

History is full of unpredicted futures

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‘You say things about the future but you have not been there so you cannot know.’

—Peter Carey, *His Illegal Self*

‘The political and economic structures made by humans share many of the features of complex adaptive systems ... Whether the canopy of a rain forest or the trading floor of Wall Street, complex systems share certain characteristics. A small input to such a system can produce huge, often unanticipated changes — what scientists call the amplifier effect ... Causal relationships are often nonlinear, which means that traditional methods of generalising through observation (such as trend analysis and sampling) are of little use. Some theorists of complexity ... say that complex systems are wholly nondeterministic, meaning that it is impossible to make predictions about their future behaviour based on existing data. When things go wrong in a complex system the scale of disruption is nearly impossible to anticipate.’

—Niall Fergusson, ‘Complexity and Collapse’, *Foreign Affairs*, March–April 2010, p. 24.

1. The past is peppered with unpredicted discontinuities

- A 50-year future scan in 1910 could not have predicted two devastating world wars, penicillin, the splitting of the atom, the bikini, the invention of the transistor, the DNA double-helix and the first space satellite, which all occurred before 1960. The triumph of communism in Russia and China would not have been confidently predicted. At home aerial topdressing would have been on few, if any, 1910 scans and the welfare state would have seemed utopian. Even a 20-year future scan would have missed the first world war, communist Russia, penicillin, splitting the atom and the 1929 stockmarket crash.
- A 50-year scan in 1960 could not have predicted the collapse of communism, epigenetics, nanoscience and the internet and related digital technology. It would have deemed as fantasy the reach and depth of globalisation of information, finance, production and people and a global conference to discuss combating climate warming. At home would world-class wines, world-leading digital imagery for films, the restoration of the Treaty of Waitangi, Asians making up 10 percent of the population and a free-trade agreement with a rapidly modernising and marketising China have been in anyone’s 50-year scan? Add a year in which the Prime Minister, Governor-General, Chief Justice, chief executive of the biggest listed corporation and head of the accountants society were all women.
- So any peering into the future and any attempt to build platforms of resilience to make the most of that future must recognise that there will be large discontinuities. History, it might be said, is full of unpredicted futures.

2. Some global reference points

- Bearing in mind the impossibility of predicting the unpredictable discontinuities, here are my base points for a 20-year projection.
- **Globalisation** of information, finance, production and people (large-scale migration) will likely continue through the next 20 years, embedding interconnectedness and interdependency but also fuelling **interstate and intrastate** tensions (over, for example, resources, inequalities, privacy and cultural differences) which

may result in attempts by states or political movements within states to stall or reverse elements of the globalising process (notably some trade, ownership of land and some enterprises and people flows).

While the sovereign **nation-state** will still be the organ of political organisation, its sovereignty will be constrained by a growing need for international agreements, instruments and policing mechanisms.

The once monolithic state is likely to fragment and/or diversify and/or operate differently: the state will contract in rich countries relative to national output and expand in getting-rich countries where middle classes demand better services and extend this to the still-poor.

Two items: if the United States blocked Chinese imports, United States-based Apple would lose \$US 2 billion revenue on its iPhone alone; call centre wages are the same in the United States as in India.

- **Inequalities** within economies will persist and in established rich economies may continue to grow as lower-income activities come under competition from emerging economies. Inequalities between economies will diminish, particularly for routine, readily replicable activities ('the world is flat'). Those engaged in non-routine, high-knowledge-intensive activities will command high incomes, set by global demand. The global elite as redefined over the past 25 years is likely to maintain its ascendancy.
- **Urbanisation** is likely to continue (unless there are major disasters). Large cities will likely continue to lead economic growth but the emerging top performers will reflect the geo-economic rebalancing from North America/Europe towards China, India, south-east Asia, maybe elements of South America and possibly some yet-to-emerge economies elsewhere. The top performers will be of two sorts:
 - fast industrialising cities en route to post- industrial centres;
 - cities that are 'spikes' – aggregations of people engaged in non-routine, high-knowledge-intensive activities that generate high incomes.

New Zealand will not have cities in either category. But by the 2020s the dynamics may have changed so as to enable smart small countries' cities to link into the major spikes.

- Note a possible counter trend of **micro and local** initiatives and preferences: micro-markets for products/services; niche companies doing well locally and internationally.
- Global interconnectedness will enable **criminal and terrorist activity**, some of it state-backed **cyber-warfare** aimed at disrupting or destroying communication lines and stored information. Some see this as the 21st century form of, or trigger for, any major war that might occur (minor wars will be more recognisably 'conventional'), which could break out suddenly and unpredictably. Fergusson in the article quoted above noted that the first world war '[broke] out to the surprise of nearly everyone'.
- The **rising global population** and the enrichment of enlarging segments into **middle class** status and income will **intensify competition for resources** — notably energy, metals and minerals, food and water — perhaps in this decade to the point of inter-state conflict, possibly to the point of major and devastating conflict as periodic price spikes and shortages cause distress. New plant technology and better management of water and stocks may have provided the means to offset that by 2030 but are unlikely to come fast enough or spread widely enough to effect a smooth transition. New Zealand may be able to avoid involvement in such conflicts but may not.
- If there is **atmospheric and oceanic warming** of the degree outlined by the International Panel on Climate Change, this may precipitate famine, disease and inter-state conflict and may displace populations in low-lying island territories or places which become drier. New Zealand may come to be perceived to be a wet haven, which would be a huge plus but may come at the cost of wealthier countries and huge companies seeking to buy into this country to ensure food security. It is also possible an alternative pressure will come to bear on policy in this country if there is international

action by states on the issue (either belatedly to contain warming or to block interaction with, including exports from, states deemed to be backsliding). But such events may be some decades off.

- **China** will continue its rise through the next 10–20 years and consequently its exercise of soft and hard power will increase in the region and globally, in part to ensure access to resources. Increasingly, new science will come from China and its ideas about social and political organisation, which are deeply different from the post-Enlightenment ‘western’ ideas, will have ramifications beyond its borders and especially in countries with high Chinese-ethnic populations. But China’s rise is highly unlikely to be linear and even: water problems, access to resources, pollution, social and political tensions, bureaucratic mistakes and a post-2020 workforce shortage as the ratio between old people and those of workforce age rises steeply thanks to the one-child policy, coupled with interstate tensions, are likely to throw sand in the gears from time to time, possibly (probably?) causing severe temporary disruptions and global security and economic shocks.
- **Rising powers** at some point in the past have triggered *wars* (cf Germany from 1870–1945). This is distinctly possible with China’s rise. But, if so, it will be a war like none seen before. One line of analysis focuses on cyber-warfare.
- **India** will also develop and will exercise greater soft and hard power, but 20 years behind China. It is set to have the largest single-nation population. But it has large economic, political and social complications and its economic rise is likely to be uneven.
- The relative **global influence of the United States and Europe will diminish**, thus **ending the half-millennium of Atlantic domination**. There may at some point be collapse of the sort Fergusson talks about above: a sudden end of empire. But for some time they will continue to be pre-eminent in new science and technology.
- **Science and technology** (increasingly in future from Asia) will continue to drive some fast and deep changes in economic opportunity, resource availability and use, human health and longevity, connectivity and social control and capacity for destruction. Major areas: artificial intelligence, GPS and other ICT technologies (and antidotes to preserve privacy and liberty), nanotechnology, synthetic biology, RNA interference, epigenetics, energy technologies. But there is no compelling reason to believe science will forever continue to ensure safe and self-sustaining ecosystems in the face of over-exploitation.

3. New Zealand’s starting points

- New Zealand has a number of attractive **natural comparative advantages**:
 - **water** in abundance (in a water-constrained world);
 - a relatively benign **climate**, less affected by climate change than most other countries;
 - the capacity to grow high-quality **food** plus a huge fishing zone (in a food-short world);
 - abundant sources of **energy** (in an energy-constrained world) and so the capacity to do well in a carbon-constrained world;
 - distance from mayhem and thus a **safe** haven (though also distant from markets and vulnerable to the severance of supply lines); and
 - a great marketing **brand** — clean/green, 100% pure — and a strong brand reputation — fresh/safe/natural — (which it doesn’t try hard to earn or preserve);all of which may make it highly desirable over the next 20 years.
- New Zealand also has some **institutional, cultural and social comparative advantages**:
 - **strong institutions** by world standards – the rule of law, very low corruption, a stable political system, high in ease-of-doing-business rankings;

- high ranking in **prosperity** measures that go beyond simple GDP per capita; an attractive stepping-stone for immigrants;
- a reasonably good **education** system (though in need of rethinking) and thus a reasonably well-educated populace even though one which emigrates in large numbers;
- an **inventive and adaptive** population; and
- a by-and-large **tolerant** society; there has been no violence in the transition to a **bicultural** society and a multicultural one.
- Other major **starting characteristics** are
 - a **globalised** economy and society;
 - an **unbalanced economy**, legacy of the bubble mentality of the 2000s;
 - a rapidly **Polynesianising** society (Māori and Pasifika) that is increasingly of the Pacific, not just in the Pacific and in which mainstream culture increasingly reflect indigenous culture and custom and in which iwi/hapu are built into the power structure;
 - a rapidly **Asianising** society (3 percent in 1991, 9 percent in 2006 and 11 percent now);
 - a rapidly **Australasianising** society and economy through the single economic market, a common labour market and involvement of New Zealand ministers in Australian federal-state Council of Australian Government (COAG) meetings; and
 - a society reaching the end of the ‘population bonus’ which has been a factor in past economic growth.
- Some **down points**:
 - New Zealanders have lost a sense of ‘progress’ and the striving that goes with that.
 - New Zealanders don’t save because they have a strong sense of entitlement.
 - New Zealanders emigrate to Australia and beyond in large numbers.
 - New Zealand has great difficulty retaining its elite.
 - New Zealand is still essentially an extractive economy (primary products, landscape tourism) rather than a human-capital-based economy living off innovative ideas.
 - New Zealand is very small and its supply lines very long.
 - As to brand, New Zealand is not clean-green; it is dirty and brown but empty.

In short, New Zealand is a rich developing country but puts the emphasis on rich – which makes it defensive, so issues are ‘problems’ – instead of on ‘developing’ – which would engender an outgoing, achieving mentality, so issues are ‘opportunities’.

4. Some assumptions about New Zealand’s next two decades or so

- **Australia** will continue to loom large. The income differential is likely to persist. The economies and political systems will continue to mesh. Within 50 years federation is likely to be periodically discussed but not in the next 20 years.
- The ethnic **Polynesian (including Māori)** proportion of the population will continue to grow but this will be qualified by a rising proportion of Māori who have very small proportions of Māori ancestry and/or see themselves as citizens of the world (note the large and increasing numbers of Ngati Kanguru already in Australia) or citizens of the New Zealand/Aotearoa before they see themselves as Māori; the Treaty is likely to lose some force as a driver of policy by 2030.

- Some (most?) **iwi** collectively and individually will become a stronger economic force and maybe an important provider of social and educational services.
- The ethnic **Asian** proportion of the population is likely to grow, a factor of rising investment and other economic integration and, particularly in the case of lower-income source countries, socioeconomic mobility; but at some point fewer Asian students will come as the quality of home institutions improves.
- The economy will likely increasingly be **owned by Asian interests**, particularly Chinese and Indian, in part supported and facilitated by the rising presence of Chinese/Indian residents; in 50 years (maybe in 20) and Asians will be of a sufficient critical mass and the export/tourism importance of Asia of sufficient weight to make it difficult to take effective political steps to curb their influence.
- The **climate** will be affected to only a limited extent even through 50 years but sea-level rises and changes in rain patterns may become significant towards the end of the period.
- The considerable **petroleum, coal, silicon and other mineral reserves** will be proven and extracted in significant quantities (mainly with foreign capital).
- There may be increasing interest in New Zealand as a **safe haven** from terror, climate change and overcrowding, with consequent pressure on politicians to define and preserve the 'brand' ('safe', 'fresh', 'secure', 'well-governed');
- New Zealand gets better at taking ideas to scale, capturing more of the benefit of new thinking and entrepreneurial enterprise.

5. Possible discontinuities in the next two decades or so

- This list of assumptions needs to be treated with caution because the compiler of the list cannot know the actual discontinuities that will occur.
- Among **possible global discontinuities** are:
 - major war, maybe including use of nuclear weapons;
 - nuclear, biological or cyber terrorism;
 - severe resource bottlenecks and constraints;
 - severe food and/or water shortages (though conversely radical new food growing and processing technology which easily feeds 9 billion people, coupled with radical new technologies for extracting water from the sea, for storing water, for reusing water and for using less water);
 - a lurch in climate change, causing widespread severe hardship;
 - a virulent pandemic which wipes out a quarter of the world's population;
 - a breakdown of the internet and related cyber-based systems either endemically or as a result of criminal cyber-hacking or cyber-warfare, and a consequential seizing up of global or major-country financial, corporate, bureaucratic, airways and other systems;
 - a great leap forward in combining epigenetics, RNA-based bioscience, synthetic biology and nanoscience to predict and control disease and physical disability;
 - major innovations in energy and rapid spread of the technologies; and
 - sudden global recognition of and action on the threats to ecosystems, with interesting ramifications for the sovereignty of the nation-state.

- **Possible New Zealand discontinuities** are:
 - a volcanic eruption (e.g. Taranaki, which wipes out much of the dairy and oil industries, or offshore Auckland, which seriously damages the commercial centre and harbourside suburbs);
 - an 8 or bigger earthquake in Wellington or in some other well-populated place (Christchurch proves the point);
 - serious inter-racial or inter-ethnic strife;
 - large and unmanageable influxes of climate (and other) refugees; and
 - default on sovereign debt.

6. The steady-state alternative

- It is possible that the world is headed towards the sort of steady-state social and economic conditions that preceded the rise of Newtonian science, the Enlightenment, the industrial revolution and European imperialism. But even if so that is most unlikely in the next 50 years because of the continued rapid development of science, rapid demographic change and environmental constraints.

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