

# Slouching towards dystopia: the new military futurism

MATT CARR

*Abstract:* In recent years, the military establishments of the US and the UK have produced a series of reports that attempt to 'think the unthinkable' in imagining future threats to the security of the West. A new genre of military futurology has emerged which owes as much to apocalyptic Hollywood movies as it does to the cold war tradition of 'scenario planning'. Often outlandish and bizarre in its prophecies, and always dystopian, this new military futurism sees threats to the western way of life emanating not only from rogue states, weapons of mass destruction and terrorism but also from resurgent nationalism, conflicts over dwindling resources, migration, disease, organised crime, abrupt climate change and the emergence of 'failed cities' where social disorder is rife. This article provides a survey of the genre, showing how the grim predictions of the military futurists provide a justification for endless global war against enemies that may never exist.

*Keywords:* futurology, military-industrial complex, strategic studies, thinktanks, US hegemony

*Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know.*

Donald Rumsfeld<sup>1</sup>

---

Matt Carr is a writer and journalist living in Derbyshire. His latest book is *Blood and Faith: the purging of Muslim Spain 1492–1614* (London, Hurst, 2010).

*Race & Class*

Copyright © 2010 Institute of Race Relations, Vol. 51(3): 13–32

10.1177/0306396809354164 <http://rac.sagepub.com>

There was a time when the future was considered a subject for prophecy and science fiction rather than empirical analysis. From Jules Verne and H. G. Wells onwards, science writers have combined fantasy with a serious examination of what the future might contain. But it was not until the last decades of the twentieth century that futuristic speculation began to transcend the category of entertainment, with the emergence of the discipline variously known as futurology, futuristics or future studies. Defined by the *Encarta Dictionary* as 'the study and forecasting of the future, with predictions based on the likely outcomes of current trends', futurology first emerged as a popular non-fiction genre in the early 1970s, with Alvin Toffler's best-selling *Future Shock* and the Club of Rome's environmental wake-up call *Limits to Growth*. In 1972, the University of Houston established the first graduate programme in futurism and today a plethora of university departments, thinktanks and research centres across the world are dedicated to 'foresight' and the study of 'probable and preferable futures', such as the Copenhagen Institute for Futures Studies, the UK Horizon Scanning Centre, Foresight International and the World Future Society.

The military has also shown a keen interest in the study of the 'possible future' in the early twenty-first century, particularly in the United States. In 1997, the US National Intelligence Council (NIC) published *Global Trends 2010*, the first of three reports in its ambitious *2020 Project* that aims to predict the 'forces that will shape our world' over a two-decade period. In 2001, the prestigious US Air Force think-tank, the RAND Corporation, established the Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition. Since 2000, the US Joint Forces Command has published two studies of the international military and security environment over the next two decades and its implications for the military. Military and national security research institutions such as the US Army's Strategic Studies Institute (SSI) regularly stage conferences and symposia on 'Long Range Planning and Forecasting', 'Scenario Planning' and 'Projecting Future Battlespaces and Scenarios'.

These studies are not limited to purely military concerns. Military futurists also devote considerable attention to more mainstream futurological subjects, such as social and economic transformation, demographics, urbanism, cultural trends and climate change. What explains the military's interest in the future and what does this fascination tell us about the present? Military futurism is not a historical novelty in itself. Armies have routinely engaged in contingency planning ever since the German armed forces pioneered 'long range planning' in the late nineteenth century. Military futurism really came into its own during the cold war, when the RAND Corporation began conducting regular war games and simulations to predict the likely outcomes of nuclear and conventional military confrontations with the Soviet Union. In the 1950s and 1960s, RAND luminaries such as Herman Kahn, Leo Roster and Albert Wohlstetter built illustrious careers around 'scenario planning' and 'systems thinking', which attempted to provide US policymakers with the conceptual tools to anticipate 'alternate' or 'surprising' military futures by 'thinking the unthinkable'.

By the 1980s, forecasting, war-gaming and scenario planning had become routinely integrated into US military practice. While studies such as *Innovation Task Force 2025* (1988) and *AirLand Battle 2000* (1982) considered the transformation of the armed forces or rehearsed NATO war plans against the Warsaw Pact, others continued to explore the outer limits of the unthinkable future. One report published by the Department of Defense in the early years of the Reagan presidency imagined a nuclear war in which the White House, the Pentagon and much of civilisation were destroyed, but computers continued in the aftermath 'to run a war no human mind can control', directing space satellites, nuclear weapons and armies of robots 'that can gallop like horses and walk like men, carrying out computerised orders as they roam the radioactive battlefield'.<sup>2</sup>

Cold war military futurism also spilled over into the private sector. In 1961, Herman Kahn founded the Hudson Institute, a conservative thinktank and research centre which aspires to provide 'global leaders in government and business' with the tools to 'manage strategic transitions to the future'.<sup>3</sup> In the 1970s, Royal Dutch Shell pioneered the corporate use of scenario planning in the oil industry in response to what was perceived as a new climate of uncertainty and unpredictability following the OPEC oil embargo.

This overlapping nexus between the military and corporate futurism has continued ever since. Not only do the US military and the private sector share the same concern with geopolitical and international developments pertaining to US national security and the future of the capitalist world economy, but private companies and institutions specialising in scenario planning and risk management also work closely with the military in developing futuristic analyses. The Hudson Institute's Center for Political-Military Analysis produces regular studies for the military on the 'critical variables' and 'nonlinear forces' affecting international politics.<sup>4</sup> Both the Pentagon and the Department of Homeland Security have also commissioned futuristic studies from scenario planning specialists such as the Global Business Network (GBN) and the giant management consultancy firm Booz Allen Hamilton.

In 2006, Booz Allen won a \$32 million contract to provide the Pentagon's Training and Doctrine Command (TRADOC) with war-gaming materials and simulations, whose aim, according to the company spokesman, was to 'write the history of the future' and provide the Pentagon with a 'picture of the world between 2001 and 2025'.<sup>5</sup> All this is in keeping with the tradition developed by Kahn and his RAND colleagues but the new military futurism is also strikingly different from its predecessors. Where the cold war futurists were primarily concerned with the Soviet Union and scenario planning for nuclear war, twenty-first century futurists are concerned with very different 'threats' and 'challenges'. One of the most prolific producers of futurological studies is the Pentagon's Office of Net Assessment (ONA), an obscure but influential thinktank run by the veteran RAND intellectual and military futurist Andrew Marshall.

Each year, the ONA commissions dozens of studies from academics and thinktanks like the Hudson Institute and private consulting companies. Most of these reports are classified but the *talkingpointsmemo.com* website recently used the Freedom of Information Act to obtain an index of ONA publications. These

include titles such as *Pandora's Boxes: the mind of jihad* (June 2007), *Why they Won't Know What Hit Them: are Arabs thinking about the consequences of another 9/11* (July 2006), *Europe 2025: mounting security challenges amidst declining competitiveness* (September 2008), *Role of High Power Microwave Weapons in Future Intercontinental War* (July 2007) and even *German Liberals and the Integration of Muslim Minorities in Germany* (December 2006).<sup>6</sup>

These titles are an indication of the new concerns of contemporary military futurism. The new military futurists also differ from their predecessors in their generally grim perspective on the future. In *Rethinking the Unthinkable* (1963), Herman Kahn attempted to demonstrate that a nuclear war might not be survivable and therefore 'thinkable'. This scenario was intended to be positive – albeit from a hawkish foreign policy perspective – but contemporary military futurism is often extremely pessimistic in its depictions of the twenty-first century 'security environment'. Such pessimism is partly a reflection of the prevailing mood in the US national security establishment. Ever since the end of the cold war, US security analysts have argued that the US was vulnerable to attack by elusive and unpredictable enemies that were potentially more dangerous than the former Soviet Union.

Such predictions appeared to be confirmed by the catastrophic events of September 11. On the one hand, the 9/11 attacks were 'predictable', in the sense that an attack of some kind had been expected. At the same time, the attacks constituted what futurologists call 'wild cards', 'discontinuities' or 'surprising events with huge consequences', which force a new set of expectations about what the future might contain. Some US security analysts have since added the Iraq insurgency to the category of 'strategic shocks' and attributed the failure to predict it to the same 'failure of imagination' that helped make the 9/11 attacks possible. The result is a new willingness amongst the US national security establishment to consider further 'strategic shocks' by 'imagining the unimaginable' – a tendency which has generated imaginative scenarios that sometimes owe more to apocalyptic Hollywood movies, manga comics and science fiction than they do to sober analysis.

Faced with a future that seems fraught with unpleasant surprises, the Pentagon has embarked on some outlandish and even bizarre attempts to try to reduce the element of uncertainty and unpredictability. One ongoing project aims to recruit social scientists to compile a computerised database of cultural, religious and political beliefs in every country in the world that will supposedly enable the military to predict which countries are most likely to succumb to unrest, insurgency or terrorism. In 2002, the Pentagon's cutting edge Defense and Advanced Research Projects Agency (DARPA) came close to introducing a 'terrorism futures market' based on the financial futures market, which invited bets on when and where terrorist events were likely to occur in order to predict them beforehand. This scheme was abandoned when it was pointed out that some organisations might deliberately carry out attacks in order to profit from them. In 2007, DARPA awarded Lockheed Martin a contract to develop an 'Integrated Crises Early Warning System' (ICEWS) that its designers claimed

will 'anticipate and respond to worldwide political crises and predict events of interest and stability of countries of interest with greater than 80 percent accuracy' in the same way that meteorologists predict the weather.<sup>7</sup>

These initiatives cannot be attributed simply to an overzealous desire to protect the US 'homeland' from 'another 9/11'. The broad scope of contemporary military futurism is partly a consequence of changing concepts of warfare in the early twenty-first century, with its new emphasis on 'asymmetric' warfare, terrorism and insurgency across the global 'battlespace' rather than conventional wars between states. The commitment to 'fourth generation warfare' is fuelled by a new sense of the fragility and instability of the international state system, coupled with the belief that the nation-state in the early twenty-first century is increasingly vulnerable to global economic turbulence, civil and ethnic conflict and the violent activities of 'non-state actors' – all of which are perceived to pose threats to global security and even the future of globalisation itself.

The 'uncertainty', instability and risk that military futurists project onto the future not only emanates from nuclear-armed 'rogue states' or 'non-state actors', however. A recurring theme in military futurist scenarios concerns the possibility that the emergence of China, India and Brazil as major economic powers may be accompanied by a decline in US – and western – global hegemony and that the 'unipolar world' of the post-cold war era may be drawing to an end.

With the demise of the Soviet Union, US military thinking has been dominated by the concept of the 'Revolution in Military Affairs' (RMA) – a term used to describe periods of history in which one particular military power or group of powers outstrips all potential rivals. The display of US technological firepower in the first Gulf War convinced many military planners that this position is now occupied by the US. But this belief is often accompanied by a realisation of the limitations of US military power and anxiety that the RMA may not be permanent. The notion of the US RMA is often attributed to the Pentagon's 'futurist-in-chief' Andrew Marshall at the ONA. Celebrated as a visionary genius by his admirers and denounced as a paranoiac by his enemies, Marshall is a long-time associate of Donald Rumsfeld and Paul Wolfowitz, and was given a major role by Rumsfeld in the preparation of the 2002 *Quadrennial Defense Review*, which the US Armed Forces use as a medium-range planning guide to justify its budget requests to Congress.

That same year, Marshall commissioned an 85-page monograph for the ONA from Booz Allen Hamilton entitled *Military Advantage in History*, which studied some of the most successful military conquerors of the past for lessons on how the United States 'should think about maintaining military advantage in the twenty-first century'.<sup>8</sup> Though the study identified the United States as the 'dominant military power in the world', it nevertheless warned that such dominance might not be permanent and that 'barring a more innovative approach the process leading to its substantial erosion has already been set in motion'. To contribute to this process of innovation, the report sought inspiration from imperial conquerors such as Alexander the Great, Genghis Khan and particularly from Rome, whose 600-year dominance, the authors argued, 'suggests that it is

possible for the United States to maintain its military advantage for centuries if it remains capable of transforming its forces before an opponent can develop counter-capabilities'.<sup>9</sup>

Stripped of its anachronistic application of contemporary military jargon, its shallow scholarship and its unproblematic comparisons between the United States and previous empires, this document was essentially a variant on ONA futuristic studies such as *Preserving American Primacy* (January 2006) and *Preserving US Military Supremacy* (August 2001). The same objectives are shared by the neoconservative thinktank Project for the New American Century (PNAC) in its 2000 call for US military transformation, *Rebuilding America's Defenses*. The PNAC couples a boyish fascination with sci-fi weaponry with a strident insistence on the need to preserve US 'primacy', 'geo-political pre-eminence', 'dominance' and a 'global security order that is uniquely friendly to American principles and prosperity'.<sup>10</sup>

This determination to shape, control and 'dominate' the turbulent and conflict-prone twenty-first century in the foreseeable (and unforeseeable) future is a key component of the new military futurism. On the one hand, military futurism is a by-product of the megalomaniac military doctrine of 'full spectrum dominance'. At the same time, its predictions about the future express very real fears amongst the US ruling elite that the United States is inextricably connected to a world that may be slipping out of its control. Perhaps not surprisingly, therefore, the new military futurists are often considerably more pessimistic than their predecessors and tend to paint a very bleak future of an unsafe and unstable world that demands a constant military presence to hold it together. From Yevgeny Zemyatin's *We* to *Brave New World* and Orwell's *Nineteen Eighty-Four*, twentieth-century writers have used dystopian visions of the future as a warning or as a satirical commentary on the often lethal consequences of twentieth-century utopianism. The dystopias of the new military futurists have a very different purpose. The US military often tends to perceive itself as the last bastion of civilisation against encroaching chaos and disorder. The worse the future is perceived to be, the more these dark visions of chaos and disorder serve to justify limitless military 'interventions', techno-warfare, techno-surveillance and weapons procurement programmes, and the predictions of the military futurists are often very grim indeed.

### Dark skies

The new military futurism is not universally pessimistic and even its worst-case scenarios are often qualified within a sliding scale of probability. But its determination to leave no possibility unexplored often results in a spectacularly bleak picture of the 'near future'. Consider the following scenario outlined in *Known Unknowns: unconventional 'strategic shocks' in defense strategy development*, a study published in 2007 by the US Army's Strategic Studies Institute (SSI):

Threats of context might include but are not limited to contagious un- and under-governance; civil violence; the swift catastrophic onset of consequential

natural, environmental, and/or human disaster; a rapidly expanding and uncontrolled transregional epidemic; and the sudden crippling instability or collapse of a large and important state. Indeed, pushing at the boundaries of current convention, it would be prudent to add catastrophic dislocation inside the United States or homegrown domestic civil disorder and/or violence to this category as well.<sup>11</sup>

Written by Nathan Freier, a professor at the SSI and a former consultant to the US military in Iraq, this study considered a number of 'unconventional threats' to the United States in a future security environment characterised by 'the unguided forces of globalisation, toxic populism, identity politics, underdevelopment, human natural disaster, and disease'. The study also considered more 'conventional' threats, including the possibility that a 'China-Russia axis' might instigate 'a new era of containment with the United States as the nation to be contained'.

China generally features in futurist analyses as an economic rather than a military competitor but a 2008 study produced by the Center for Strategic and Budgetary Assessment (CSBA), *Strategy for the Long Haul: Special Operations Forces: future challenges and opportunities*, argued that Chinese military power was growing to the point when it might eventually 'threaten the United States' access to the "global commons" of space, cyberspace, the air, the seas and the undersea, and possibly to US ally and partner nations in Japan, South Korea and Taiwan'.<sup>12</sup> In these circumstances, US Special Forces might be required to mount 'large-scale, overt unconventional warfare operations on China's periphery to open up additional fronts'.<sup>13</sup> For the most part, the CSBA study predicts that US Special Forces will be largely devoted to 'persistent air and maritime surveillance and strike coverage over "under-governed areas" and littoral zones'.<sup>14</sup> The US Joint Forces' *Joint Operating Environment 2008* (JOE), published the same year, also predicts that the US military would face 'threats and opportunities ranging from regular and irregular wars in remote lands, to relief and reconstruction in crisis zones, to sustained engagement in the global commons' over the course of the next quarter of a century.<sup>15</sup> Its hypothetical scenarios include the possibility of armed conflict over access to water and diminishing energy resources, the disintegration of the 'arc of instability' ranging across North Africa to South-East Asia into an 'arc of chaos', the 'collapse of governing authority, migrations, societal collapse, and social disorder', as a result of famine and hunger and the potential emergence of Pakistan and Mexico as 'failed states'.<sup>16</sup>

The prospect of state collapse features in many military futurist documents, such as the US National Intelligence Council's *Mapping the Global Future* (2004), whose 'possible futures' included the prospect that 'lagging economies, religious extremism, and youth bulges will align to create a perfect storm for internal conflict'.<sup>17</sup> Drawing on expertise from military and corporate institutions that included the RAND Corporation, the UK's Joint Doctrine and Concepts Centre and 'global scenarios' analysts from Shell International, the report described an international context with unprecedented 'state of flux' and identified various

'challenges to governance' that were likely to emerge in the near future, from a widening global gap between 'haves and have nots' to continuing 'pockets of poverty' within rich nations.<sup>18</sup> It was thought not impossible, in this context, that globalisation might become 'derailed' as international crime, terrorism, economic stagnation, religious fanaticism and state collapse combine to generate 'a pervasive sense of economic and physical insecurity' within two decades, leading to an upsurge of civil war, ethnic conflict, terrorism and genocidal violence in the Third World.<sup>19</sup> Terrorism and weapons of mass destruction are recurring components in the dystopian military imagination and the National Intelligence Council (NIC) report was no exception. One scenario imagined a cascade of disastrous events, in which a 'bioterrorist' attack on the United States leads to a 'cycle of fear' that inadvertently brings about the collapse of globalisation, as governments introduce draconian security measures and rigid border controls.<sup>20</sup>

These scenarios were dramatised by fictional vignettes, such as a letter from the 'Head of the World Economic Forum' in January 2020 which tells a 'former US Federal Reserve Chairman':

At the turn of the century, we equated globalization with Americanization. America was the model. Now globalization has more of an Asian face and, to be frank, America is no longer quite the engine it used to be. Instead the markets are now oriented eastwards.<sup>21</sup>

Another 'hypothetical letter' written by a fictional grandson of Osama bin Laden to a relative in the year 2020 describes al-Qaida's creation of a partial Islamic Caliphate in an unnamed Middle Eastern country. Though bin Laden's project has not been fully realised, the letter recalls:

Oh, what confusion did we sow with the Crusaders. An almost forgotten word reentered the Western lexicon and histories of early Caliphs suddenly rose to be bestsellers on Amazon.com. They had been so smug in thinking we had to trudge the same well-worn path behind them towards secularism if not outright conversion to the so-called Judeo-Christian value system. Can you imagine the look on their faces as Muslim athletes at the Olympics eschewed their national loyalties and instead proclaimed their allegiance to the Caliphate?<sup>22</sup>

Such fictions may not rank as high art but they reveal a great deal about the anxieties and assumptions underpinning military and national security futurism. Similar 'what if' counterfactuals were deployed in the NIC's 2008 report, *Global Trends 2025: a transformed world*, whose future projections included a global regression to a '19th century-like scenario of arms races, territorial expansion, and military rivalries' in which 'resource nationalism' leads to 'unintended escalation and broader conflict'.<sup>23</sup> Though the US would retain its ability to 'project military power globally', the study predicted that US influence would probably decline as China and India emerged as regional powers.<sup>24</sup> In addition,

the United States might face an array of threats, not only from 'advanced states' using 'counterspace strikes, network attacks and information warfare' but from new 'failed states' such as Pakistan and Mexico.<sup>25</sup> Other potential 'discontinuities, shocks and surprises' included an 'extreme weather event' – a possibility illustrated by a 'Presidential Diary Entry' dated 1 October 2020, in which the US president describes the recent flooding of New York and the abandonment of the New York Stock Exchange, accompanied by mass evacuations which resemble 'the stuff from World War II newsreels'.<sup>26</sup>

This was not the first time that the US military and security analysts considered the future security implications of climate change. In 2003, the ubiquitous Andrew Marshall commissioned a study for the Department of Defense from the Global Business Network entitled *An Abrupt Climate Change Scenario and its Implications for United States National Security*. Written by Doug Randall and Peter Schwartz, a former CIA consultant and head of planning at Royal Dutch Shell, the report imagined the repetition of a 'cooling event' that took place 8,200 years ago, when falling temperatures caused crop failure, famine and mass migration throughout Europe.<sup>27</sup>

The report imagined a similar process unfolding from the year 2010 onwards, in which storms, typhoons and rising sea levels lead to food shortages, disrupted energy supplies and a lack of available fresh water, not only in Asia but also in northern Europe, where weather conditions come to resemble Siberia. As Europe succumbs to famine, disease and mass migration, and China descends into civil war, the report predicted that some nations 'may build virtual fortresses around themselves, preserving resources for themselves', including the United States, whose 'borders will be strengthened to hold back unwanted starving immigrants from the Caribbean islands'.<sup>28</sup> Other countries might go to war – including nuclear war – to secure or gain access to diminishing resources, so that warfare once again comes to 'define human life' and 'disruption and conflict will be endemic features of life'.<sup>29</sup>

These astonishing, grim predictions were strikingly at variance with the complacent attitude towards climate change emanating from the Bush administration at the time. Though the 'new ice age' scenario became the basis for the disaster movie *The Day After Tomorrow*, the report was criticised by scientists, such as Wallace Broecker of Columbia University, who accused the authors of making exaggerated claims.<sup>30</sup> Though its authors insisted that their worst-case scenarios were purely hypothetical, they nevertheless urged the government to develop 'no-regrets strategies' to deal with them in order to 'ensure reliable access to food supply and water, and to ensure national security'.<sup>31</sup> It is not known if these recommendations were acted upon but the fact that the Pentagon commissioned such a report is another indication of the determination of the military to contemplate the 'unthinkable'.

The most comprehensive – and certainly the most imaginative – example of military futurism is contained in *Strategic Trends* (2006), produced by the Development, Concepts and Doctrine Centre (DCDC) of the UK Ministry of Defence. Drawing on consultations with military experts, scientists and

academics from various disciplines, the report considered an extraordinarily wide range of possible futures, in an attempt to anticipate the 'discontinuities, insecurities and volatilities' that its authors saw as inherent to the early twenty-first century.<sup>32</sup>

Some of these predictions were uncontroversial. Few readers, even then, would have dismissed the possibility of a 'failure of the global financial system' or even a resurgence of 'anti-capitalist ideologies, possibly linked to religious, anarchist or nihilist movements, but also to populism and the revival of Marxism'.<sup>33</sup> But the report also considered 'strategic shocks' that would not have been out of place in the fictional worlds of William Gibson or J. G. Ballard, such as the possibility that 'synthetic telepathy' would facilitate 'mind-to-mind or telepathic dialogue' and the invention of information and entertainment devices that could be 'wired directly to the user's brain'.<sup>34</sup> Another scenario posited that advances in genetic research might lead to the 'super-enhancement of human attributes, including physical strength and sensory perception' – a development that could make it possible for 'dictatorial or despotic rulers' to 'buy longevity'.<sup>35</sup> Nor did the authors discount the possibility that the enemies of the West might invent an unspecified super-weapon or 'magic bullet' that would be 'effective against a wide range of targets and against which established countermeasures are ineffective'.<sup>36</sup>

If some of these futuristic possibilities went further than their US counterparts, the report shares the generally pessimistic mood of US military futurism in its prediction of a deteriorating security climate characterised by 'endemic internalised violence', terrorism and the spread of 'ungoverned spaces' across the world.<sup>37</sup> In addition to the usual threat of 'Islamist terrorism', the authors consider the possibility that 'the middle classes could become a revolutionary class, taking the role envisaged for the proletariat by Marx'.<sup>38</sup> Like the alienated Chelsea professionals in J. G. Ballard's *Millennium People*, these middle-class rebels might turn to violence out of boredom and form a 'terrorist coalition of the willing' made up of 'reactionary and revolutionary negationists, such as ultra-nationalists, religious groupings and even extreme environmentalists' that would use modern communications technology to engage in 'Rapid Mass-Mobilisation' and summon up violent 'flash mobs' in cities across the world.<sup>39</sup>

### Feral cities

Like many military futurists, the authors of *Strategic Trends* are particularly pre-occupied with the security implications of explosive urbanisation in the global South and warn that rural migrants to the slums and shantytowns of Third World cities may lose their traditional markers of cultural and religious identity and fall prey to criminal gangs, nationalists and religious zealots. Some of the larger conurbations may experience 'mega city failure', leading to 'Endemic Urban-Based Irregular Conflict' so that western armies may be forced to confront 'future adversaries who have highly-developed urban survival and combat skills' operating from 'sprawling towns and cities which will already have experienced endemic lawlessness and high levels of violence'.<sup>40</sup> Such 'ungoverned' cities may

form a 'shadow international system' associated with 'criminality, terrorism, disorder and insurgency, fuelled by nominal or actual grievance, deprivation and resentment, or simply in reaction to market forces or boredom'.<sup>41</sup>

This image of the city as the primary battleground of the future is a key element in the military dystopia. In these images of the 'broken' cities of the future, military futurism really shows its debt to science fiction, in its fusion of contemporary urban battlegrounds such as Mogadishu and Fallujah, the blighted slums of Sao Paulo, Rio de Janeiro and Port-Au-Prince with the ravaged cinematic cityscapes of *Robocop*, *Escape from New York*, *Mad Max* and video games such as *Shadowrun: feral cities*, whose designers promise exciting virtual combat in 'decaying urban wilds, war-torn cityscapes, and cancerous megabarrens' in which 'the usual rules and constants of civilized society don't apply'.<sup>42</sup>

Compare this depiction with the image of the twenty-first century city contained in a widely discussed 2003 article in the *US Navy War College Review* entitled 'Feral cities - the new strategic environment' by Richard K. Norton, a former naval commander and national security analyst:

Imagine a great metropolis covering hundreds of square miles. Once a vital component in a national economy, this sprawling urban environment is now a vast collection of blighted buildings, an immense petri dish of both ancient and new diseases, a territory where the rule of law has long been replaced by near anarchy in which the only security available is that which is attained through brute power. Such cities have been routinely imagined in apocalyptic movies and in certain science-fiction genres, where they are often portrayed as gigantic versions of T. S. Eliot's *Rat's Alley*. Yet *this* city would still be globally connected. It would possess at least a modicum of commercial linkages, and some of its inhabitants would have access to the world's most modern communication and computing technologies. It would, in effect, be a feral city.<sup>43</sup>

These environments, Norton argued, were likely to become an increasingly common battlespace for the US military in the future. Infested with 'criminals, armed resistance groups, clans, tribes, or neighbourhood associations', these cities would 'exert an almost magnetic influence on terrorist organizations' so that 'relatively small groups might acquire weapons of mass destruction' without being detected.<sup>44</sup> Since the feral city 'would be in effect a toxic-waste dump, poisoning coastal waters, watersheds, and river systems throughout their hinterlands', the elimination of these groups would require major combat operations in which casualties 'from pollutants, toxins, and disease may well be higher than those caused by the enemy'.<sup>45</sup>

Where are these cities to be found? In addition to *Black Hawk Down* Mogadishu, Norton mentions potential future contenders such as Mexico City, Johannesburg and Rio de Janeiro. Writing in the immediate aftermath of the invasion of Iraq, he also suggests that some Iraqi cities such as Nasiriyah might already have reverted to 'feraldom'. Such cities, Norton argued, would constitute 'one of the

more difficult security challenges of the new century' and 'may prove as common a feature of the global landscape of the first decade of the twenty-first century as the faltering, failing, or failed state was in the last decade of the twentieth'.<sup>46</sup>

By the middle of the century, more than half of the world's population will be living in large conurbations, many of which will have more than ten million inhabitants. Some cities or neighbourhoods have already become semi-autonomous enclaves, whose inhabitants lack jobs, adequate housing and the most basic services. A number of these cities are either badly policed or not policed at all and some have effectively fallen outside the control of the state. In Brazil in 2006, armed gangs calling themselves the First Capital Command staged a semi-uprising in Sao Paulo in support of the treatment of their members in Brazilian jails and staged some 250 separate armed attacks in a single weekend that reduced much of the city to chaos. In Mexico in recent years, the death toll in violence between heavily-armed drug gangs has reached wartime levels and prompted the intervention of the Mexican army.

Given these developments, it is not impossible to imagine that some of the elements in Norton's dystopia might occur. But what is striking about the military dystopian imagination is not just the dark future that it conjures up but the assumptions that underpin its conclusions. The *Oxford Dictionary* defines 'feral' as 'wild, untamed, uncultivated, brutal'. All these adjectives describe the violent and diseased populations of Norton's feral cities. Like mutant creations of H. P. Lovecraft crossed with extras from *Black Hawk Down*, they have regressed to a pre-modern state of nature that no longer responds to anything but military force. In effect, Norton's depictions of the feral city recall an older dichotomy between civilisation and barbarism, cleanliness and defilement, law and disorder that has often been replayed in western depictions of the wider world and which can still be found in the writings of Military Operations On Urban Terrain (MOUT) specialists, with their references to the 'dark places', 'cess-pools', 'dense urban jungles' where US soldiers will fight the 'hybrid wars' of the future.

On the one hand 'explosive urbanisation' is a problem that can only be solved by military 'intervention' on a global scale. At the same time, these toxic urban environments are perceived as obstacles to US military supremacy. In a prize-winning essay for the Marine Corps essay contest, Major Kelly P. Southgate laid out the dilemma:

By 2020, 85 per cent of the world's inhabitants will be crowded into coastal cities – cities generally lacking the infrastructure required to support their burgeoning populations. ... Likely US enemies include a wide array of possibilities: al Qaeda terrorists; dictatorial strongmen; drug cartels; or perhaps tribal/ethnic strife leading to humanitarian crises. These potential adversaries realize that fighting high-tech U.S. forces in open terrain is suicidal, and thus enemies will tend to operate in cities and towns, attempting to use the urban terrain to neutralize U.S. technology.<sup>47</sup>

The *Joint Operating Environment 2020* also predicts that 'it is almost inevitable that joint forces will find themselves involved in combat or relief operations in cities' and: 'If there is no alternative than to fight in urban terrain, joint force commanders must prepare their forces for the conduct of prolonged operations involving the full range of military missions.'<sup>48</sup> In this environment, the JOE authors note: 'The very density of building and population will inhibit the use of kinetic means, given the potential for collateral damage as well as large numbers of civilian casualties. Such inhibitions could increase US casualties. On the other hand, any collateral damage carries with it difficulties in winning the "battle of the narrative".'<sup>49</sup>

Faced with a barbaric enemy who hides among civilians and 'seeks the city' in order to avoid detection and elimination by superior technology, the US military has already begun to seek ways to regain the upper hand and 'own the city' in the future. In 1997, the US Marines Corps Warfighting Laboratory designed a war-game entitled *Urban Warrior* set in a hypothetical 'urban littoral' that would be characterised by 'social, cultural, religious and tribal strife between different groups. Many areas will have scarce resources, including the most basic ones like food and shelter as populations grow and resources shrink even faster.'<sup>50</sup>

This Hobbesian 'urban littoral' is already being regarded in the US military – and by sections of the US media – as if it were inevitable. 'As cities around the world descend into disorder, the United States will have to step up training local militaries to undertake armed interventions', warned the *New York Times* journalist Ken Stier in an article on 'Feral cities' in 2007.<sup>51</sup> That same year, the US Joint Forces Command began an elaborate three-phased simulation called *Operation Urban Resolve 2015*, which attempted to assess the ability of the military to operate in a large conurbation modelled on Baghdad. In the simulation, a 'blue team' of 300 agents were required to track and eliminate a 'red team' of 3,000 'insurgents' in Baghdad in the year 2015. Advanced computer technology was used to create a synthetic urban environment replete with buildings, cars, pedestrians and a population of '110,000 discrete person-entities ... displaying culturally-appropriate behaviours'. Even the traffic flows were 'culturally-specific' so that 'traffic and civilian presence increased around mosques at the appropriate times for daily prayers'<sup>52</sup> in a setting, according to the Pentagon news service TRADOC, that 'can be tailored to resemble any major urban area from Iraq to Indonesia'.<sup>53</sup>

Whether military futurists are thinking of Baghdad, Jakarta or Johannesburg, they tend to take it for granted that the military – and the US military in particular – will be the inevitable and indispensable solution to these 'broken' mega-cities, fighting an array of 'conflict entrepreneurs' and 'hostile behaviour bad actors' whose ranks may include insurgents, drug dealers, serial killers, paramilitaries or the 'angry crowds' that the US Army Urban Operations manual includes amongst its list of 'persistent and evolving urban threats'.<sup>54</sup>

The military has been preparing to confront these threats for some time. In 1999, 6,000 marines and 700 sailors carried out a four-day 'assault' and occupation of a defunct naval base in Oakland, California, to rehearse '3 block war in 3 dimensions'. The concept of '3 block war' refers to the ability to simultaneously combine

'humanitarian relief' with other activities such as riot suppression and actual combat in the same urban area. The '3 dimensions' refer to buildings, streets and underground tunnels and sewers where marines conducted operations amongst a hired urban population of local people playing various roles from refugees and angry civilians to journalists.

Since then, the 'urban shift' in US military thinking has been given a new urgency by the Iraq war. At the Marine Air Ground Combat Center in Twenty-Nine Palms, California, soldiers undergo a one-month training course known as 'Project Mojave Viper' to prepare them for urban operations in Iraq in two mock-up Iraqi 'cities' built from shipping containers called 'Wadi al Sahara' and 'Khalidiyah'. There, soldiers rehearse live-fire operations, clearing buildings and the detection of improvised explosive devices in an orientalist theme-park setting that includes mosques, shops with Arabic writing and a population of bearded marines and civilian 'extras', many of whom are Iraqi exiles receiving \$150 per day for posing as the local population and/or Iraqi insurgents.<sup>55</sup>

The US Marine Corps is currently constructing an even larger 'Combat City' to rehearse 'Combined-Arms Military Operations On Urban Terrain' (CAMOUT) at the Marines Corps Air Ground Combat Center in the California desert. The city will eventually have 1,560 'buildings' organised in seven districts, including a hospital, two embassies, a soccer stadium, a shantytown with a rubble-strewn 'east district' in imitation of 'the Green Line area in Beirut and Mogadishu', and an 'Old Town', which will, according to its 'mayor', be 'Middle Eastern, very dense with narrow streets and residential courtyards based on Sadr City'.<sup>56</sup>

The Israeli Army has built a similar 'city' at the IDF's National Urban Training Center in the Negev desert, only a few miles from the Gaza Strip, where Israeli troops prepare for urban warfare in an adjustable urban environment that can be rebuilt for specific operations in the Occupied Territories, Lebanon or Syria. The construction of 'Baladia City' was part-financed by the United States and US soldiers en route for Iraq are eventually expected to train alongside the Israeli army in a mock Arab 'Casbah' fitted out with explosive devices and snipers, and populated by Israeli military graduates of Arabic language and culture programmes posing as civilians and enemy fighters. Here, according to the *Marine Corps Times*, Israeli and US soldiers will rehearse the wars of the future and hone skills such as 'breaking the geometry', which one Israeli officer described as 'literally bursting through walls, penetrating in zigzag, worm-like fashion'.<sup>57</sup>

These tactics were first evolved by the Israeli military during the second Palestinian intifada, when Ariel Sharon directed the army to enter Palestinian refugee camps. Rather than follow the 'geometry' of streets and alleyways in conventional 'linear' formation, the IDF took to blowing holes through the walls of Palestinian homes and converging on their targets from unexpected directions. The Israeli architect Eyal Weizman has described how Palestinian refugee camps were perceived by the Israeli armed forces through a 'simplified geographic imaginary as evil and dangerous places, "black holes" that the IDF dare not enter'.<sup>58</sup> Military futurism often depicts the feral cities and 'ungoverned' urban spaces of the future through the same 'geographic imaginary'. Such cities are

'black holes' in the international system, zones of hostility and disorder to be encircled, contained and subdued. Already the treatment meted out to the Palestinians has been extended to other towns and cities in Iraq, Lebanon and beyond, and other cities may yet be visited by the forces of law and order, as the Pentagon continues to pursue what Mike Davis calls 'an unlimited low intensity war of unlimited duration against criminalised segments of the world's poor'.<sup>59</sup>

### **'Owning' the future**

The growing symbiosis between the US and Israeli military is partly the result of overlapping enemies, battlefronts and tactics in their mutual 'wars of terror'. But the search for expertise in urban warfare is another indication of the US military's determination to 'own' the future by preparing for any eventuality. Bolstered by the huge military budgets of the Bush administration, the Pentagon has been researching and developing a range of advanced technologies to enable its forces to dominate the global 'battlespace' of the future, from robotics, drones and Unmanned Aerial Vehicles (UAVs), thermobaric fuel-to-air weapons, bunker-busting 'mini-nukes' and space-based missiles to the Pentagon's 'Prompt Global Strike' programme, which plans to re-arm submarine-based Trident II missiles with conventional warheads and make it possible 'to strike virtually anywhere on the face of the Earth within 60 minutes'.<sup>60</sup>

Some of these weapons are specifically designed to respond to non-military 'challenges to governance'. The California-based aerospace and defence company ATK Mission Research Corporation is experimenting with Pulsed Energy Projectiles (PEPs), which use microwave beams to direct exploding plasma at their targets, causing pain and temporary paralysis. According to a Department of Defense presentation, such weapons 'can literally chew through target material' and are adaptable for a range of 'military operations other than war' including crowd control, law enforcement and 'area denial'.<sup>61</sup>

Research into non-lethal weaponry now absorbs an estimated \$50 million annual budget in the United States. On the one hand, such research reflects the US military's perception of itself as a militarised law enforcement agency, for which laser beams, tasers, acoustic devices, microwave technology and laser-induced artificial barriers such as the 'Portal Denial System' offer politically attractive alternatives to brute force in pursuit of its 'global constabulary' duties. At the same time, such technologies have led police forces in a number of countries to become increasingly militarised in their own responses to political protest and civil unrest, a phenomenon that was already evident at the anti-globalisation protests in Seattle and Genoa.

In 2005, the UN Special Rapporteur expressed concern at the number of countries developing non-lethal weaponry 'for the purpose of crowd control by law enforcement' and this tendency is likely to continue in tandem with military research into such weapons.<sup>62</sup> The technologies developed by Taser International, the company which invented the Taser, include an 'Area Denial and Force Protection System' capable of directing multiple electric shocks at rioters and

crowds across a 20-yard arc; a promotional video promises the possibility to 'drop everyone in a given area to the ground with a simple push of a button'. The company is also promoting an electrified shotgun round known as the Taser XREP that sticks to the body without the need for connecting wires, inducing twenty seconds of 'neuro-muscular incapacitation'.<sup>63</sup> Though its designers have presented the XREP as a utopian alternative to the bullet as the 'primary means of resolving inter-personal conflict' in the twenty-first century, some critics have voiced concerns about how humane and 'non-lethal' such weapons really are and expressed concerns that such technology may be leading the world closer to the police-driven society depicted in the sci-fi epic *Minority Report*, in which police use 'sonic guns' and 'sickguns' to immobilise criminals and lawbreakers.<sup>64</sup>

Such criticisms have had little impact on the military's preparations for the worst of all worlds. The Pentagon is currently seeking contractors to provide a 'Multi-Robot Pursuit System' that would enable packs of robots to 'search for and detect a non-cooperative human' - a proposal that Steve Wright, a robotics expert at Leeds University, described as 'the beginnings of something designed to enable robots to hunt down humans like a pack of dogs'.<sup>65</sup>

All these preparations may be paving the way for a future every bit as inhospitable for human beings as the one they are supposedly intended to prevent. Elements of the coming future can already be glimpsed in the 'ungoverned spaces' of Iraq, Afghanistan and Pakistan's north-west territories and they may be coming closer to the US 'homeland'. In December 2008, the *Joint Operating Environment 2008* study warned that 'any descent by Mexico into chaos would demand an American response based on the serious implications for homeland security alone'.<sup>66</sup> In March 2009, US Joint Chiefs of Staff Admiral Michael Mullen visited Mexico to discuss US military aid to the Mexican army in its spiralling operations against drug traffickers. According to Mullen, such assistance would focus on 'intelligence, surveillance and reconnaissance' drawing on 'lessons' and 'capabilities' acquired 'over the last three or four years in our counterinsurgency efforts as we have fought terrorist networks'.<sup>67</sup>

In January 2009, US Homeland Security Director Michael Chertoff announced contingency plans for an Iraq-style military 'surge' to deal with the cartels, involving 'aircraft, armored vehicles and special teams to converge on border trouble spots, with the size of the force depending on the scale of the problem'.<sup>68</sup> Barack Obama has so far resisted calls to militarise the Mexican border but there is no reason to think that he will do so indefinitely, as the military continues to present itself as the antidote to every social and political problem and morphs terrorism, insurgency and crime in its visions of the coming disorder. The depictions of Mexico as a security threat and source of chaos tend to ignore the role of US society in spreading violence south of the Rio Grande, whether it is the insatiable American appetite for narcotics, the disastrous impact of the NAFTA on the Mexican poor, the massive traffic of automatic weapons from the US into Mexico or the participation in the drug cartels of former soldiers trained by the US military itself.

These connections are no more likely to appear in the writings of military futurists than the contribution of US drone attacks to the destabilisation of the Federally Administered Territories in Pakistan. But military intervention may not be confined to the 'dark places' in the global 'littoral'. In 2002, the US Army's Northern Command (NorthCom) was established to 'provide command and control for federal homeland defense efforts and coordinate defense support of civil authorities'.<sup>69</sup> The 'known unknowns' in the SSI's 2007 study included the possibility that 'violent, strategic dislocation' might occur inside the United States.<sup>70</sup> In these circumstances: 'Widespread civil violence inside the United States would force the defense establishment to reorient priorities in extremis to defend basic domestic order and human security.'<sup>71</sup> In the most extreme circumstances, the study argued, domestic emergencies such as 'unforeseen economic collapse, loss of functioning political order, purposeful domestic resistance or insurgency', might require 'use of military force against hostile groups inside the United States' in which the Department of Defense acted as the 'enabling hub for the continuity of political authority in a multi-state or nationwide civil conflict or disturbance'.<sup>72</sup>

In a period in which global economic collapse has already been followed by violent protests in many countries, this possibility is less far-fetched than it may have seemed at the time. In January 2006, KBR, the engineering and construction subsidiary of the Halliburton group, was awarded a \$385 million contract by the Department of Homeland Security to expand the Detention and Removal Operations Program facilities of Immigration and Customs Enforcement (ICE). The expansion, according to the company's press release, was intended to deal with civil emergencies such as 'an emergency influx of immigrants into the US'.<sup>73</sup> In December 2008, the Pentagon announced its intention to deploy 20,000 troops from the Third Infantry Division's First Brigade Combat Team in the United States itself to respond to domestic emergencies such as a nuclear attack or other catastrophe. According to the *Army Times*, these soldiers would be equipped with 'the first ever nonlethal package that the Army has fielded', using equipment previously tested in Iraq, such as tasers, 'beanbag bullets', spike strips for stopping cars, shields and batons. The Brigade's commander hailed what he called a 'noble mission' to 'take care of citizens at home'.<sup>74</sup> But critics have raised the question of whether such preparations depart from a long-established US tradition, enshrined in the 1878 Posse Comitatus Act, which limits the deployment of the military within the United States.

Such developments are nevertheless entirely in keeping with the US military's perception of itself as the last barrier against global disorder – a role which is clearly not limited to the 'feral cities' of the global South. US military strategies cover a wide gamut. At one end, there are the counterinsurgency intellectuals of the Iraqi 'surge', such as the Australian army officer David Kilcullen. At the other, there is the neoconservative pundit and former army officer Ralph Peters, the General Sherman of the war on terror, for whom the wars of the future are won by attrition and mass killing. In a discussion paper written for the NIC's *2020 Project*, Peters urged the US military to abandon its moral and ethical scruples and engage

in merciless 'virtuous destruction' since 'there is no substitute for shedding the enemy's blood in adequate quantities'.<sup>75</sup> Mass killing should not be limited by any attempts to spare the enemy's infrastructure, since:

Such a policy not only complicates the achievement of victory, but extracts no serious price from the population. Consequences matter. Enemy populations must be broken down to an almost childlike state (the basic-training model) before being built up again. But war cannot be successfully waged – especially between civilizations, as is overwhelmingly the case at present – without inflicting *memorable* pain on the enemy.<sup>76</sup>

In the course of the twentieth century, unchecked militarism killed millions of human beings, destroyed entire cities and placed the existence of humanity in jeopardy. Today, as the Pentagon seeks to use its vast military budgets to populate the future with robot armies, super soldiers and airborne drones that 'see' inside buildings and kill their occupants, the dark visions of the military futurists are providing a justification for endless global war against enemies that may never exist. In doing so, they are laying the foundations for a militarised and weaponised future, even as they shape the wars and conflicts of the present. All this suggests, if nothing else, that the future is too important to be left to the military. And if we are to avoid the bleak dystopias that the military futurists would impose upon us, we need, perhaps more than ever, to work towards a future where human beings, not robots and soldiers, can find their place on earth.

## References

- 1 Press conference at NATO headquarters, Brussels, Belgium, 6 June 2002.
- 2 Tim Weiner, 'The dark secret of the black budget – Pentagon's defense budget', *Washington Monthly* (May 1987).
- 3 <[http://www.hudson.org/learn/index.cfm?fuseaction=mission\\_statement](http://www.hudson.org/learn/index.cfm?fuseaction=mission_statement)>.
- 4 <<http://cfss.hudson.org/index.cfm?fuseaction=mission>>.
- 5 <[http://www.boozallen.com/consulting-services/services\\_article/981533?tid=934306](http://www.boozallen.com/consulting-services/services_article/981533?tid=934306)>.
- 6 Justin Elliott, 'Exclusive: inside the Pentagon's idea factory', *talkingpointsmemo.com*, <[http://tpmmuckraker.talkingpointsmemo.com/2009/03/inside\\_the\\_pentagons\\_idea\\_factory\\_office\\_of\\_net\\_as.php](http://tpmmuckraker.talkingpointsmemo.com/2009/03/inside_the_pentagons_idea_factory_office_of_net_as.php)>.
- 7 Noah Shachtman, 'Pentagon forecast: cloudy, 80% chance of riots', *Wired Danger Room* (9 November 2007), <<http://www.wired.com/dangerroom/2007/11/lockheed-peers>>.
- 8 Mark Herman, Patrick Gorman, David Gallina, Juli MacDonald, Robert Ryer, *Military Advantage in History* (Washington, DC, Office of the Secretary of Defense for Net Assessment, 2002), p. 79.
- 9 *Ibid.*, p. 82.
- 10 Project for the New American Century, *Rebuilding America's Defenses: strategy, forces and resources for a new century*, <<http://www.newamericancentury.org/RebuildingAmericasDefenses.pdf>>.
- 11 Nathan Freier, *Known Unknowns: unconventional 'strategic shocks' in defense strategy development* (Carlisle, PA, Strategic Studies Institute, 2008).
- 12 Robert Martinage, *Strategy for the Long Haul: Special Operations Forces: future challenges and opportunities* (Washington, DC, Center for Strategic and Budgetary Assessment, 2008), p. viii.
- 13 *Ibid.*, p. xii.
- 14 *Ibid.*, p. xii.

- 15 United States Joint Forces Command, *The Joint Operating Environment 2008: challenges and implications for the future Joint Force* (Suffolk, VA, United States Joint Forces Command, 2008), <<http://www.jfcom.mil/newslink/storyarchive/2008/JOE2008.pdf>>, p. 3.
- 16 *Ibid.*, pp. 16, 18, 19.
- 17 *Mapping the Global Future: report of the National Intelligence Council's 2020 project* (Pittsburgh, PA, National Intelligence Council, December 2004), <<http://www.foia.cia.gov/2020/2020.pdf>>, p. 14.
- 18 *Ibid.*, pp. 8–11.
- 19 *Ibid.*, p. 30.
- 20 *Ibid.*, p. 16.
- 21 *Ibid.*, p. 41.
- 22 *Ibid.*, p. 86–7.
- 23 *Global Trends 2025: a transformed world* (Pittsburgh, PA, National Intelligence Council, November 2008), <[http://www.dni.gov/nic/NIC\\_2025\\_project.html](http://www.dni.gov/nic/NIC_2025_project.html)>, pp. v–vi.
- 24 *Ibid.*, p. 97.
- 25 *Ibid.*, p. 97.
- 26 *Ibid.*, p. 58.
- 27 Peter Schwartz and Doug Randall, *An Abrupt Climate Change Scenario and its Implications for United States National Security* (San Francisco, CA, Global Business Network, October 2003), <[http://www.edf.org/documents/3566\\_AbruptClimateChange.pdf](http://www.edf.org/documents/3566_AbruptClimateChange.pdf)>.
- 28 *Ibid.*, pp. 2, 18.
- 29 *Ibid.*, pp. 17, 22.
- 30 Fred Pearce, 'Scientists stirred to ridicule ice age claims', *New Scientist* (15 April 2004), <<http://www.newscientist.com/article/dn4888-scientists-stirred-to-ridicule-ice-age-claims.html>>.
- 31 Schwartz and Randall, *An Abrupt Climate Change Scenario*, op. cit., p. 22.
- 32 *The DCDC Global Strategic Trends Programme 2007–2036* (London, Development, Concepts and Doctrine Centre, Ministry of Defence, 2006), <<http://www.dcdc-strategictrends.org.uk/home.aspx>>, p. v.
- 33 *Ibid.*, p. 3.
- 34 *Ibid.*, p. 83.
- 35 *Ibid.*, p. 80.
- 36 *Ibid.*, p. 85.
- 37 *Ibid.*, pp. 38, 49.
- 38 *Ibid.*, p. 81.
- 39 *Ibid.*, pp. 64, 81.
- 40 *Ibid.*, pp. 30–1.
- 41 *Ibid.*, p. 53.
- 42 <[http://watermark.rpgnow.com/pdf\\_previews/59396-sample.pdf](http://watermark.rpgnow.com/pdf_previews/59396-sample.pdf)>.
- 43 Richard J. Norton, 'Feral cities – the new strategic environment', *Naval War College Review* (Vol. LVI, no. 4, Autumn 2003), p. 97.
- 44 *Ibid.*, pp. 98, 100.
- 45 *Ibid.*, pp. 100, 105.
- 46 *Ibid.*, pp. 97–98.
- 47 Major Kelly P. Houlgate, 'Urban warfare transforms the Corps', *Proceedings* (November 2004), <[http://www.military.com/NewContent/0,13190,NI\\_1104\\_Urban-P1,00.html](http://www.military.com/NewContent/0,13190,NI_1104_Urban-P1,00.html)>.
- 48 *The Joint Operating Environment*, op. cit., p. 47.
- 49 *Ibid.*, p. 47.
- 50 Marine Corps Warfighting Lab, press release, 17 October 1997.
- 51 Ken Stier, 'Feral cities', *New York Times Magazine* (12 December 2004).
- 52 Peter W. Wielhouwer, 'Preparing for future joint urban operations: the role of simulations and the urban resolve experiment', *Small Wars Journal* (July 2005), <<http://smallwarsjournal.com/documents/swjmag/v2/wielhouwer.htm>>.

- 53 John Harlow, 'Urban Resolve 2015 prepares for the next possible challenge', *TRADOC News Service* (30 October 2006).
- 54 <<http://www.globalsecurity.org/military/library/policy/army/fm/3-06/index.html>>.
- 55 Eric Solvig, 'Marine base simulates Iraq conditions', *USA Today* (22 April 2006), <[http://www.usatoday.com/news/nation/2006-04-22-marinetraining\\_x.htm](http://www.usatoday.com/news/nation/2006-04-22-marinetraining_x.htm)>.
- 56 Kelly O'Sullivan, 'Combat City', *Desert Trail* (30 January 2008), <<http://www.hidesertstar.com/articles/2008/01/30/deserttrail.com/news/news/news1.txt>>.
- 57 Barbara Opall-Rome, 'Marines to train at new Israeli combat center', *Marine Corps Times* (25 June 2007), <[http://www.marinecorpstimes.com/news/2007/06/marine\\_israel\\_combattraining\\_070624](http://www.marinecorpstimes.com/news/2007/06/marine_israel_combattraining_070624)>.
- 58 Eyal Weizman, *Hollow Land: Israel's architecture of occupation* (London, Verso, 2007), p. 192.
- 59 Mike Davis, *Planet of Slums* (London, Verso, 2006), p. 205.
- 60 Noah Shachtman, 'Hypersonic cruise missile: America's new global strike weapon', *Popular Mechanics* (January 2007), <[http://www.popularmechanics.com/technology/military\\_law/4203874.html](http://www.popularmechanics.com/technology/military_law/4203874.html)>.
- 61 'Laser technology update: pulsed impulsive kill laser (PIKL)', presentation to NDIA 2000 Joint Services Small Arms Symposium, 29 August 2000, <<http://www.dtic.mil/ndia/smallarms/Moore.pdf>>, pp. 6, 24.
- 62 See Steve Wright, 'Torture technology - a booming industry', *SGR Newsletter* (Issue 31, December 2005), <<http://www.sgr.org.uk/newsletters/NL31.pdf>>, p. 9.
- 63 <<http://www.taser.com>>.
- 64 There are other indications that the world of *Minority Report* and 'pre-crime' may not be all that distant. The US Department of Homeland Security is reportedly developing a screening device to detect 'hostile thoughts' in airplane passengers. See Paul Marks, 'Can a government remotely detect a terrorist's thoughts?', *New Scientist* (19 August 2007), <<http://www.newscientist.com/article/dn12458-can-a-government-remotely-detect-a-terrorists-thoughts.html>>.
- 65 See Paul Marks, 'Packs of robots will hunt down uncooperative humans', *New Scientist* (22 October 2008), <<http://www.newscientist.com/blogs/shortsharpscience/2008/10/packs-of-robots-will-hunt-down.html>>.
- 66 *The Joint Operating Environment*, op. cit., p. 36.
- 67 'US military speeding help to Mexico: admiral', *Agence France Press* (7 March 2009).
- 68 Randal C. Archibald, 'US plans border "surge" against any drug wars', *New York Times* (7 January 2009).
- 69 Gina Cavallaro, 'Brigade homeland tours start Oct. 1', *Army Times* (30 September 2008), <[http://www.armytimes.com/news/2008/09/army\\_homeland\\_090708w/](http://www.armytimes.com/news/2008/09/army_homeland_090708w/)>.
- 70 *Known Unknowns*, op. cit., p. 31.
- 71 *Ibid.*, p. 32.
- 72 *Ibid.*, pp. 32-3.
- 73 'KBR awarded US Department of Homeland Security contingency support project for emergency support services', KBR press release, 24 January 2006, <[http://www.kbr.com/news/2006/govnews\\_060124.aspx](http://www.kbr.com/news/2006/govnews_060124.aspx)>.
- 74 Cavallaro, 'Brigade homeland tours start Oct. 1', op. cit.
- 75 Ralph Peters, 'Virtuous destruction, decisive speed', discussion paper for the NIC, 17 May 2004, <[http://www.dni.gov/nic/PDF\\_GIF\\_2020\\_Support/2004\\_05\\_25\\_papers/destruction.pdf](http://www.dni.gov/nic/PDF_GIF_2020_Support/2004_05_25_papers/destruction.pdf)>, p. 1.
- 76 *Ibid.*, p. 6.