

THE BREAKDOWN OF GLOBAL CAPITALISM: THE FUTURE OF BUSINESS UNDER A COLLAPSITARIAN SCENARIO

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ABSTRACT

The world is currently confronting some extraordinary environmental problems for which available evidence suggests potentially catastrophic outcomes under a 'business-as-usual' economic regime. By 2020, we may be facing a tipping-point leading to irreversible and catastrophic consequences on a global scale. Such anticipated, and inter-related, issues as climate change, degraded soil fertility, peak oil, water scarcity, food shortages, and population growth point to a global economic system that has severely overshoot ecological sustainability. There has been considerable heated debate over the likely global outcomes ranging from climate change sceptics who view the science as fraudulent and perceive no adverse consequences, to 'collapsitarians' who anticipate by 2050, the plenary collapse of global capitalism, and subsequent violent conflict and death on an apocalyptic scale. This paper reviews the literature and data underlying the collapsitarian scenario, and considers the consequences for business in the coming decades, if this view proves to be correct.

INTRODUCTION

A convergence of two ecological phenomena appears to be extant and concurrent; firstly, rapid increase in the size and affluence of human population with consequential demands for food, water, energy, and consumer goods; and secondly, rapid decrease in the Earth's biocapacity to supply those demands. Science is backing the anecdotal evidence that we are being accosted by a recondite conundrum involving climate change and resource scarcity that threaten to overwhelm governments, institutions, and societies. Only in very recent years has the climate science began to crystallise pointing to the perils that confront the global community, the urgency of requisite action, and the potentially dire consequences of insufficient mitigation and inadequate adaptation.

With nearly half a billion people already living in drier, often over-populated and economically repressed regions, the effects of climate change and resource depletion pose severe risks to political, economic, and social stability to many countries. In less developed countries, where there is a general lack of resources and capabilities required for rapid adaptation, climate change effects are likely to be exacerbated. For many countries, climate change and resource scarcity is promising to morph into such a challenge that violence and mass migration may be the denouement for desperate people seeking survival.

Even skeptics generally accept that the Earth's climate is changing, but remain doubtful of the cause (see, for example, <http://scienceandpublicpolicy.org>). The most high-profile skeptic in recent times has been Viscount Monckton of Brenchley, who has opined that "'global warming' is unlikely to be dangerous and extremely unlikely to be catastrophic" (Monckton 2007, p.15). In the public arena, there is widespread consensus that climate change is occurring (about 80 percent of Americans, Europeans, and Australians believe that climate is changing), but there is also considerable polarization as to the cause (40-50 percent

of people believe climate change is being caused by human activity, while another 30–40 percent believe it is part of the Earth’s natural cycle) (Leiserowitz *et al.* 2011; Leviston & Walker 2011; Park *et al.* 2011).

Anxiety among politicians and policy makers is accruing over the projected scenarios of gradual global warming, and as such, initial attempts are in progress to limit detrimental human influences. However, these efforts may be insufficient, or may not be implemented in sufficient time. Rather than gradual warming over decades, recent evidence exhorts the possibility that a far more dire climate scenario may actually be unfolding. Within this context, it is noticeable that much of the current dialogue on climate change is focused on mitigation (i.e., what needs to be done to circumvent catastrophic outcomes). Too little debate, however, has been concentrated on adaptation (i.e., dealing with the consequences) (Lovins & Cohen 2011).

This paper does not provide recommendations to return the world to sustainability. Rather it attempts to understand the ‘collapsitarian’ perspective, which champions the lucid possibility that climate change and resource depletion will likely result in catabolic global economic collapse because of malfeasant influential forces, ineffective institutions and political leadership, emasculated academia, corporations focused on short-term profits, and communities mired in unsustainable lifestyles. Under the collapsitarian scenario, regionalized degeneration of the social order, devolving into widespread conflict and violence, is the imagined outcome. Consequently, this paper seeks answers to three fundamental collapsitarian questions: (1) When might we expect the collapse of global capitalism?; (2) What are the symptoms of global collapse?; and, (3) What is the future for business under a collapsitarian scenario?

GLOBAL CAPITALISM

Market capitalism is an economic system in which business is conducted by independently managed enterprises that set their own strategies, objectives, and policies so that they choose the products or services to supply, where to market them, and at what price to sell (Bower *et al.* 2011). When this system is supported by a platform of open-border trading, then market capitalism becomes wedded to globalism in a world “characterized by networks of connections that span multi-continental distances” (Nye 2002, p.1); global capitalism is then the outcome of the marriage between markets and free trade.

Global capitalism probably had its origins in the pre-BCE religious diaspora of Buddhism, and the post-BCE spread of Christianity and Islam. Elementary global capitalism can be traced to Mediterranean trade from about 1,300 BCE (Attali 2011). More mature economic globalism was evident from the 14th-century trade networks linking England with China, extending through France, Italy, and Egypt, and then via the Silk Road through Central Asia, or via the Red Sea, Indian Ocean, and the Straits of Malacca (History of Globalization 2011). However, deliberate government policies and technological developments since the end of World War II radically spurred increased international trade and investment, to the extent that the volume of global trade increased 34-fold between 1950 and 2010 (see <http://www.just1world.org>).

While globalism has tended to be defined within a strictly economic/capitalist framework, there are other significant dimensions to be considered, such as social and ecological globalism (Nye 2002). Economic globalism (or what we colloquially refer to as ‘globalisation’) is “the production and distribution of products and services of a homogeneous type and quality on a worldwide basis to customers whose tastes and preferences are similar and converging” (Mahoney *et al.* 2001, p30) - an innocuous and abstract statement inferring Ohmae’s (1994) ‘borderless world’, but one that fails to allude to the complexities of such a system, and the fallout from such a proposition on globalism’s social and ecological dimensions. Indeed, the style and form of global capitalism that now surrounds us was never expressly designed, but instead, evolved in parallel with the needs of market transactions and excess capital (Bower *et al.* 2011;

Harvey 2011). It emerged post-World War II as an experiment concocted to reconfigure the global economic landscape, contemporarily obliterating any connection to social and ecological milieu.

From the 1980s, with the fall of socialism and the remorseless logic of ultra-libertarian ideologies associated with the Reagan and Thatcher eras in the US and UK respectively, global capitalism was driven by economic dogmatism, surreptitiously imagined as an economic perpetual motion machine; one producing massive output from apparently little input, especially when externalities, such as environment and society, are excluded from the analysis. Economists, in fomenting the notion that some corporate inputs (such as air) and some corporate outputs (such as waste) are free gifts bequeathed by nature, have covertly driven private profits at public cost to both present and future generations.

We have now entered a unique historical period in which global capitalism may implode due to the inexorable forces of affluence, hedonistic consumerism, and communities mesmerized to paralysis by the unfolding ecological crisis (Orlov 2006). We are likely on the edge of what Gladwell (2002) calls a 'tipping point'; Laszlo (2010), a 'chaos point'; and, Thurow (1996, p.326), a period of "punctuated equilibrium".

COLLAPSITARIANISM

The term 'collapsitarianism' has been attributed to the American social critic James Kunstler (see Kunstler 2005), who stated in 2009 that "I've never been a complete collapsitarian" (McGrath 2009, p.40), in reference to the work of Dimitry Orlov, who made extensive use of the word 'collapse' in his treatise on the future of global capitalism (see Orlov 2006). Collapsitarianism has since been associated with dystopian groups and triumphant pessimism, fostering a 'wish' for, more than a 'belief' in, impending plenary global economic breakdown (Heffernan 2009).

Orlov (2006) is one such collapsitarian who expressed a pessimistic view of the future of global capitalism. He viewed the pre-1700s tragedy of Easter Island as a microcosm of humanity's future, and proffered a subsistence lifestyle and self-sufficiency as an insight into the future of humankind; or what McGrath (2009, p.40) noted as "bourgeois survivalism". Kingsnorth and Hine (2009), following Orlov's (2006) apotheosis of global collapse, argued that 'uncivilisation' is the appropriate segue to the future, involving a simplification of lifestyle, and a reconnection with nature. They view the global economic system as an "empire corroded from within" (p.3); our path so far, one of mythological progress; and, the current status, "proof not of our genius but our hubris" (p.6). While the collapsitarian perspective on global capitalism is one of catastrophic breakdown, and is heavily influenced by dystopian ideologies, there is also considerable evidence that the basis upon which the perspective rests cannot easily be discounted. The next section outlines the unsustainability of the ecological and social dimensions of globalism.

GLOBAL ECOLOGICAL OVERSHOOT

The United Nations Brundtland Commission of 1987 offered the initial definition of 'sustainable development' as humanity's ability to "ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland 1987, p.3). The Brundtland Report also provided an early 'call for action', including a new era of economic growth, equity for the poor, greater democracy in international decision-making, and a notice that the "affluent adopt life-styles within the planet's ecological means". The report warned: "sustainable development can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem" (p.3). Since the release of the Brundtland Report, then, how 'harmonious' has our development actually been?

Both global energy consumption and carbon dioxide emissions increased radically from the 1960s, and continue to do so. Table 1 shows that the rate of increase of energy consumption per person stabilised in the 1990s, but again accelerated after 2000 in a period of rapid economic growth, considerably leveraged off China's development. Figure 1 demonstrates that, in the 1990s, global carbon emissions grew by only 1 percent per year, while 2000-2008 carbon emissions increased by over 3 percent per year. Hence, the data indicates a fundamental and critical linkage between energy consumption, carbon emissions, and economic growth.

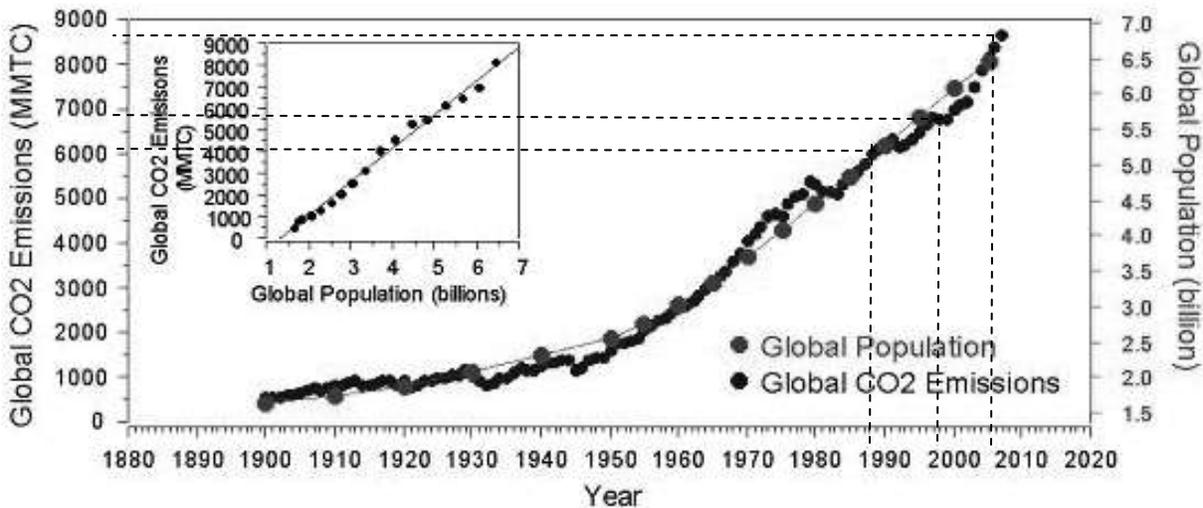
TABLE 1: ENERGY CONSUMPTION PER PERSON (TONNES COAL EQUIVALENT PER PERSON)

	<u>1966</u>	<u>1990</u>	<u>2000</u>	<u>2005</u>
Developed countries	4.5	7.3	7.1	7.2
Developing countries	0.3	1.0	1.2	1.5
World	1.6	2.5	2.5	2.7
World increase per year		3.8%	0.0%	4.0%

Source: Schumacher (1999/1973, p.13); WRI (2012)

Figure 3 proposes three scenarios for future ecological footprints as imagined in the year 2000. Superimposed on the scenarios is the actual 2000-2010 trajectory, which indicates a situation considerably worse than the worst case anticipated in 2000; rather than 'moderate business as usual', growing affluence and rampant consumerism has accelerated the ecological duress on the global system. Living Planet Report 2010 anticipates the current trajectory requiring 2.0 planet Earths by 2030, and 2.8 planets by 2050, assuming the conservative 'business as usual' scenario from 2010 which proved an entirely inaccurate assumption previously.

FIGURE 1: GLOBAL POPULATION VERSUS CO₂ EMISSIONS: 1900-2010

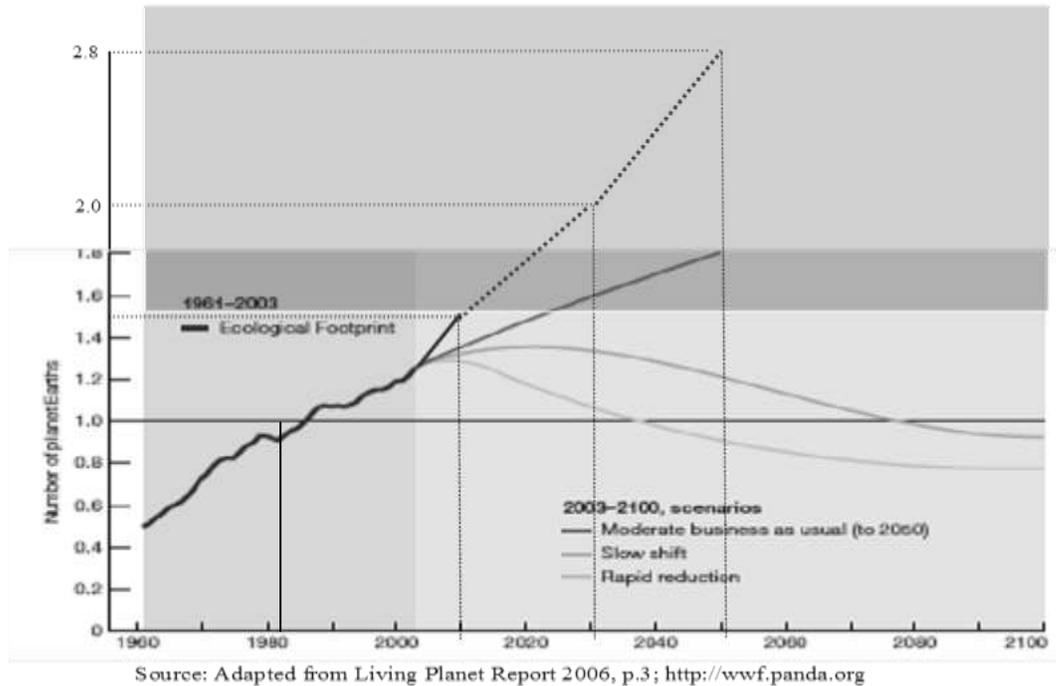


Source: <http://www.keebiaparkshs.eq.edu.au/EUREKA2009-tidalpower/BackgroundInformation.htm>

The foregoing discussion profoundly points to the crux of the world's current conundrum. Since 1985, humanity has demanded more than the Earth has been able to provide, and consequently, the Earth has

been in an ‘overshoot’ trajectory leading increasingly further from sustainable development (Laszlo 2010; Meadows *et al.* 2005; Wackernagel *et al.* 1997). The manifest symptoms are climate change, water shortages, overgrazing, soil erosion, desertification, deforestation, reduced cropland productivity, and collapse of fisheries (Global Footprint Network 2010). Most worryingly, the ecological overshoot has accelerated since 2000, during a period of intensifying debate on the dangers of this very course of action!

FIGURE 3: ECOLOGICAL FOOTPRINT SCENARIOS



The unsustainability of escalating global ecological overshoot will be felt as incremental foreshocks, which will increase in scale and frequency (Homer-Dixon 2006). These may take the form of severe climate events, drastic commodity price fluctuations, localized social disorder, or global financial crises. Indeed, one innocuous foreshock could indulge a string of events culminating in catastrophic outcomes; for example, a severe drought in one locale may lead to food and water shortages, rising prices, civil conflict, and mass migration. Taleb (2007) brought this phenomenon to our attention as ‘black swan’ probability. Likewise, Gladwell (2002) reminded us that a tipping-point is the precursor to outcomes that are massively disproportional to the tipping-point event. Both have drawn on the work of Lorenz (1993) who warned of the ‘butterfly effect’ involving sensitive dependence on initial conditions; “does the flap of a butterfly’s wings in Brazil set off a tornado in Texas?” (p.181).

Back in the 1960s, Hardin (1968), at a localized level, offered a profundity that has far-reaching analogous consequences for current ecological overshoot. In admonishing the ‘tragedy of the commons’, he pointed to a dilemma in which people’s short-term self-interest is contrary to long-term social interest and the common good. As Hardin noted for cattle herders, “each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all” (p.1244); that is, the freedom of unconstrained consumption has led to the ruin of the global commons.

GLOBAL RISK FACTORS

Consequential to global ecological overshoot, the World Economic Forum (WEF 2011) recently identified 37 risks that are either 'likely' or 'very likely' to eventuate between 2010 and 2020. The economic impact of the 37 risks is estimated to be approximately US\$16 trillion, or an average of US\$1.6 trillion per year, representing 2.5 percent of 2010 global GDP (i.e., US\$63 trillion). Given that global GDP grew by an average of 2.73 percent per year 1990-1999, and 2.69 percent per year 2000-2010, economic growth in the coming decades is unlikely to meet global human development expectations, especially since market capitalism requires average compound growth of at least 3 percent per year to secure long-term survival (Harvey 2011).

The major polemic of global capitalism is that politicians, academics, and corporations have wedded us to 'growth' in all aspects of human existence. It has been semantically linked to 'progress' and 'development' at the international and national levels, and to 'success' at the corporate and individual levels. Kohr (1957, p.155) observed long ago that "instead of growth serving life, life must now serve growth, perverting the very purpose of existence". In more recent times, Heinberg (2011) has predicted that economic growth is at an end, and will ultimately be replaced by a steady-state economy, and the inherent dysfunction economic anomie entails.

Global risks, then, are promising to undermine the very basis upon which global capitalism is founded – that is, growth. Several of the most significant global risks are discussed next. These include human population, food and water insecurity, energy scarcity, and migration.

Human Population

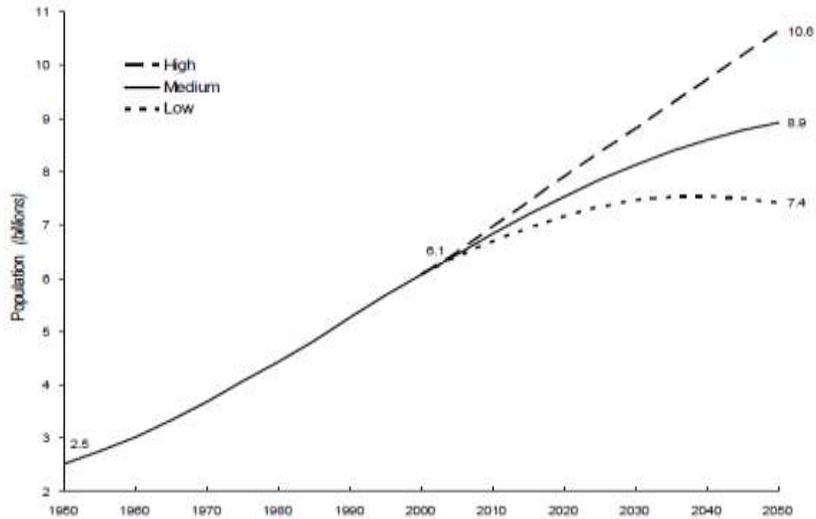
Thomas Malthus (1798/1803) contended that populations expand in times when, and in regions where, the bounty from the land is plentiful until such time as the size of the population causes ecological stress; "The vices of mankind are active and able ministers of depopulation. They are the precursors in the great army of destruction, and often finish the dreadful work themselves. But should they fail in this war of extermination, sickly seasons, epidemics, pestilence, and plague advance in terrific array, and sweep off their thousands and tens of thousands. Should success be still incomplete, gigantic inevitable famine stalks in the rear, and with one mighty blow levels the population with the food of the world" (Malthus 1798/1803, p.61). Malthus argued that populations may be held in check by either of two mechanisms: (1) Positive checks, which raise the death rate (e.g., famine, disease, war); and, (2) Preventive checks, or 'moral restraint', which lower the birth rate (e.g., celibacy, birth control, postponement of marriage).

The Malthus thesis appeared to break down in Western countries in the 1800s because of the effects of the Industrial Revolution on productivity and economic growth (Bernstein 2004; Kunstler 2005). From this time, population growth generally tracked increasing agricultural productivity. However, current trends in population growth and declining biocapacity may well couple to demographic entrapment to accrete the Malthusian scenario in modern times, as indeed it did in Rwanda in the 1980s-90s (see discussion below).

Based on population growth data (see Figure 4) and neo-Malthusian beliefs, Ehrlich (1968, p.i) predicted that "the battle to feed all of humanity is over. In the 1970s hundreds of millions of people will starve to death in spite of any crash programs embarked upon now. At this late date nothing can prevent a substantial increase in the world death rate". He argued that human population was already excessive in the 1960's, and that negative consequences of overpopulation, such as famine, disease, and social disorder, were inevitable. Since 1970, world population has doubled from 3.5 billion to 7 billion, and continues at a growth rate of about 75 million per year (see <http://www.worldometers.info/world->

population/), leading to the prediction in 2004 that world population will be 7.4-10.6 billion by 2050, with developing countries growing by 58 percent and developed countries by 2 percent (UN 2004). Given that the world passed the 7 billion mark on 31 October 2011 (UN 2011), the 2050 ‘high’ trajectory appears to be the more likely scenario. While Ehrlich’s dire prediction for the 1970’s was obvious wrong, the preventative mechanism was accelerated exploitation of the environment; in other words, the world averted cataclysm with cheap oil, and on ‘ecological credit’.

FIGURE 4: GLOBAL POPULATION, 1950-2050

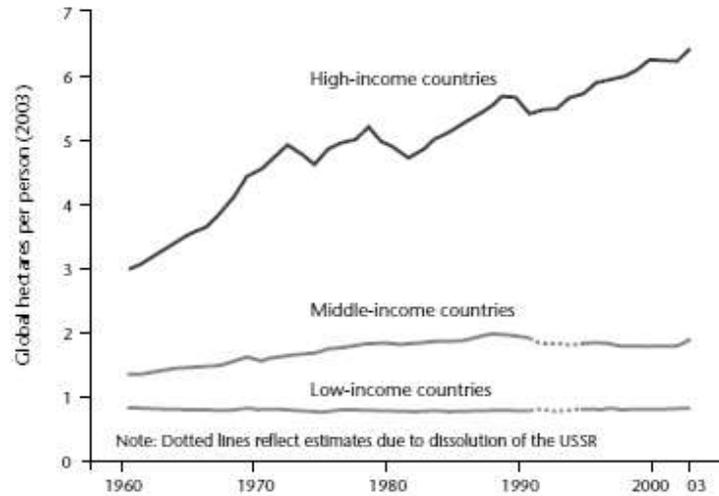


Source: UN 2004

Others argue that overpopulation is not the fundamental problem; rather it is massive overconsumption by affluent countries, and growing affluence in developing countries (see, for example, Angus & Butler 2011; Foster et al. 2010). For instance, despite China having predominantly stabilised population growth with its ‘one child policy’ since 1979 (2000-2010: 0.57 percent per year; ‘The most surprising demographic crisis’ 2011), its energy consumption continues to increase at a rate of 5.2 percent per year (‘China’s coal consumption continues to rise’ 2012) because of increasing affluence.

Meanwhile, the world’s population continues to increase at a rate of 75 million per year, with 70 million people per year ingressing a middle-income bracket (US\$ 6,000-30,000). This phenomenon is expected to continue for the next 20 years, accelerating to 90 million new middle-income consumers per year by 2030 (WBCSD 2008). By 2050, then, and following current projections, 2 billion additional people will have joined the ranks of the middle class, whose consumption patterns will more closely resemble those of high-income countries (see Figure 2).

FIGURE 2: ECOLOGICAL FOOTPRINT BY INCOME CATEGORY, 1960-2003



Source: WBCSD 2008, p.9

The accruing evidence is pointing to a dual quandary related to human population demands: (1) growth (biological), and (2) affluence (social); neither of which would necessarily prove devastating for human existence if it was not for the problems associated with future supply, as discussed next.

Food and Water Insecurity

World average calorie consumption has risen from 2,550 calories per capita per day in 1980 to 2,800 in 2002; an increase of 0.4 percent per year driven by increasing consumption of protein and fat in developed countries (UNFAO 2006), and sustained by the luxury of cheap fossil fuels and government subsidies (Lovins & Cohen 2011). In the meantime, the United Nations Food and Agriculture Organization indicates that there are about 740 million undernourished people in the world (UNFAO 2012); this number is likely to increase significantly by 2030, given the projected 50 percent increase in demand for food (WEF 2011). In parallel, the US (currently the world's biggest agricultural exporter) will cease to be a food exporter because of domestic demand for food and biofuels by 2025 (Ruppert 2009); for example, biofuel production is expected to double merely in the period 2009-15 (Lovins & Cohen 2011).

Clay (2004, p.8) highlighted the paradox between growing agricultural consumption and declining soil productivity; "the two trends are on a collision course". China and India will each lose about 10 percent of their cropland by 2050 (Nelson et al. 2010). Likewise, agricultural production in Africa declined by 0.4 percent in the period 2000-4 (UNEP 2007a), and is projected to decline by up to 50 percent by 2020 and 90 percent by 2100 (Lovins & Cohen 2011). Globally, 5-7 million hectares of cropland are lost annually; if this trend continues, then by 2050, 2.7 billion hectares would remain to support 10 billion people, or 0.27 hectare per person (Laszlo 2010, p.39). Given that 0.15 hectare per person is the benchmark merely for subsistence-level survival (Pottier 1993; Uvin 1998), declining soil productivity is promising to become a critical global risk. Consequential to rising demand and declining productivity, global prices for staple foods, such as rice, wheat and maize, are expected to increase by up to 60 percent by 2030 (Hertel et al. 2010), and 100 percent by 2050 (Nelson et al. 2010).

Angus and Butler (2011), on the other hand, contend that the world easily has the capacity to produce sufficient food for a projected population of up to 10 billion by 2050. Indeed, the world produces sufficient grain alone to provide every person with 3,500 calories per day. The problem is not the quantity produced, but rather, the uses made of that food, which leads to food disparity between the daily availability of 4,000 calories per person per day in developed countries, and the 2,500 calories per person

per day in developing countries; what Neumayer (2006, p.204) calls “eco-fascism”. The food disparity is associated with wealth disparity, but apart from the unconscionable outcome implied, there is also the conversion of grain to biofuels and meat (40 percent of all grain harvested is used to feed animals), and post-harvest losses of 15-30 percent. In others words, the world's food system is currently “grossly inequitable, wasteful and inefficient” (p.77).

Water insecurity is also proving a looming quandary. Vorosmarty *et al.* (2010) found that 80 percent of the world's population (approximately 4.8 billion people) is currently exposed to high levels of threat to water security, which will be exacerbated in coming years, given the expected 30 percent increase in demand for water by 2030 (WEF 2011). UNEP (2007a, p.11) suggested that, “about 1.8 billion people will be living in countries or regions with absolute water scarcity by 2025 and two-thirds of the people in the world could be subject to water stress”.

Energy Scarcity

Between 1960 and 1989, oil was discovered at a rate of more than twice the amount consumed. However, between 1990 and 2006 only about 50 percent of the oil consumed was found in extractable deposits (Lovins & Cohen 2011). Consequently, 'Peak Oil' is speculated to have occurred during the period 2005-8 (Deffeyes 2003; Worth 2010); that is, production plateaued despite increasing prices. Ruppert (2009) reported that world oil production is currently declining by 4-9 percent per year. Heinberg (2011) used the 'Peak Oil' thesis to suggest that the future will be one of soaring energy costs as resource extraction becomes increasingly difficult and expensive. As such, the price of oil is speculated to increase to over US\$300 per barrel by 2020 (Worth 2010); an increase of at least 300 percent from US\$100-115 per barrel in early-2012, or about 35 percent per year (see <http://www.oil-price.net>). Rising energy costs infers rising food costs because of the intervening variables of fertilisers, pesticides, and transportation.

WEF (2011) predict that there will be a 40 percent increase in demand for energy by 2030, of which over 75 percent is expected to be met through fossil fuels, especially coal. Within the context of this degree of increasing demand, Ruppert (2009) suggests that the world may reach 'Peak Coal' by 2025. Zaipu and Mingyu (2007) empirically concluded that China's coal production will peak and start to decline from about 2025.

Migration

Some imagine the period to 2050 evolving in a way that is very different from the catastrophic 'population bomb' concept of the 1960s (see Ehrlich 1968). What is imagined is more akin to 'population cluster bombs', as social disorder emanates in poorer regions, such as Africa, South Asia, and Central America, that have high birth rates, and remain mired in poverty, disease, illiteracy, and/or government dysfunction (Revkin 2007). Christian Aid (2007) suggests that “on current trends, a further 1 billion people will be forced from their homes between now and 2050” (p.1), including climate change victims escaping war, urban ghettos, ethnic persecution, and natural disasters, as well as those pushed aside to make way for dams, roads, and other large-scale development projects.

Hence, the evidence indicates that escalating demands by human population are colliding with decreasing supply of food, water, and energy (Guterres 2009; UUNO 2011). By 2030, the cost of staple food is expected to rise by up to 60 percent, and oil by 300 percent, while over 5 billion people may be suffering water stress. Under these conditions, mass human migration is expected as desperate people seek survival. But, what will be the reaction of people in better-off countries to the migration of perhaps another 1 billion people into their territories? At what point does immigration become intolerable?

VIOLENCE: THE ULTIMATE SOLUTION?

Zhang *et al.* (2007), in a study of the historic impact of climate change in the northern hemisphere from 1400 to 1900, found a strong temperature-war correlation, with the intervening variable being ecological stress. In the current milieu, they concluded that “global warming would likely cause disastrous results in human societies” (p.192).

In seeking more modern examples, Rwanda is tendered as a recent archetypal Malthusian trap, in which the population was led to extreme violence by ecological distress. From the 1980s, soil fertility in Rwanda began to fall sharply. This was caused by excessive deforestation, overcultivation, and consequently, soil degradation and erosion (Percival & Homer-Dixon 1996; van Hoyweghen 1999). In addition, the capricious climate created food shortages, as crops failed on a regular basis, including 1989-90, 1991, and 1993 (Andersen 2000; Destexhe 1995; Hilsun 1994; Pottier 1993). For example, the country’s maize production fell from 110,000 tonnes in 1983 to <100,000 in the early-1990s (10 percent decline in 8 years). Likewise, sorghum production (another staple in the Rwandan diet) declined from 213,000 tonnes in 1982 to 140,000 in 1989 (34 percent decline in 7 years). From the early-1980s to the early-1990s, per capita agricultural output fell by nearly 20 percent (Percival & Homer-Dixon 1996). The decline in food production led to dramatic decline in the calorie intake of the general population, from an average of 2,055 calories per person per day in 1984 to 1,509 in 1991 (Uvin 1998).

By the late-1980s, life in Rwanda bordered on the catastrophic. For instance, based on the criteria of a minimum farm size of 0.7 hectare being required to feed an average household of 5 persons, 43 percent of Rwandan farms lacked the minimum land, and hence, lived in a situation of chronic malnutrition (Uvin 1998). Pottier (1993) cites a study in the northern Gisenyi Prefecture in the late-1970s that found average farm size to be only 0.2 hectare. Indeed, as the Rwandan population increased the phenomena of “severe demographic stress” (Percival & Homer-Dixon 1996, p.270), and “demographic entrapment” (Bonneux 1994, p.1689), prevailed; that is, an overbearing population density entrapped by its country’s borders. By 1988, land scarcity was escalating social conflict, while land disputes were increasingly difficult to resolve (Andre & Platteau 1998). An unnoticed local “foreshock” (Homer-Dixon 2006, p.254) set in motion a series of events that ultimately led to genocide in 1994, and the deaths of almost 1 million people (Keane 1995; UN 2007). The Rwandan genocide has been described as “the most brutal, widespread, and systematic killing spree the world has ever witnessed” (Uvin 1998, p.49); “one of the most appalling bloodbaths of the 20th century” (Lemarchand 2000, p.1).

But Rwanda is not a lone modern example of social cataclysm induced by ecological distress and Malthusian entrapment. Faris (2009) observed the same phenomenon in Darfur in 2003; aggression “forged in a time of desertification, drought, and famine” (p.7). Likewise, Ban Ki Moon (2007, p.1) noted that “the Darfur conflict began as an ecological crisis, arising at least in part from climate change”. UNEP (2007, p.8) found that “competition over oil and gas reserves, Nile waters and timber, as well as land use issues related to agricultural land, are important causative factors in the instigation and perpetuation of conflict in Sudan”, and concluded that “there is a very strong link between land degradation, desertification and conflict in Darfur”. Similarly, Howard (1998) wrote of the insidious links between environmental degradation, rural-to-urban migration, and increasing conflict in Haiti. Scarcities of arable land, water, and forest resources quickly led to social disorder and civil strife; “Protests became riots, riots became increasingly violent” (p.7).

The cases of Rwanda, Darfur, and Haiti demonstrate that a Malthusian trap can emerge in developing countries that lack the resources to subvert the sorts of foreshocks that destabilize social order. Demographic entrapment can obviously be alleviated by mass migration, which occurred in Rwanda at the

time of the genocide. Interestingly, it was violence, rather than malnutrition, that induced the migration; during the genocide, 2 million Rwandans fled to the Congo, Burundi, and Tanzania (Caplan 2005; Pace 1995; Temple-Raston 2005). As such, the mass migration speculated due to the food, water, and energy insecurities resulting from climate change and resource depletion will likely manifest indirectly as a result of localised violence. As Schwartz and Randall (2003) note, humans fight when they outstrip the biocapacity of their natural environment; “every time there is a choice to be made between starving and raiding, humans raid” (p.17).

Our precarious future raises a question for survival: what mechanisms are currently available to mitigate the looming quandary of population demands and diminishing supplies of food, water, and energy? Perhaps elucidation lies with improved technology; leadership by institutions and policy makers; influence from academia; reformed corporations; or, changing community attitudes. Each of these possibilities is discussed next.

TECHNOLOGICAL POSITIVISM

While climate change and its associated issues appear to have gained the attention of most, many appear to believe that technological innovation driven by market forces will solve the problems. However, the problems we face today are not just the consequences of the failure of economics, but also our technological hubris. In other words, technology has been part of the problem, and is declining as a source of the solution.

Technology has been part of the problem because it has provided the rapid improvements to computer power, communication, and transportation that were conducive to mass production, and the evolution of hedonistic consumerism. In fact, the primary goal of technological innovation under global capitalism is to expand production and increase profits, rather than protect the environment. Moreover, “Jevon's Paradox” (Foster et al. 2010, p.170) demonstrates that, while technology facilitates greater efficiency and lower cost, consumption increases according to the insidious principle of supply and demand; as Kunstler (2005, loc.3297) observed “efficiency is the straightest path to hell”.

Technology is also declining as a source of the solution to the problem for two reasons. Firstly, we are witnessing the demise of Moore's Law as a guiding principle for technological innovation (Attali 2011). In accordance with Moore's Law, transistor density on integrated circuits has approximately doubled every 2 years since 1968. This phenomenon has driven improved computer functionality and performance, and decreasing costs for computer-based hardware (Intel 2005). However, a fundamental flaw in Moore's Law technological positivism is that it applies only to technology, and says nothing for the rate of advancement of innovations in other facets of human existence, such as energy, transportation, and food production (Heinberg 2011). Secondly, research and development (R&D) activity will likely decline in coming years, as companies seek less risky business strategies, and governments are constrained by declining tax revenues. Similarly, US military R&D expenditure is also likely to decline, which was the major driver of technological innovation from the 1970s (Heinberg 2011).

From an historical perspective, Toynbee (1947), in a study of the decline of past civilisations, noted that technological improvement was often occurring simultaneously with society decline; that is, technology has not, in itself, historically been a mechanism to support human development.

INSTITUTIONS AND LEADERSHIP

Global capitalism presupposes legitimacy and effectiveness in its governing institutions, so that stability and the rule of law are maintained, and at a local level, community services, such as health and education,

are provided. To aid the effective working of global capitalism, institutions and policy makers must not only be effective, but must also be trusted by the people to be so (Lorenzoni & Pidgeon 2006).

But, Tushman (1984) observed the incidence of ‘folly’ by policy makers that resulted in decisions and outcomes contrary to the interests of the public. Political folly is driven by ego, Faustian lust for power, preference for the status quo, and stubborn persistence even in the light of escalating dysfunction. Politicians are too often fixated on the next election and typically choose political expediency over resolving the truly difficult issues, unless crisis is immanent (Deeb 2011). The World Economic Forum ‘Voice of the People’ survey of 2003 concluded (WEF 2003, p.4): “The most troubling finding is that the principal democratic institution in each country (i.e., parliament, congress, etc.) is the least trusted of the 17 institutions tested; more than half of respondents felt distrust for global and large national companies, and political leaders”.

Bower *et al.*’s (2011) more recent study of business leaders also found great concern with the inadequacy of existing national and international institutions. International institutions were viewed as poorly managed, bloated bureaucracies, which, having emerged in the post-World War II era, had never been designed to cope with the scale or scope of global problems now looming. Likewise, WEF (2011) proffered ineffective global governance as one of the most significant global risks to 2020. For instance, international institutions have been highly ineffective in addressing the climate change issue. The most significant outcome at the recent United Nations Climate Change Conference in Durban in 2011 was an agreement for continued dialogue towards a possible legal framework by 2015. This follows the Kyoto Protocol of 1998, the Bali Action Plan of 2007, Copenhagen 2009, and the Cancun Agreements of 2010 (UNFCCC 2011). Overall, more than 15 years of climate change debate has, at best, produced weak agreements, lack of effective commitments, and abject failure (see <http://www.iisd.ca/vol12/enb12459e.html>; Orlov 2006).

SELF-EMASCULATED ACADEMIA

Universities were once the major repositories of information and knowledge that was largely inaccessible to the ‘unlearned’ (Menand 2010). In more recent times, however, information and knowledge has dispersed by virtue of the internet and social media, to the extent that it is no longer an esoteric value-adding characteristic of academia.

Menand (2010) notes the loss of respect, and subsequent rise of scepticism, for academic authority as early as the 1960s. This was driven by the over-specialisation of disciplines and disconnect from an increasingly complex and inter-disciplinary world. The genesis of the disconnect is suggested as emanating from a doctoral education system that socialises academics with skills and attributes that bear little resemblance to the most valuable of tasks which they need to perform; that is, “to write for a general audience, to justify their work to people outside their discipline” (pp.157-8). The post-1960s massification of higher education further lifted the veil on an elitist profession, and demystified the historical font of knowledge to imbue what we experience today as a crisis of institutional legitimacy. This crisis is exemplified by the degree of public scepticism for climate scientists evident in recent years (see, for example, Monckton 2007; Oreskes & Conway 2010).

More specifically, economics has failed to provide the theoretical framework and moral compass so desperately needed in the climate change debate, probably because of insidious collusion within the mainstream business milieu; what Chomsky (2011) observed as “conformist intellectuals”, and Foster *et al.* (2010, p.22) as “capitulation to the status quo”. Economics exemplifies the general academic propensity for a quixotic compulsion to embrace certitude from contextually isolated universities (Currie

et al. 2010; Gosling & Mintzberg 2006; Pfeffer & Fong 2002); a pervasive example of what Saul (1992, p.575) insightfully referred to as the “folly of professional dialects”.

REFORMED CORPORATIONS

Businesses are currently responding to the climate change issue by viewing it as a marketing and public relations opportunity. The 2011 report of the Carbon Disclosure Project (CDP 2011) notes that 85 percent of respondent companies are cognisant of “the sizeable opportunity to seize a market leadership position by mitigating their climate change effects and communicating their actions to shareholders and customers” (p.18); as Thurow (1996) observed, when it comes to the environment, ‘good capitalists’ will tend to do nothing because the future is discounted to favour short-term profits. Sophisticated marketing and advertising, aimed at bringing into being consumer wants that did not previously exist (Galbraith 2007), has inculcated our destructive overconsumption culture; product design based on disposability and planned obsolescence has fostered and validated waste; and, persistent lobbying of policy makers has distorted information flows to the public. This highlights that business is an unlikely liberator of a collapsing economic system; rather, it has been the primary protagonist (Angus & Butler 2011; Bremmer 2010).

Naisbitt (1994, p.12) foresaw a ‘global paradox’; “The bigger the world economy, the more powerful its smallest player”, in which case the ‘smallest player’ was defined as the ‘entrepreneur’. Naisbitt was right in imagining the emergence of individual actors as the power-holders under global capitalism, but he saw this in positive terms expressed as empowerment, innovation, and a counterforce to big business. What he failed to see was the negative aspects of individual power-holders, and the immense influence they could sustain over political systems as they pursue personal micro-agendas irrespective of social common good (Oreskes & Conway 2010). This aspect of the entrepreneur was highlighted by Garnaut (2011, p.7), who noted “the struggle between special interests and the national interest”. Similarly, Hamilton (2010) observed the existence of conservative think-tanks and influential lobby groups that are intent on blurring climate science, as well as the rise of “greenwashing” (p.82), in which corporations expend money on projecting an eco-friendly image, rather than focusing on the environment itself.

COMMUNITY ATTITUDES

A 2008 survey of consumers in Brazil, Canada, China, France, Germany, India, UK, and US, showed that only 53 percent were concerned with environmental and social issues, and even those were generally not prepared to spend more money to mitigate negative externalities. The World Business Council for Sustainable Development (WBCSD 2008) concluded that there is a substantial gap between consumer attitudes and consumer behaviour. While consumers demonstrate a significant degree of environmental and social awareness (e.g., ‘green’ consciousness; climate change), they generally show scant regard in their behaviour, lifestyle, and purchasing decisions.

Leviston and Walker (2011) found that over 40 percent of Australians believe climate change is the result of the Earth’s natural cycle, and hence, feel that lifestyle change is futile. Also in Australia, a community newspaper reported the results of a survey of local residents on their attitudes to climate change. Consistent with other studies, Australian respondents are generally prepared to make minor cost-neutral changes, but are reluctant to make inconvenient changes to lifestyle, or to expend more significant amounts of money. The survey concluded that “Readers will do things to save the world – as long as it doesn’t cost time, money or effort” (Yes, but not at any cost 2010, p.22).

In Europe, 27 percent think that the seriousness of climate change has been exaggerated, and 31 percent think that it is an unstoppable natural phenomenon (EU 2009). Park et al. (2011) reported that 37 percent

of British think many claims about environmental threats are exaggerated (up from 24 percent in 2000). The proportion who think it is 'definitely true' that fossil fuels contribute to climate change has fallen from 35 percent in 2000 to 20 percent in 2011; 43 percent agreed with the statement 'We worry too much about the future of the environment and not enough about prices and jobs today'; and, in order to protect the environment, only 26 percent were prepared to pay higher prices, 22 percent higher taxes, and only 20 percent were prepared to make any changes to lifestyle. The authors concluded that "It seems, generally, that people may be less likely to change their behaviour for the sake of the environment if this will cost them money, time or effort" (p.98). In addition, the authors highlighted growing scepticism and 'environmental fatigue'; "People, despite their exposure to mounting evidence concerning the negative future consequences of climate change, may have come to feel over time that climate change has little to do with them personally or their lives" (p.106).

For Americans in 2006, the most serious global concern was terrorism, followed by the war in Iraq. Concern about the environment ranked 13 out of 18 issues, just behind declining 'family values'. In the US, the environment is usually framed as a trade-off against economic prosperity. According to the survey, only 35 percent of Americans believe that climate change will lead to a change of lifestyle; 18 percent believe that technology will solve the problem; and, only 27 percent believe that, while climate change may be a problem, the US will most likely do nothing. When asked how much people were willing to pay to address climate change, the average amount was US\$21 per month overall; for electricity, 80 percent were prepared to pay an extra US\$5 per month, while less than 50 percent were prepared to pay an additional US\$15 per month (Curry *et al.* 2007). Leiserowitz *et al.* (2011), in a more recent 2010 survey, found that Americans remain sceptical of climate scientists; 50 percent believe that climate change is caused by human activity, while 33 percent believe it is a natural cycle; and, in any case, only about 10 percent believe that climate change will have any significant impact on them, their families, or their communities.

Lorenzoni and Pidgeon (2006), in a meta-analysis of climate change attitude surveys in Europe and the US, concluded that "laypeople have an ambivalent attitude towards climate change" (p.87), and "perceive it as a threat (and therefore potential danger) to others, those more vulnerable and/or future generations" (p.87); they noted "low salience of global warming and the persistent misunderstandings of the problem" (p.87).

Hardin (1968, pp.1244-5) observed back in the 1960s that "the individual benefits as an individual from his ability to deny the truth even though society as a whole, of which he is a part, suffers". People are reluctant to acknowledge that an accustomed way of life is unsustainable except in the face of prolonged, devastating failure, and often need a cataclysmic wake-up call to change social attitudes and behaviours (Attali 2011; Homer-Dixon 2006). In the case of climate change, the wake-up call may likely be way too late to avoid the world tipping over the edge into irreversible decline.

In summary, there is substantial and accumulating evidence that the world is in ecological overshoot, and that unsustainability is the hallmark of our economic, social, and ecological milieus. On the other hand, we appear able to place little credence in technology, institutions and policy makers, academia, corporations, or changing community attitudes to mitigate the fallout of our failing systems. Indeed, the evidence indicates that the collapsitarian scenario is one which cannot be easily discounted as a possible future outcome, and as such, due diligence by business leaders should dictate the imposition of three fundamental questions for the future. These questions now follow.

QUESTION 1:

WHEN MIGHT WE EXPECT THE COLLAPSE OF GLOBAL CAPITALISM?

According to the British Stern Review (Stern 2007), if the world continues in a ‘business-as-usual’ fashion, there is a 50 percent risk of global temperatures rising by more than 5 degrees Centigrade during the following decades, creating an “average 5-10% loss in global GDP, with poor countries suffering costs in excess of 10% of GDP” (p.9), and “a reduction in consumption per head of between 5 and 20%” (p.10). A rise in excess of 5 degrees Centigrade is beyond the collapsitarian tipping point, or the “catastrophic scenario” as defined by Campbell et al (2007, p.17), which would give rise to mass migration due to a sea level rise of over 2 metres; massively destructive religion-based terrorism; society rage at government’s inability to deal with the abrupt and unpredictable crises; violence toward migrants and minority groups; and intra- and interstate conflict over food, water, and energy; in such a milieu, “altruism and generosity would likely be blunted” (Campbell et al 2007, p.85).

The potential consequences of global overshoot are obviously profound. Humanity remains poorly equipped to deal with looming catastrophes, since we are now embedded in a context for which we have no living memory to guide appropriate action. Schwartz and Randall (2003), in a report to the US government, suggest that abrupt climate change is likely to stretch the Earth’s biocapacity well beyond its already over-extended limits. Destructive and aggressive wars are then likely to be fought over food, water, and energy. Deaths from wars, as well as starvation and disease, will radically reduce population size, which Malthusian-like, will re-balance the biocapacity of the Earth.

Global ecological duress (as is the case with wealth and power) is inequitably distributed among nations and regions, so that there would be an expectation that collapse of global capitalism will likely start with those countries at most risk (e.g., Africa, South Asia, Central America) and then spread to others (IPCC 2011). A collapse is imagined that may be slow in starting, but once started, will quickly escalate to encompass the world, including the possible fragmentation of the EU and the US (Kunstler 2005). The result of overshoot and collapse will be a standard of living for humanity that is much diminished from that which we have become accustomed in wealthy countries.

Toynbee (1947) pointed out a similarity of courses for failed civilisations in the past, consisting of an accumulation of pressures and assault on society, followed by cataclysm and breakdown. He found a “rhythm of disintegration” (p.589) for the decline of civilisations, consisting of “rout-rally-rout-rally-rout-rally-rout: three-and-a-half beats”. Blaha (2002), adapting Toynbee’s (1947) theory, found that history shows a period of 134 years from start-up to the tipping-point of breakdown, and that start-up to the end of the final rout of Toynbee’s 3.5 beats represents about 1,068 years. Projections suggest the emergence of powerful Chinese, Indian, Islamic, and Orthodox civilizations to 2050, with global war averted by continued Western influence. By 2100, however, all of the five civilizations will have exhausted their potential, and the final ‘rout’ will have run its course. Thus, by extrapolation of historical periodicity, Blaha (2002) speculates a new era for human civilisation by 2100, as well as considerable trauma in the intervening ‘rout’ years.

To bring the discussion back to the nearer future, Meadows *et al.* (2005) predict that, under current trajectories, the tipping point will be 2020-30; the point at which we begin to ascertain declining industrial output and declining overall human welfare (as measured by food and water security, health and morbidity, and life expectancy). By 2100, Meadows *et al.* (2005) suggest, human welfare will have declined to levels consistent with 1900.

Attali (2011) imagines that by 2020, nation states will start to disintegrate into extremist dictatorships, fundamentalist theocracies, tribal groups, and smaller more robust city states, reminiscent of 15th-century

Europe. This will lead to nationalisation of important industries (e.g., energy; food; air transportation), and hence, “new patterns of ownership” (Schumacher 1999/1973, p.230). Moreover, the small city states are expected to form regional alliances for trade and security purposes.

Brown (2011) and Porritt (2009) imagine the coming of a 'perfect storm' of converging crises, involving financial and economic fragility, climate change, population growth, soaring energy costs, drought, and water and food scarcity that will consume the world during the period 2020-30. Worth (2010, p.27) suggests that the period to 2030 will likely be “the Second Great Depression”, as a result of ‘Peak Oil’ and ‘Peak Debt’. It will also be a period punctuated by high inflation of 10-15 percent per year in developed economies. Ruppert (2009) argues that, to 2020, the world will be buffeted by regular boom-bust cycles because economic growth will stimulate rapidly rising fuel and commodity prices, which will rapidly counter growth and lead to recession. Deeb (2011, p.101) speculates that “resource nationalism” (i.e., state control of commodities) will become increasingly common as countries seek to secure scarce resources. This will inevitably lead to an increasingly hostile world. As such, business beyond 2020 is expected to be conducted increasingly by local small businesses, while at the global level, we will likely see networked conglomerates of small localised businesses similar to what are currently referred to as ‘virtual corporations’ (Byrne *et al.* 1993; Davidow & Malone 1992).

At the political level, an enfeebling of governments is imagined as social services, and laws protecting workers’ rights and the poor, disintegrate in the wake of weakening tax revenues (Attali 2011; Kunstler 2005). Internationally, government enfeeblement is likely to foster piratical criminal businesses run by mafiosa and warlords, and which indulge in violence to achieve their objectives. There will emerge an “anger of the secular” (Attali 2011, p.219) as resources deplete and climate change runs out of control; both global capitalism and democracy will be justifiably denounced as abject failures. Within this context, global capitalism will ultimately fail and collapse. In its place will be hyper-conflict within urban centres; between failed states; and, inter-regionally between city state militias. Ultimately, Malthusian-like cataclysmic global conflict will result in a more balanced global biocapacity, and positive outcomes for the world beyond 2060.

Smith and Vivekananda (2007, p.3) indicate that many of the poorest countries in the world face a “double-headed problem” - that of climate change and violent conflict. There is a high risk that climate change will compound the propensity for violent conflict, which in turn will leave poor countries even poorer, less resilient, and less able to cope with the consequences of climate change. They note that there are currently 46 countries and 2.7 billion people, in which the effects of climate change interacting with economic, social and political complications will create a high risk of violent conflict in the short-term. There is a further group of 56 countries, and 1.2 billion people, where the institutions of government will have great difficulty accepting the strain of climate change concurrent with other challenges. In these countries, though the risk of armed conflict may not be so immediate, the interaction of climate change and resource scarcity will create a high risk of political instability, with potential violent conflict a distinct risk in the longer-term. Overall, then, Smith and Vivekananda (2007) suggest that, up to 2050, 102 countries and 3.9 billion people (i.e., over 50 percent of the world’s population) may likely become imbued in violent conflict induced by ecological duress.

The coming period from 2012 is imagined as one of industrial, financial, and social haemorrhage, which will escalate beyond 2020, and lead to plenary collapse of global capitalism by 2050-60. From now on, we are likely to experience symptoms that point to impending crisis, and ultimate collapse.

QUESTION 2:

WHAT ARE THE SYMPTOMS OF GLOBAL COLLAPSE?

Meadows et al. (2005, pp.176-7) proffer a number of symptoms of imminent global economic collapse with which companies and individuals will likely be faced:

- Higher government taxes to cover increasing costs of public services;
- Increasing cost of commodities as natural resources become more scarce;
- Deterioration of public infrastructure as capital costs increase beyond government ability to spend, with maintenance increasingly deferred;
- Escalating military spending as governments become cognisant of growing international hostility;
- Diminishing government investment in the future (i.e., education, health, public housing, foreign aid) as the focus on government revenues is directed to immediate needs, such as public security (i.e., police) and land issues (i.e., soil productivity);
- Shifting consumption patterns as a financially-constrained public refocus spending onto necessities, rather than narcissistic satisfaction;
- Increasing public antagonism towards government and politicians as they become increasingly emasculated in the global milieu;
- Accession of political and theocratic extremism;
- Proliferation of illegal immigration as people seek to escape areas of high ecological duress, or those subject to conflict; and,
- More frequent and severe natural disasters due to declining resilience in the ecological system.

The above symptoms are likely to manifest as severe macro-economic consequences, such as falling stock markets amidst declining company profits; expanding unemployment as companies downsize; decreasing private incomes, a return to one-income families, declining pension funds for the retired; and, repressed interest rates as corporate and government investment is stifled. Given the symptoms and macro-economic consequences outlined, the third question may now be posed.

QUESTION 3:

WHAT IS THE FUTURE OF BUSINESS UNDER A COLLAPSITARIAN SCENARIO?

The Intergovernmental Panel on Climate Change (IPCC 2011) and the UK Department of International Development (Conway 2008) have both noted the differential impact of climate change on different industrial sectors. For example, extreme events will have greater impact on sectors with closer links to climate, such as water, agriculture and food security, forestry, health, and tourism; while drier climates will increase the likelihood of food and water insecurities.

Mills (2005) notes the vulnerability of the insurance industry, while Attali (2011) speculates a positive outcome for the entertainment industry (i.e., movies; television; music; sports) as people seek to escape present-world difficulties. Worth (2010) suggests a positive outlook for renewable energy, but dire consequences for any products associated with discretionary spending (e.g., fast foods; cable television; technology). Lovins and Cohen (2011) suggest negative outcomes for the airline industry, as a major consumer of oil derivatives, as well as a major contributor to carbon emissions. Climate change consulting is expected to be a boom industry (EBI 2012). Eilperin (2009) observes the likelihood of shortages of raw materials, and supply-chain disruptions. The health care industry is viewed as a potential beneficiary of climate change because of increased incidence of sickness, disease, and natural disasters. Similarly, the telecommunications industry is imagined to benefit due to less airline travel and more severe weather occurrences (CDP 2011). On the other hand, tourism is likely to be devastated as air travel becomes less affordable, leading to severe economic problems for countries heavily dependent on tourism as an export industry, such as Greece, Thailand, and Bali (Lovins & Cohen 2011). Modes of freight transportation are

likely to shift away from trucking to rail (5 times more efficient) and sea (20 times more efficient) (Worth 2010), but this would necessitate considerable infrastructure investment in rail and port facilities by governments cash-strapped by declining tax revenues (Attali 2010).

In light of the coming corporate devastation predicted above, an obvious question may be: What is the capability of companies and managers to cope with such traumatic change? In answer to this question, Hofer (1980) provides an appropriate framework from which an analysis might be gleaned. As company profitability declines, strategy will progress through cost-cutting, revenue-generation, and finally asset reduction. Hofer's framework is set within a normal business cycle, in which companies are expected to deal with a temporary downturn until the next growth phase eventuates. However, this normalised response will be thoroughly inadequate in the case of expansive economic collapse followed by a steady-state economy. As global capitalism deteriorates, cost-cutting (e.g., downsizing; outsourcing) will be maximised, options for revenue-generation will be exhausted, leaving only asset reduction as an option in an increasingly risky and investment funds-deplete environment. In such a scenario, the profitability of capital will divorce itself from the tradition of advancing asset values.

While industrial sectors may be differentially impacted, over time all industrial sectors in all countries will feel the wrath of a collapsing global economic system. The ultimate outcome may be a global business model based on small enterprises in most industrial sectors; that is, we may see a regression of 200 years to a period synonymous with early-19th-century commerce (History of Small Business 2011); a "radical simplification of the economy" (Heinberg 2011, p.236), "relocalization" of industry (Ruppert 2009, p.145), the 'uncivilisation' of society (Kingsnorth & Hine 2009). A segue to 19th-century-style small business would likely be a traumatic one, indeed, as management in larger companies react ineffectively. This would be followed closely by mass bankruptcies, as risk escalates and investment funds evaporate, in an exponential spiral of corporate decay. Cash will disappear as banks fail, and stock markets and real estate values plunge, leaving large-scale personal financial devastation (Heinberg 2011).

Leonard Kohr (1957) would support the devolution to 'smallness'. He studied the breakdown of civilisations in prior eras, and argued that political, economic, and social polemics throughout history have been fundamentally caused by 'bigness' (i.e., "the inability to cope with the problems it creates"; p.159). The solution is not more complexity by 'unification' (that is, more international institutions), but rather, fragmentation into small nation states, local communities, and localised economies.

CONCLUSIONS

Global capitalism is a post-World War II abstract economic theory that, by the 1980s, was portrayed as Darwinian fact (Saul 2005). The theory subsequently morphed into a totalitarian economic regime advocating radical global economic integration, while remaining devoid of affinity to ecological and social contexts that articulate the real soul of humanity.

By 1990, market capitalism had trumped socialism as a basic principle of human organisation. Henceforth, we became deluded by the prospects of ever more technological marvels; beguiled by narcissistic consumerism; and, mired in cornucopian passivity, as economists, politicians, academics, and corporations projected a utopian future of incessant wealth creation. We became seduced within, what Toynbee (1947, p.582) coined, an "intoxication of victory"; a sanctimonious victory over socialism and nature - indeed, a victory over all, except unwittingly, over ourselves.

It is not as though we have not been warned of the potential dangers of our insipid banality. Thurow (1996) highlighted that global capitalism was inherently unstable because it fostered increasing wealth

inequalities, marginalized citizenry, and projected the absurd impropriety of hedonistic consumption as a long-term vision for humanity. Likewise, Fukuyama (1999) foresaw globalization as a ‘great disruption’ that was destined to dissolve into moral decline, weakening social bonds, and the breakdown of social order.

But, it is the precipitous decay of the global ecosystem that is promising to provide the tipping-point into social chaos, and the breakdown of global capitalism as an economic system. Growth of human population and affluence is grafting unsustainable ecological demands on a system that is already in overshoot. Climate change is the precursor to food and water scarcities, which, when coupled to acute resource depletion, will likely lead to mass human migration as people seek survival in better-off countries. The recent cases of Rwanda, Darfur, and Haiti provide sobering evidence of the cataclysmic consequences of people caught in a Malthusian trap, constrained within their borders and subject to violence. Extrapolation of these recent cases to the prospect of similar situations occurring in over 100 countries, and involving perhaps 4 billion people simultaneously (Smith and Vivekananda 2007), provides a frightening scenario on a truly apocalyptic scale.

Meanwhile, humanity remains mired in denial over the recondite evidence that global capitalism is inherently unsustainable; Al Gore (2006) called it an ‘inconvenient truth’. There is a tendency to deem technology and governments as the accredited managers of negative externalities, so that people may bear no responsibility to act, or to change their unsustainable lifestyles. Our psychological disposition is abetted by powerful lobby groups and influential conservative elements that aim to besmear information and maintain the status quo. Given the overwhelming lack of trust of international institutions, political leaders, governments, and corporations, it is little wonder that the world has become mired in a crisis of credibility, and stalemate for action; ruin of the global commons has, hence, been humanity’s trodden path since the 1980s.

What, then, are the possibilities for proaction from this point in time? Stiglitz (2002) argues that our current economic system works, but political leadership is lacking and international institutions need strengthening; but fragmented nation-states will likely be on the ascendancy (Kohr 1957), while politicians remain tarnished by Faustian illusion, dysfunctional folly, and fixation on re-election (Deeb 2011; Tushman 1984). Isaak (2005) contends that the wealthy must become philanthropic, at a time when equanimity, altruism, and generosity will likely be in recession (Campbell *et al.* 2007). The International Labour Organization calls for a “stronger ethical framework” (ILO 2004, p.7), in a period of “moral crisis” (Stiglitz 2010, p.278). And Sach (2005, p.358) calls for “enlightened globalization” in which rich countries use their wealth to help the poor escape the poverty trap; this concurrent with wealthy countries mired in debt, and the escalating struggle to provide social services demanded of citizens (Attali 2011).

In the final analysis, the mainstream recommended elucidations to the quandary of climate change and resource depletion will more likely be untenable; a slide towards plenary collapse of the existing model of global capitalism may likely ensue; and, Malthusian-like human population consolidation, and radical simplification of the lifestyles of those remaining, may be the only viable segue to a sustainable future for humankind. In the interstitial period to 2030, current business models will breakdown amidst personal and corporate devastation; mere survival will then dominate all other human concerns.

Carey (2011) wrote that European and American business enterprises of the early-1800s were small-scale family-owned operations. Most manufacturing was conducted by artisans, who were often assisted by apprentices or family members. The textile and shoe industries, for instance, relied on the ‘putting-out system’, whereby self-employed, home-based workers drew their materials from, and delivered finished

goods to, a central warehouse. The largest industrial enterprises at the time rarely employed more than 50 workers. Is Carey, then, unwittingly describing the fabric of the post-2030 global business model?

The available evidence indicates that the world is on a tipping-point of massive systemic collapse, and that corporations, societies, and individuals remain ill-prepared and ill-equipped for the potentially apocalyptic consequences.

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