

# A century on the edge: from Cold War to hot world, 1945–2045

PAUL ROGERS

Contributions to anniversaries may take a broad view, sometimes even a centuries-long perspective. Most commonly, such perspectives are framed within traditional boundaries—nineteenth, twentieth or twenty-first century, for example—but this article argues that one period not normally viewed in this way, from 1945 to 2045, may have a particular significance, giving a perspective that is of value in analysing current trends in international security.

The argument is that in a broad view of human evolution within a largely closed planetary system, this century has a peculiar relevance in that it is likely to cover the period when humankind must learn to live with two dangerous capacities. One is the development of military technologies that, if used, could set back the human community many decades, possibly centuries, and the other is the impact of anthropogenic effects on global ecosystem homeostasis.

In broad terms, the article argues that the first element is slowly being understood, but that success in avoiding the intercontinental use of weapons of mass destruction has been more a matter of luck than judgement or wisdom. This element predominates during the first two-thirds of the 1945–2045 period—more or less through to the time of writing. In respect of the second element, responding to global environmental constraints, the prognosis is currently poor. This question dominates the latter two-thirds of the century, obviously overlapping with the first. The article argues that there are significant connections between the two issues, and that learning effectively from the inadequate response to the first issue may assist in formulating a better response to the second.

Before proceeding further it is worth pausing to consider a much longer perspective. Tool-using pre-hominids evolved several million years ago and, as tool-making became a feature of early hominid society, the species spread across the Earth. Even 15,000 years ago, though, the worldwide population was little more than 5 million as hunter-gatherers require substantial areas of territory to provide sufficient ecological carrying capacity to satisfy their needs, principally for food. The agricultural revolution that saw the domestication of plants and animals established in several separate regions across the world revolutionized the ability to provide food, increasing the land's carrying capacity and leading both to an explosion of the human population and to the emergence of towns and cities.

More recently, a second period of revolutionary change commenced with the start of the industrial revolution, accompanied by linked agricultural developments, some 250 years ago, followed by further population growth and urbanization. This process, which continues today, has involved substantial environmental impacts, most commonly at local and regional levels, with little evidence of impacts on the entire biosphere until the late twentieth century. In its wake have come numerous developments in military technology, starting with the mechanized warfare of the early part of the twentieth century and culminating in the nuclear age. The relevant point for present purposes is that, if measured in terms of broad human history, the huge changes of the last 250 years are very sudden, and the acquisition of capabilities for self- and environmental destruction even more recent.

In examining the century from 1945 to 2045, this article starts by summarizing some of the features of the nuclear arms race of the Cold War before examining how military postures changed after the Cold War ended and were later bound up in the response to the 9/11 attacks and subsequent reorientations of that posture. It then analyses the issue of environmental limits on human activity, especially climate disruption, but does this in the context of the socio-economic divisions that have deepened over the past three decades. Finally, it seeks to draw on the experience of the Cold War confrontation in suggesting responses to future challenges that might enhance equality, sustainability and security.

## **The Cold War experience**

Following the origins of nuclear weapons in the US Manhattan Project, efforts to curtail their further development in the late 1940s failed and by 1955 the United States and the Soviet Union had between them over 3,000 nuclear weapons, rising to 37,000 in 1965 and 46,000 in 1975, and peaking at over 62,000 around 1985. In the early years of the arms race the rival states placed some emphasis on very powerful weapons with explosive yields of up to 25 megatons, some 2,000 times the power of the Hiroshima bomb. Later, the emphasis was on very large numbers of smaller weapons, although many of these were individually far larger than the Hiroshima bomb.

At the strategic level, there were interlocking arms races involving a triad of weapon types—intercontinental ballistic missiles, long-range bombers and sea-launched ballistic missiles—with each side developing increasingly accurate systems leading to a perceived risk of vulnerability and hence to launch-on-warning and launch-under-attack options. By themselves these raised particular problems of potential crisis instability stemming from the risk of a ‘use them or lose them’ mentality, but this was made worse by the proliferation of weapons types.

As well as a strategic arms race, with each side maintaining this triad, there were numerous types of theatre and tactical nuclear weapons, with a view prevailing among the nuclear planning fraternity that small nuclear wars could be started and controlled without escalation to a central nuclear exchange. NATO consistently maintained (and indeed still does) a preparedness to use nuclear weapons first,

codified in 1967–8 in MC14/3, *Overall Strategic Concept for the Defence of the NATO Area*, and while the Soviet Union denied having a policy of first use, few in the West took this seriously.

Nuclear escalation was more easily envisaged as nuclear weapon deployments permeated almost every part of the NATO and Soviet force structures. Chemical weapons did too, ranging from the maintenance of stocks of long-established agents such as mustard gas through to potent nerve agents including Sarin, Tabun and V-agents, with delivery systems including strike aircraft, ballistic missiles and artillery. At the peak of the Cold War the United States had 27,000 tons of chemical agents and the Soviet Union 40,000 tons, but even with these arsenals the potential for destruction was less than nuclear weapons and both states are now slowly eliminating their stocks under the terms of the Chemical Weapons Convention.

For nuclear weapons, though, the penetration of types was quite astonishing and is largely unrecognized by new generations of scholars and analysts. The weapons included free-fall bombs, stand-off missiles, anti-submarine depth bombs, torpedoes, air-to-air missiles, battlefield weapons, artillery, mortars and even small ‘backpack’ nuclear mines for destroying tunnels and bridges. Some had explosive forces of much less than a kiloton (1,000 tons of high explosive-equivalent) meaning that the threshold between very small tactical nuclear weapons and the largest fuel-air-explosive conventional bombs was remarkably small. This combination of a first use posture with the deployment of nuclear warheads at quite low levels of command structures, together with extensive planning on both sides for limited nuclear war, was an element of the Cold War that contrasted markedly with a public perception of stable deterrence.

Looking back now, nearly a quarter of a century after the Cold War ended with the collapse of the Soviet bloc, there is still a common view that nuclear weapons kept the peace and provided overarching stability; but there are serious problems with this assertion. One is that while a central nuclear exchange did not happen, numerous proxy wars were fought that reflected Cold War competition. During the period from 1950 to 1990, they included conflicts that killed over 70,000 people in both Nicaragua and El Salvador, 390,000 in Angola, over 600,000 in the Horn of Africa and over 1 million in Mozambique. Losses in Asian proxy wars were even greater, with 1.3 million dying in Afghanistan, 2.3 million in Vietnam and 3 million in Korea.<sup>1</sup> Many millions of people were seriously wounded, often with life-changing impacts, and the material and economic damage to societies had effects stretching over more than a generation. Overall, the Cold War proxy conflicts killed at least 10 million people—a fact that has to be set against any notion that nuclear weapons kept the peace.

Furthermore, many studies over the last 25 years have questioned the idea of stability achieved through nuclear deterrence. Because of the relatively closed nature of Soviet society, little is known even now of the nuclear accidents and crises that affected its forces, but it is a reasonable assumption that they were no

<sup>1</sup> Ruth Leger Sivard, *World military and social expenditure 1991* (Washington DC: World Priorities, 1991).

less dangerous than those experienced by the United States. These include many examples of serious accidents involving nuclear weapons, in the course of which some nuclear weapons were lost and never recovered. Certain crises were so severe that they later contributed to some of the key people involved working towards a nuclear-free world, a notable example being President Kennedy's Defense Secretary, Robert McNamara, who was much influenced by post-Cold War discussions with former Soviet counterparts from the period of the Cuban Missile Crisis.<sup>2</sup> This was shown, after the Cold War, to have come far closer to a central nuclear exchange than was realized at the time, not least because of each side's ignorance of the other's conventional and nuclear deployments and intentions. In another remarkable case, NATO's 1982 Able Archer exercise involving highly accurate road-mobile nuclear missiles resulted in an immediate escalatory Soviet response as elements within the military leadership feared the operation was a preparation for an actual nuclear attack. The impact on NATO planners was to modify their entire exercise programme, though knowledge of this only came into the public domain many years later.

The proxy wars and risks of nuclear disaster are paralleled by a third aspect of the Cold War period: the extraordinary commitment of human ingenuity, research prowess and financial resources to the East–West confrontation. To take just one example, in the early 1970s there was a serious world food crisis that seemed likely to lead to a period of famine stretching across much of the tropics and sub-tropics and putting the lives of tens of millions of people directly at risk. The worst aspects of the short-term problems were overcome by 1975 through welcome international cooperation, but there were also concerted efforts to promote spending on agricultural research to prevent a repeat of the crisis in the future. This involved calls for an increase in agricultural research directed towards the global South from approximately US\$1.5 billion (at 1974 prices) to US\$5 billion for a period of ten years. This was equivalent to around 2 per cent of world military spending at the time.<sup>3</sup> The increase in research spending never came near that laudable target and, nearly 40 years later, the number of undernourished people is actually higher.

This is one specific example of contrasting attitudes to civil and military research and development but there are many others. Britain is an interesting case in point if one looks back on the early Cold War period of the 1950s. At this time, UK military R&D did not just involve the development of nuclear and thermonuclear weapons but the UK actually developed and then deployed three different types of transcontinental bomber, Valiant, Vulcan and Victor, a range of offensive and defensive missiles and numerous other conventional army, navy and air force systems while maintaining armed forces close to four times the current size.

Looked at overall, the Cold War period was a time of great risk in which an intercontinental catastrophe was avoided not by wisdom but with luck, and

<sup>2</sup> Paul Rogers, *Food in our time—but not just yet: a report on the World Food Conference* (London: World Development Movement, 1974).

<sup>3</sup> Robert S. McNamara, 'The conference on disarmament should focus on steps to move towards a nuclear-free world', *Disarmament Diplomacy* 4: 2, April 1996, pp. 8–10.

during which human resources were wasted on an immense scale. Why highly intelligent people—military, politicians, diplomats and others—were unable to face up to the dangers of the nuclear environment in which they were willing to operate is still difficult to understand. Nash's seminal essay, 'The bureaucratization of homicide',<sup>4</sup> is informative as to the outlooks of individuals lower down the chain of command, pointing to behaviour within any bureaucracy. In his experience, diligent nuclear planners saw it as an essential part of their work to be effective, not least as a means of responding to those above them and moving up the career ladder and the higher levels of security clearance. If and when they did consider the impact of what they were doing, they could fall back on the certainty that their Soviet opposite numbers were similarly engaged and that their own endeavour was driven by patriotic duty.

This throws little light on the roles of the most senior actors. Military commanders below the top tier were commonly engaged in maintaining their own forces, and their most senior commanders were hugely influenced by the Cold War ideological divide and the threat from their opponents, a threat that also served the interests of powerful defence lobbies on both sides. As to the most senior politicians, they typically served quite short terms and were engaged in their own political environments that saw any reaching out to opponents as signs of weakness. Occasionally, as with the Kennedy outreach to the Soviets after Cuba, and Gorbachev's openness from 1995, individuals rose above the immediate confrontation. With Kennedy it did not outlast his death and in Gorbachev's case he may have played a huge role in ending the Cold War but that is not sufficiently acknowledged more than two decades later.

That such a dangerous arms race was able to continue for several decades should not disguise the fact that its ending at the close of the 1980s heralded a period of decreased nuclear danger, with some of the most dangerous and potentially unstable 'first use' systems being downgraded as part of a process of substantial overall reductions in arsenals. Nearly 25 years later, there is a much decreased risk of an intercontinental nuclear war but a slowly increasing problem of proliferation. The five acknowledged nuclear powers who occupy permanent seats on the UN Security Council—the United States, Russia, China, the UK and France—are all maintaining and even developing their nuclear systems albeit, with the exception of China, mostly at much-reduced levels; outside this group, Israel has been joined by India and Pakistan as nuclear powers, North Korea has a limited nuclear capability, and there remain risks of proliferation in the Middle East depending on the outcome of diplomatic interchanges between Iran and the United States.

Despite deep reductions in nuclear arsenals in the US, Russia, France and the UK, progress towards nuclear elimination has been very limited and this does not give confidence that leaderships have the ability to avoid future technological dangers, whether these stem from bio- or nanotechnologies, or other developments. Genetic manipulation, for example, has the potential to add substantially to the effectiveness of biological agents; yet, while there is a worldwide ban on

<sup>4</sup> Henry T. Nash, 'The bureaucratization of homicide', *Bulletin of the Atomic Scientists* 36: 4, April 1980, pp. 26–34.

such developments, attempts over two decades to strengthen the 1972 Biological and Toxin Weapons Convention have led to little in the way of inspection or verification procedures. Similarly, the pace of development in nanotechnologies has not been accompanied by sufficient consideration of untoward impacts.

On the evidence to date, the first two-thirds of the 1945–2045 century does not inspire confidence that the human community has acquired sufficient wisdom to handle the destructive potential of some key scientific and technological developments, even if catastrophe has so far been avoided. Furthermore, the twelve years since the 9/11 attacks suggest that vigorous recourse to military force is the most likely response to new threats, what might be termed the ‘control paradigm’, a concept most clearly demonstrated by analysing the response to those attacks.

## A jungle to be tamed

When President Clinton’s newly appointed Director of Central Intelligence, James Woolsey, was questioned in confirmation hearings on Capitol Hill in 1993, he was asked to characterize the transition to the post-Cold War world: he replied that the dragon had been slain but the United States now inhabited a jungle full of poisonous snakes. In the following eight years US armed forces reorientated their posture away from the Cold War and towards taming that jungle. As well as scaling down the nuclear capability, there was a move away from large-scale armoured forces and anti-submarine capabilities, whereas expeditionary warfare, long-range strike capacity and stand-off weapons were largely maintained. Even with nuclear weapons the drawdown in number did not mean a move away from nuclear postures in general, more their adaptation to a potentially proliferating world rather than a major East–West confrontation. Moreover, the concern of Putin’s Russia with rebuilding and enhancing its nuclear forces would appear to have much to do with seeking to regain superpower status.

With the election of George W. Bush to the presidency in 2000 and the appointment of Donald Rumsfeld as Secretary of Defense the following year, this trend in US military posture continued, even though the overall security orientation was greatly influenced by the neo-conservative vision embodied in the ‘Project for a New American Century’. That vision required singularly strong armed forces; but while Rumsfeld bought heavily into the idea of using military power to maintain control, he saw ‘war lite’ as being the desirable approach—further developing the trends of the 1990s. On the nuclear front the new administration was particularly concerned with maintaining nuclear capabilities, a key aspect of this being opposition to the 1972 Anti-Ballistic Missile Treaty. More generally, robust and versatile forces able to intervene at short notice wherever US interests were threatened were considered appropriate to a world in which a single superpower would be able to guarantee civilization while running, in Krauthammer’s phrase, a ‘benign imperium’.<sup>5</sup>

<sup>5</sup> Charles Krauthammer, ‘The Bush Doctrine: ABM, Kyoto and the new American unilateralism’, *Weekly Standard*, no. 36, 4 June 2001.

The initial response to the 9/11 atrocities followed this pattern, with termination of the Taliban regime achieved by a combination of air power, special forces, and the use of Northern Alliance militias as surrogate ground troops. Eighteen months later, with the 'war on terror' having been expanded to encompass an 'axis of evil', the termination of the Saddam Hussein regime in Iraq was achieved with less than a third of the forces employed to evict the Iraqis from Kuwait twelve years earlier. By 1 May 2003, the occasion of President Bush's 'mission accomplished' speech from the flight deck of the USS *Abraham Lincoln*, the President could point to the termination of the Taliban regime, the dispersal of the Al-Qaeda movement, the prospect of Afghanistan and Iraq developing as strongly pro-western states and greater US influence in the geostrategic Central Asian region in the wake of new base agreements.

Perhaps most significant of all were two elements relating to Iraq. One was that the state's economy would be remodelled under Paul Bremer's Coalition Provisional Authority to evolve into a true free market—a beacon for the wider Middle East and a model for the New American Century. The second was that the most substantial remaining problem for the United States in the region, the Islamic Republic of Iran, would now be thoroughly constrained. This might be difficult to understand, given that Iran's enemies—Iraq and the Taliban—were also enemies of the United States and that Iran had actually been helpful to the US in its actions in Afghanistan immediately after the 9/11 attacks. Part of the explanation relates to Iran's antagonism to Israel but it also goes back to the Islamic Revolution and the loss of the Shah's Iran as a bulwark for the United States in the wider Middle East. In this context, therefore, the establishment of US bases in Afghanistan and Iraq, pro-American allies in western Gulf states and the US Navy's Fifth Fleet in the Gulf and the Arabian Sea would all ensure a compliant and subdued Tehran. War lite would work.

In the event, the outcome of these military actions was formidably different from expectations, and by 2010 two bitter and prolonged wars had resulted in over 200,000 people killed, hundreds of thousands injured, nearly 8 million displaced and a massive expenditure likely to reach US\$3 trillion.<sup>6</sup> As the security situation in Iraq deteriorated, Barack Obama was able to campaign for the presidency in 2008 on the basis of an increasingly unpopular war, and having taken office ended the occupation in Iraq by 2011. The war in Afghanistan was maintained during his first term before reality intervened. What had started as 'war lite', first in Afghanistan and then Iraq, had become an unsustainable 'war heavy', with over 100,000 troops deployed in each country yet in neither place succeeding in achieving their objectives.

Moreover, at the centre of the original 'war on terror' had been a determined effort to destroy the Al-Qaeda movement; and this also failed. Even the dispersed and weakened movement was undergoing a metamorphosis into a multi-faceted

<sup>6</sup> Eisenhower Research Project, *The costs of war* (Providence, RI: Watson Institute for International Studies, Brown University, 2011); Joseph Stiglitz and Linda Bilmes, *The three trillion dollar war* (London and New York: Allen Lane, 2008).

entity with numerous allied groups and individuals. Much of the impact was experienced within the Islamic world, not least in Iraq and Pakistan with many thousands of people killed, but over the period 2002–2007 there were also many attacks on western and Israeli targets across the world, in addition to escalating violence in Afghanistan and Iraq. They included attacks in Casablanca, Djerba (Tunisia), Istanbul, Riyadh, Sinai, Aqaba, Amman, Bali, Jakarta, Islamabad, Karachi, Mumbai, Mombasa, Madrid and London, as well as many failed attempts.

By 2010 the United States and its coalition partners were even losing the will to maintain the occupation of Afghanistan, and following his re-election in 2012 President Obama proceeded with the plan to withdraw most troops from the country by the end of 2014. It was now clear that both wars had demonstrably failed to achieve their objectives. Iraq was hardly a part of a brave New American Century—indeed, by late 2013 it was close to civil war—and there were few analysts who believed that the Taliban would have no role in a post-occupation Afghanistan. The ‘war on terror’ had failed in all its major aims excepting the occurrence, so far, of another serious attack on the continental United States.

## Remote control

With the abject failure of ‘boots on the ground’ to bring closure to the two wars, the whole concept of large-scale expeditionary warfare has come into question, partly because of the manifest failure of the wars in Afghanistan to achieve their aims but also because of the increasingly ‘casualty-averse’ mood in the United States and its coalition partners, especially Britain. This has coincided with developments in military technology and posture which look towards the control of threats through other means. In the popular mind, the main focus of this has been the rapid growth in the use of high-endurance long-range armed drones, deployed increasingly in Afghanistan and credited with inflicting substantial damage on the middle-ranking cohorts of the Al-Qaeda movement centred on tribal areas of north-west Pakistan.

The boots on the ground are thus being replaced by ‘remote control’; but this is only partly a matter of armed drones. Other components are the much greater use of low-profile special forces operations, most notably the ‘night raids’ employed repeatedly in Afghanistan. Such is the expansion of special forces within the US military system that US Special Operations Command has expanded from 42,743 personnel in 2008 to 63,650 in 2012 and is planned to peak at 71,000 by 2015.<sup>7</sup> To give a sense of perspective, this will not be far short of the size of the entire British army after the current programme of cuts to the latter is implemented.

There are three other elements of remote control. One is the growth in private military and security companies, with as many as 20,000 personnel contracted into Iraq and Afghanistan by this route,<sup>8</sup> and a second is the rendering or kidnapping

<sup>7</sup> Linda Robinson, *The future of US special operations forces*, Council Special Report no. 66 (New York: US Council on Foreign Relations, April 2013).

<sup>8</sup> ‘Bullets for hire’, *The Economist*, 17 Nov. 2012.



of selected high-value suspects for interrogation, often to third countries, with or without the sanction of the countries from which they are taken. Finally, there is the development over the longer term of Prompt Global Strike—the ability to deliver conventional warheads over intercontinental distances in much less than an hour. Early variants have been based on very large ballistic missiles originally intended for nuclear delivery but retrofitted with conventional warheads. These are likely to be superseded by specifically developed boost-glide systems and hypersonic vehicles using ramjet and scramjet propulsion.<sup>9</sup>

## **Lessons unlearnt**

While this trend towards remote control has been under way for much of the past ten years, it appears to have had little more effect on the perceived security challenges than ‘war heavy’. In October 2013 the new head of the UK Security Service (MI5), Andrew Parker, could point to a security risk stemming from ‘thousands’ of radical Islamists in the UK, and there was a clear sense that Al-Qaeda had further evolved into a phenomenon that was more akin to an idea than an effective paramilitary movement. Syria was now the main focus of extreme Islamist paramilitaries, followed closely by Iraq. The tribal areas of Pakistan might now be far behind in potential, but Yemen remained of concern, as did Somalia and parts of the Maghreb, the former in relation specifically to the Westgate Shopping Mall attack in Nairobi the previous month. Of particular concern were western areas of the Sahel region, most notably the actions of the highly active Boko Haram insurgency of northern Nigeria, while the Russian authorities were committing huge resources to safeguard the 2014 Winter Olympics in Sochi from attack by the Caucasus Emirate.

While the move towards remote control of threats is initially attractive, it is already being seen to have unexpected consequences. Armed drones are being actively developed by many countries including China and Iran, and precedents have been set by the United States that will make it difficult if not impossible to counter cross-border incursions in pursuit of national security concerns. If the United States can target people for assassination in Yemen, Pakistan or Somalia, why could not Russia do the same in Central Asia, China in South-East Asia or Turkey against Kurdish paramilitaries in Iraq if any of these states believed its security was threatened?

Taking a broad view, the experience of the twelve years from late 2001 to the end of 2013 was hardly satisfactory from a western military perspective, with neither military occupations nor remote control having the desired outcomes. It is in this context that it is now appropriate to analyse the most significant security challenges of the next 30 years—the final third of the century under review—to see whether the experience of those twelve years, and the longer-term experience of the Cold War, bodes ill or well for greater international peace and stability.

<sup>9</sup> ‘Speed is the new stealth’, *The Economist*, 1 June 2013; Caitlin Harrington, Sam LaGrone and Daniel Wasserbly, ‘Silver bullets: US seeks conventional weapons with a global reach’, *Jane’s International Defence Review* 43: 9, Sept. 2010, pp. 50–53.

## New challenges

While the industrial revolution resulted in major environmental impacts, these were local and regional in scale rather than affecting the biosphere as a whole. In the early 1970s global systems analyses were undertaken that suggested that world-wide ecosystem homeostasis would at some stage be affected by human activity, the most cogent analysis, *Limits to growth*, being published in 1972.<sup>10</sup> That study argued not that damaging change was inevitable in the short term but that within 60 years profound changes would be under way, the fundamental risk being that the ecological carrying capacity of the whole-planet ecosystem would be substantially exceeded.

The argument was not accepted by mainstream economists and others, and there were also expectations that technological developments would substantially increase carrying capacity. Furthermore, the rapid oil price rises of 1973–4, followed by a period of stagflation, resulted not in a reconceptualization of economic systems along sustainable lines but in the onset of a transition to a far stronger free market outlook which had a substantial impact across the world, not least through the evolution of the Washington Consensus.

A decade later, a ‘marker’ for global human effects was discovered in the form of CFC pollutants affecting the ozone layer in the upper atmosphere, the first clear evidence of a specific human activity having a truly global impact. The critical nature of the threat of ozone layer disruption, combined with the relative ease of moving to alternatives, ensured that intergovernmental action was taken rapidly, resulting in the Montreal Convention of 1987.

Meanwhile, concerns were raised about a far more serious and deeply embedded element of global environmental impact—the potential for increases in concentrations of atmospheric carbon dioxide and methane to cause climate disruption. Although there is an overwhelming scientific consensus on this issue, little governmental action has been taken, and ‘climate denial’ has been deeply embedded in political and economic circles, most notably in the George W. Bush administration in the United States from 2001 to 2009. On current trends, action taken to curb carbon emissions will be utterly inadequate to counter climate disruption; and this failure to take adequate steps is occurring against a background of deeply asymmetric impacts. Apart from an accelerating impact in near-Arctic regions, climate disruption is expected to be particularly intense across the tropics and sub-tropics, with above-average increases in temperature and changes in rainfall patterns leading to a marked decrease in the ecological carrying capacity of croplands that provide food for the majority of the world’s people.

In parallel with the development of this challenge, the global socio-economic divide is widening. Following the deregulation of financial systems in the late 1980s, commencing with the ‘Big Bang’ in London in 1986, world economic growth continued, albeit at a slower rate than before, but the experience of the

<sup>10</sup> Donella H. Meadows, Dennis L. Meadows, Jørgen Randers and William W. Behrens III, *Limits to growth* (London: Earth Island, 1972).

past 30 years is that there has been a disproportionate concentration of wealth in barely a fifth of the global population, a large majority of the world's wealth and annual income—close to 85 per cent—being shared by 1.5 billion people out of a world population of 7 billion.<sup>11</sup> This constitutes a transglobal elite, including hundreds of millions of people in China, India, Brazil and other developing and transitional economies, even if largely still concentrated in the countries of the North Atlantic community.

Alongside this substantial elite exists a marginalized majority that is failing similarly to benefit from the current world economic system. According to the Asia Development Bank's *2012 Asian Development Report*, for example, if there had been more even distribution of the fruits of growth, 'another 240 million people in the 45 countries that make up developing Asia would have moved out of poverty in the last two decades',<sup>12</sup> and the World Bank reports that 400 million children under 13 years of age are living in extreme poverty.<sup>13</sup>

Yet because of the size of the successful elite, it acts largely as a self-contained but global entity which benefits from material well-being that is largely taken for granted. The elite minority world exists alongside the majority world but is hardly conscious of the very existence of the divide. Rarely does it acknowledge the sustained benefits it gains from the appallingly low wages and abysmal working conditions of hundreds of millions of people producing cheap goods.

At the same time, there have been impressive and thoroughly welcome improvements in education, literacy and communications in the past 40 years across the global South, serving to make many members of that marginalized majority all too aware of their own marginalization.<sup>14</sup> The bitterness that this creates is reflected in much of the motivation for the 'Arab Awakening' over the past three years, and in the growth of radical movements such as the Naxalite rebellion in India and social unrest in China. It frequently adds further motivation to extreme groups rooted in religious or nationalist ideologies, the Boko Haram movement's recruiting from marginalized youth in north-east Nigeria being one of many examples.

## Consequences and responses

There are analysts and policy-makers who are concerned at the persistence of these deep inequalities in human development, and there are others who separately see the prospect of climate disruption as a fundamental threat to human well-being. What needs to be done is to integrate these phenomena more fully and see them as a single issue—the challenge of a world with embedded and deepening socio-economic divisions that is also facing severe environmental constraints. This is the

<sup>11</sup> James Davis, Susanna Sandstrom, Anthony Shorrocks and Edward N. Wolff, *The world distribution of household wealth*, WIDER Angle no. 2 (Helsinki: World Institute for Development Economics Research, 2006).

<sup>12</sup> Neena Bhandari, 'Rising inequality could be Asia's undoing', TerraViva-Inter Press Services, New York, 13 April 2012.

<sup>13</sup> Jim Lobe, '400 million children mired in extreme poverty', TerraViva-Inter Press Services, New York, 13 Oct. 2013.

<sup>14</sup> David Sogge, 'Inequalities and organised violence', Norwegian Peacebuilding Resource Centre policy brief, Oslo, Sept. 2013.

key security issue of the final third of the 1945–2045 century, and unless it can be resolved there is every risk of the world being deeply unstable and insecure by the end of that century.

As climate disruption diminishes the ecological carrying capacity of many of the world's most important croplands and as severe weather events increase in frequency and intensity, the pressures on social and political systems become more serious, and will be reflected in greatly increased migratory pressures and the rise of radical movements—'revolts from the margins'. As Edwin Brookes wrote 40 years ago, we have to avoid 'a crowded, glowering planet of massive inequalities of wealth buttressed by stark force yet endlessly threatened by desperate people in the global ghettos'.<sup>15</sup> This will not be easy to do, given the persistence of the control paradigm, in spite of its evident recent failure in responding to the 9/11 attacks. Part of the problem lies with the need to make major policy choices over the coming decade that may well have an impact on the minority elite. These choices include the requirement to move rapidly towards ultra-low-carbon economies while also making economic changes that result in greater equity and emancipation. In the face of what seem to be massive changes, it is far easier in the short term to believe that the status quo can be maintained and resort to 'Liddism'—keeping the lid on problems rather than addressing the forces underlying them.

Thus we persist in the belief that the liberal market is wholly functional and that the world economic system as it has evolved, now embracing even China, is without question the only way to operate. Even the 2008 financial crisis is receding safely into the past, and when threats to this successful system arise they are dangerous and must be countered. This may well include vigorous support for elite regimes facing revolts from their margins, including the training and equipping of necessary police and special forces. It involves stringent control of migration, intervention in failed and failing states when they threaten our interests, and sometimes even extends to the violent termination of regimes deemed to threaten the security of the established system—'our' world.

An appropriate narrative is not difficult to promote. Thus economic migrants are after 'our' jobs and asylum seekers are merely scroungers. When 350 people drowned off the Mediterranean island of Lampedusa in October 2013, initial shock soon gave way to indifference. If people riot in cities in the West, they are criminals pure and simple and there is no need for further discussion. If rebels oppose a friendly government in the South they are terrorists, a dangerous threat to established order to be repressed with all necessary force. It is, in short, a matter of taming Woolsey's 'jungle full of snakes', secure in the belief that it can be tamed and order ensured. Moreover, that taming can be effected, at least in part, by remote control, a necessary substitute for the recently failed endeavours of boots on the ground.

<sup>15</sup> Edwin Brookes, 'The implications of ecological limits to development in terms of expectations and aspirations in developed and less developed countries', in Anthony Vann and Paul Rogers, eds, *Human ecology and world development* (London and New York: Plenum, 1974).

This narrative relates to the discussion earlier in this article of attitudes within military and political communities during the Cold War. The possibility of an utter catastrophe was embedded in the very development of extraordinarily powerful weapons of mass destruction together with the active planning for their use, and there were instances where society came far closer to such disaster than was known in the public domain at the time. Even so, in those circles that were aware of the risks, planning was still undertaken: for the first time in human history there existed the capacity for self-infliction of catastrophe, yet the wisdom to respond to it was lacking and disaster was not easily avoided.

## Choices

Over the period through to 2045 it will be wise for political systems to respond to the emerging issue of an economically divided and environmentally constrained world. In one sense it is more difficult to do this than to respond to the nuclear issue, because the effects are incremental rather than having sudden catastrophic potential. In another sense, though, the very fact that they are incremental means that there is more scope for responding. Indeed, such response may even be aided by the ‘canary’ element, such as the impact of extreme weather events now acting as a herald of more substantial problems to come.

New thinking and analysis are needed to facilitate the development of a sustainable security approach before it becomes an absolute necessity in the face of what might in due course be an unstable world system. An appropriate definition of prophecy in this context might be ‘suggesting the possible’: that is, proposing the policies and approaches most likely to aid a transition to a more emancipated and sustainable world system.

If that is to happen, then the period through to 2025 is particularly important, as fundamental changes are already beginning and will be having their impact by 2045. Reference was made earlier to two transitional periods in human history—the agricultural and industrial revolutions. The third transition to a sustainable and emancipated world is every bit as fundamental as those, but will have to be made in a much shorter timescale.

Lest this seem an insuperable task, it is worth putting it in perspective. There are three positive factors to be considered. One is the existence of convincing arguments that, in terms of the personal experience of violence, the world is actually less violent than in recent centuries;<sup>16</sup> more recent experience suggests that the second decade of this century is so far seeing fewer conflicts than the 1990s.

The second is that there are many examples of specific events serving as warnings of greater problems and eliciting the appropriate responses. Two examples from the British experience are interesting here. The ‘Great Stink’ of London in the hot summer of 1858 made it almost impossible to live or work close to the River Thames, which had become little more than a giant sewer. Parliamentary and

<sup>16</sup> Steven Pinker, *The better angels of our nature* (New York: Viking, 2011).

other elites were directly affected and finally agreed to long-planned public health works which also greatly reduced the incidence of cholera and other enteric diseases. Nearly a century later around 4,000 elderly, bronchitic and asthmatic people were killed by the four-day 'Great Smog' of London, prompting radical improvements in air pollution control that were already being called for. At the international level, atmospheric chemists and others were already pointing to a potential danger from CFC disruption of the ozone layer, helping to ensure that when the ozone 'hole' was discovered over Antarctica, the intergovernmental response was rapid. In all of these cases there had previously been a process of suggesting the possible and even of planning for the necessary.

Third, if prophecy is indeed suggesting the possible, then there are many good examples of thinking, planning and acting that are already under way relating to the challenges outlined here. To take Britain as an example again, they include the sustained pioneering of the Centre for Alternative Technology's work on renewables and energy conservation and the 'Great Transition' project of the New Economics Foundation and the work of the Finance Innovation Lab, as well as the work on sustainable security promoted by the Oxford Research Group.<sup>17</sup> More generally, there is a wealth of activity aimed at promoting more equitable and sustainable technologies and economies right across the world, not least in the global South, and the speed of take-up of relevant new technologies is often remarkable. Also, there are already many examples of economic organization that eschew over-reliance on the profit motive. Across the world there are some 950 million members of cooperatives and other mutual organizations, and in many parts of the world it is feasible for individuals to undertake the majority of their economic interchanges through such organizations.

In conclusion, if the 1945–2045 period really is, as argued here, a particularly important phase in human development, then the last third of that period is the most challenging of all. Thermonuclear war has been avoided, so far, but the weapons still exist in their hundreds and even thousands, and new biological and physical technologies are under development with great destructive potential yet are barely under control. Beyond that is the less obvious but no less fundamental issue of living within biosphere capacity. If progress is made towards a markedly less weaponized, more sustainable and more equitable world during the course of this century, then those alive towards its end may well reach the conclusion that the necessary transformations in behaviour and attitude came to the fore not just in the last third of the period discussed here, 1945–2045, but perhaps even more specifically in the late 2010s and early 2020s. Let us hope they will be chronicled in this journal as it approaches its next milestone.

<sup>17</sup> Centre for Alternative Technology, <http://www.cat.org.uk/>; New Economics Foundation, <http://www.neweconomics.org/>; Finance Innovation Lab, <http://www.thefinancelab.org/>; Oxford Research Group, <http://www.oxfordresearchgroup.org.uk>, all accessed 30 Nov. 2013.