on the Earth system, should have started no later than the 1970s when the first hard evidence of human over-each became credible and widely available (Meadows et al., 1972). But powerful forces within the US continued to undermine and marginalise these efforts right up to the present day (Leigh, 2020, Rich, 2020).

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