

The Next 20 Years: A Time of Transformation

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Will the future be hopeful or hopeless?

Optimists point out that every year humanity becomes better educated, wealthier and more interconnected (Havelock, 2011): the Gates Foundation predicts that if current trends continue there will be almost no poor countries by 2035 (Withnall, 2014). In contrast, more pessimistic analysts warn that business as usual is unsustainable: catastrophic climate change and increasing shortages of water, food and cheap energy could collapse human civilizations by mid-century (Turner, 2014).

Is one forecast right and the other wrong? Or can we reconcile these opposing views?

In this paper I suggest that the key to understanding future developments is recognising that the two major trends shaping global events—worsening problems and emerging solutions—are interconnected. Growing economic and environmental crises will soon reach tipping points that focus public attention on the existence of both dangerous threats and viable solutions. Then (and only then) will most leaders begin to make transformational decisions.

While few futurists are complete pessimists (Halal & Marien, 2011), many agree that the world is facing an unprecedented ‘Global Megacrisis’ caused by multiple interacting threats including climate change, resource shortages and financial instability (Ramos, 2011; Floyd & Slaughter, 2014). The path ahead will be rocky.

These concerns are not restricted to interdisciplinary futurists. At the time of writing (October, 2014) most economists are bullish despite widespread concerns about rising levels of debt, declining rates of growth and increasing inequality (Buttiglione et al., 2014; Samuelson, 2014). However, a growing number of experts warn that these unsustainable economic trends are likely to cause a major financial crash in the near future (e.g. Evans-Pritchard, 2014).

Underlying the differences between these optimistic and pessimistic forecasts are estimates about both the probability and severity of threats, and about the capacity of the global system to manage them.

My hypothesis is based on the following assumptions:

- 1) Many critical global trends are unsustainable (e.g. the environmental overshoot caused by expanding populations; rising greenhouse gas emissions; falling aquifers; declining stocks of critical minerals). Because they are unsustainable, unless corrected these

problems will inevitably result in system breakdowns (e.g. widespread crop failures and famines).

- 2) The global system has the knowledge, skills and resources to mitigate major global issues. The most critical risks are well known; credible solutions have been proposed (Daly, 1996; Brown, 2009; Porritt, 2013). Decisive interventions (i.e. structural reforms) by the international community could prevent catastrophic environmental, economic and social collapses and accelerate the transformation to a sustainable world system.
- 3) Unfortunately, it is unlikely that the necessary reforms will be made in time to prevent major crises. Mainstream experts and decision makers have a poor record of predicting and preventing social, economic and environmental collapses (e.g. the 1989 collapse of the Soviet Union; the 1992 collapse of the Grand Banks cod fishery; and the 2007-8 Global Financial Crisis).

The global system is also becoming increasingly vulnerable to shocks and failures. This is due to multiple factors including growing complexity and interconnectivity (Korowicz, 2014); the focus on a single variable—maximising short-term profits (Kelly, 2012); and most importantly, the cultural bias and institutional blindness and resistance to change caused by an obsolete world view—that it is possible and desirable to have exponential growth on a finite planet (Capra, 1982; Taylor & Taylor, 2007).

- 4) Growing crises will change consciousness and structures. Governments, organizations and citizens will respond in both reactive and proactive ways.
- 5) As crises worsen, people will increasingly look for alternative economic and social structures and processes.
- 6) The existence of viable (sustainable) technologies and solutions supported by networks of key leaders (e.g. in the UN Secretariat) makes global transformational global change not only possible but likely.

I have developed a general forecast based on these dynamics. This is how the global situation could develop in the short- to medium-term:

Timelines

Over the next few years the biggest risks to global stability are likely to come from the increasing divorce between the real (productive) economy and the financial sector (Palley, 2007). The 2008 Global Financial Crisis (GFC) was caused by the shift of capital from production to financial speculation. Financial assets represent liens on future real wealth: claims which can only be realised under conditions of exponential real economic growth. The inability of the real economy to grow as quickly as the expanding claims of the financial sector produced credit and asset bubbles which eventually burst, causing the financial crash (Crotty, 2009).

The economic distortions of the growing financial sector are compounded by a deeper problem: a decreasing rate of economic growth. Factors causing this include decreasing productivity (Porter and Rivkin, 2014), growing inequality (Wilkinson & Pickett, 2009), and the increasing scarcity (and therefore prices) of critical natural resources (Kinver, 2011).

The GFC was an opportunity for politicians to make the essential structural reforms required to increase economic efficiency, social equity and environmental sustainability. Instead most governments chose to reinforce the status quo, buying (socializing) the bad debts of major financial institutions and loaning them trillions

of dollars at rock-bottom interest rates. This flood of cheap credit again encouraged investment in speculative assets and accelerated the concentration of wealth. Weak economic growth was restored by rapidly increasing public and private debts on one side, in order to inflate massive asset bubbles on the other (Cohan, 2010).

The failure to address underlying problems means that the global economic crisis is not over (Sauga, 2014). Economic inequality (Piketty, 2014) and unemployment (ILO, 2014) are growing in tandem with economic stagnation and asset and debt bubbles (Heinberg, 2011; Hesse & Seith, 2013). The combination of stagnating real growth and the increasing inability of billions of consumers to afford rising prices and debts make another financial crisis inevitable. Since many governments are now running out of fiscal tools for stimulating economic growth, the next financial crash has the potential to overwhelm global financial institutions and throw the world economy into an ever-worsening depression (Holmgren, 2014).

In addition an expanding global population will experience growing water and food shortages triggered by depleted aquifers, overdrawn rivers and climate change (Brown, 2012). Many key food producing regions are at risk: e.g. in India, Pakistan, Iraq, Iran, China, US and Mexico. Rising food prices will hurt the poorest most, increasing hunger and economic inequality. As a consequence social conflicts are likely to intensify within and between developing states (Khadka, 2012).

Although the combination of a weakening global economy and increasing supplies from unconventional sources may reduce fossil-fuel energy prices in the near future, over the next ten years prices are likely to steadily rise due to the increasing costs of accessing supplies of oil and gas, and additional costs associated with mitigating air pollution and CO2 emissions (Hall et al., 2013).

Although experts disagree on the exact timing, peak oil production is likely to be reached sometime in the next 5-15 years (Hughes, 2013). Rising energy prices will in turn drive up the cost of food and other essential commodities, and reduce economic growth (Korowicz, 2010; Moriarty & Honnery, 2012a; Kerschner et al., 2013). In the next couple of decades shortages of many critical minerals are also likely to develop, causing prices to rise steeply (Christmann, 2013). These issues have the potential to end global growth and trigger a deepening global depression (Ahmed, 2013).

The ability of the global system to manage these problems is limited due to weak systems of governance. Some examples are “the failure of the commons”—the lack of international laws governing transboundary issues such as the atmosphere and the oceans; and “the democratic deficit”—the lack of public accountability and legitimacy of key international institutions such as the International Monetary Fund, the World Trade Organization and the United Nations’ Security Council (Chase-Dunn & Lawrence, 2011).

Tipping points: breakdowns and breakthroughs

The loss of productive land (due to spreading cities, topsoil erosion and desertification), productive oceans (due to overfishing, acidification and pollution), productive forests and biodiversity (e.g. pollinators) is having increasingly negative economic and social impacts (UNEP, 2012). Tipping points are being reached in many countries: e.g. in China awareness is growing that business as usual frequently produces more environmental and health costs than economic gains (Al Jazeera, 2013).

Every year rising temperatures, increasingly extreme weather, and acidifying oceans are causing more environmental and economic damage (World Bank, 2014). These events (combined with shocking images—e.g. of an ice-free Arctic ocean) will help convince the vast majority of humanity that climate change is a real and an immediate threat to their economic security and quality of life. By 2020 the scientific evidence will be clear that dangerous climate tipping points have been passed, and that if unchecked runaway climate change will inevitably collapse the global economy (Spratt & Dunlop, 2014; Milman, 2014).

Within 5-10 years this destabilising combination of worsening economic crises, growing resource shortages, increasing social inequality, and rising prices will likely cause (a) a deepening global depression (Korowicz, 2012); (b) an increasing loss of faith in existing institutions; and (c) rising social tensions and conflicts. Conflicts will probably be worst in countries with the least economic and political resilience (CAN, 2014).

The Global Financial Crisis demonstrated that economic and social shocks cause people to question the status quo and seek political and economic alternatives (e.g. Carlin 2013). We can expect these trends to continue: worsening crises will increase polarisation between reactionary forces seeking a return to a better past; and progressive forces proposing new, sustainable economic and political models (e.g. Jackson, 2009).

The crises will also accelerate the development and introduction of constructive solutions: e.g. more efficient and socially beneficial patterns of production and consumption (UNEP, 2014).

In the coming 5-10 years existing renewable energy technologies (e.g. solar) will become increasingly cost effective, creating tipping points that will rapidly shift investment away from fossil fuels towards cleaner energy sources (IRENA, 2014). In the coming decades more resources will also be spent on increasing energy efficiency and developing and commercialising new energy sources—e.g. algae biofuels and safer nuclear power (Moriarty & Honnery 2012b).

In response to water shortages and the rising costs of energy, fertilisers and pesticides, farmers are increasingly likely to adopt sustainable, holistic and organic methods. In addition, efforts will be increased to reduce food spoilage and waste, and more hybrid and genetically-modified crops will be introduced with the ability to withstand extreme weather conditions and resist diseases and pests (Brown, 2012; Foley 2014).

By 2020 it will be obvious that climate change is causing progressively more and larger crop failures and famines. This may cause many governments to consider using geoengineering to stop and reverse global warming. However, this will not only have unintended consequences (e.g. some countries will benefit; some will be worse off), but because geoengineering will not stop carbon emissions, the oceans will continue to acidify, a process that may eventually kill off most species of marine life (IGBP et al., 2013).

The growing environmental and economic crises, if unchecked, will provoke intense international debates that will sharply increase global awareness. For example, debate over the introduction of geoengineering will likely produce both a general recognition that humanity is facing a global emergency, and that climate change is a systemic problem with multiple environmental, economic and social dimensions.

Global structural change will be a complex and contested process (Hursh & Henderson, 2011), lasting decades. Essential reforms—e.g. empowering millions of poor farmers (Oxfam 2011)—will be resisted by vested interests. However, once the process of transforming our unsustainable global economy into a sustainable system has begun, the pace of change will accelerate, with decisive shifts likely to take place before 2035 (Gilding, 2012).

The successful transformation of our unsustainable consumer society into a sustainable consumer society will require a paradigm shift in views, values, institutions, economic processes, and technologies (Beddoe et al., 2008). One of the main drivers of this shift will be the inescapable need to reduce global consumption to sustainable levels (i.e. to within our planet's carrying capacity. Eric Assadourian points out that while economic contraction is inevitable, it will either take place as a process of brutal collapses forced by growing shortages of critical resources, or as an intentional process of planned and controlled degrowth (Assadourian 2012).

In my view future events are likely to develop in an uneven fashion: our current institutions will initially resist change, but as global crises worsen and change becomes unavoidable, more and more constructive interventions will be made.

The general process of collapse and transformation

Different types of crises develop at different speeds and have different impacts. For example, while major environmental crises (e.g. climate change) tend to develop more slowly than financial crises, they will have more significant and longer-lasting impacts.

I believe the following scenario is likely:

- 1) Crises are worsening due to interacting problems (Korowicz, 2013):
 - growing economic crises (e.g. global financial failures; increasing unemployment and poverty);
 - growing social crises (e.g. growing inequality; increasing political polarisation);
 - growing environmental crises (e.g. climate change; collapsing fisheries);
 - growing resource shortages (e.g. of water; food; cheap energy; critical minerals).
- 2) Governments and businesses will initially respond by denying the existence of structural problems and engaging in short-term crisis management (e.g. supporting failing financial institutions; stimulus programs).
- 3) As more and more people are negatively affected by growing crises, they will lose faith (and economic stakes) in existing institutions (Greer, 2013).
- 4) Global awareness of the need for fundamental structural changes will increase (e.g. for taxation policies that support environmentally and socially beneficial outcomes). Knowledge of sustainable alternatives will also spread (e.g. the circular economy).
- 5) The combination of growing crises and growing awareness will lead to political shifts. While these will at first be small-scale, sectoral and regional in nature, increasingly movements for change will link up to form national and international coalitions focused on systemic transformation.
- 6) Tipping points will be reached when a critical mass of credible political and business leaders realise that: environmental, economic and social crises are rapidly worsening; these crises cannot be managed with conventional methods;

structural change will be necessary for civilisation to survive; for this to happen power will have to be devolved and shared with emerging popular movements (Lütkenhorst et al., 2014).

- 7) The response to growing environmental problems, resource shortages and economic and political crises will take two main forms: proactive (supporting constructive change) and reactive (reinforcing business and usual and repressing change). The relationship between these forces will determine the length of time it takes to transform our unsustainable consumer society into a sustainable consumer society.
- 8) Because some governments, businesses and elites will support structural change and others will attempt to maintain the status quo through various forms of manipulation and repression (Morgan, 2013), the process of global transformation will be uneven, involving rapid constructive change in some places and civil wars and international conflicts in others (Homer-Dixon, 2006)
- 9) The challenge is to develop and spread transformational views, values, organisations and technologies in order to reduce conflicts, accelerate the pace of constructive change and minimise environmental and social destruction (Riedy, 2013; Ehrlich & Ehrlich, 2013). Personal transformation is essential for societal transformation: the shift from ego-system to eco-system awareness (Scharmer & Kaeufer, 2013).

Background theories (the BEST model)

Societal systems are organised around world views (views of reality/metamodels). Successful world views organise congruent cultures, social institutions, economic processes and technologies into coherent, viable systems capable of extracting and processing vital information, energy and raw materials from their environments (Taylor, 1999).

A crisis develops when a society is no longer able to meet its essential needs due to factors such as exhausting its supply of raw materials; and/or disruptive developments (e.g. war; social breakdown due to growing inequity; the emergence of revolutionary ideas). At this point the society must either collapse or develop new structures able to overcome the challenges: e.g. find new or more efficient ways of accessing resources; and/or create more functional cultures, social institutions and technologies.

We are now in a global crisis: our two hundred-year old industrial world-view has become not only obsolete, but destructive. Its expansionist views, values and institutions—which worked well in a world of few people surrounded by rich unexplored resources—are increasingly dysfunctional in a world where many people are competing for increasingly scarce resources. Because the industrial world-view lacks the systems perspective needed to understand complex socio-ecological dynamics, our global system is unable to diagnose and fix its most serious problems. And because many of the changes needed to create a sustainable system will weaken the power of existing elites, their usual response to crises is reactive rather than proactive: the application of short-term fixes that avoid the need for structural transformation (Taylor & Taylor, 2007).

In order for our advanced civilizations to survive, we now need to reorganize our cultures and institutions around a holistic (systems-based) paradigm. Fortunately

systems-based views, values and technologies are now emerging that have the potential to organise a sustainable global system (i.e. to create a new system attractor). We are developing a more complete understanding of how human systems function—e.g. of the psychological requirements of healthy human cultures—that will allow us to design useful interventions (Taylor, 2008).

The globalisation of both trade and the Internet is a double-edged sword: on one hand it is difficult to contain economic and political crises in an interconnected and interdependent global system; on the other hand the rapid spread of news and knowledge supports and catalyses constructive change.

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