Security after Risk:
Security Strategies for Governing Extreme Uncertainty

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Abstract

After 9/11, a series of revitalised strategies and techniques were promoted that were intended to govern the highly uncertain conditions and threats that risk techniques seemed no longer able to prevent. Precaution, preparedness and speculative pre-emption have been particularly prominent. But all establish a negative and defensive framework of 'freedom from'. In the past decade, programs of resilience, and particularly resiliency training, have been developed with the aim of creating subjects able to thrive and prosper under conditions of extreme uncertainty. Reflecting many of the assumptions and goals of neo-liberal politics, resiliency has already emerged as a principal technology for military and business, and may be the answer to the neo-liberal dream of a society of extreme entrepreneurs.

Introduction

While 9/11 has in some ways intensified risk consciousness and risk-based governance, it has also raised concerns that risk is not enough, and that we cannot rely on probabilistic preventive regimes for security. In Ulrich Beck's (1992) alarmist language, we are forced to move from the calculable to the incalculable future, or, more precisely, from governing through risk to 'uncertainty'. Here, uncertainty simply means those conditions where precise probabilistic forecasting is not possible. Of course, this is a crude binary, suggesting that either we have statistical calculation of the future or virtually no useful capacity at all to calculate. Elsewhere I have argued that such a response itself falls into a trap that elevates the importance of risk, insofar as we are seen as plunging into chaos without it—whereas, of course, there was anticipatory governance before there was risk, and most modern institutions and arrangements, including insurance, have relied and still rely more extensively on these (O'Malley 2003, Bougen 2003, Ericson and Doyle 2004). Central to all such techniques is what Jeremy Bentham (1962) termed 'the disposition to look forward': the liberal duty of foresight, formalised into doctrines of 'reasonable foreseeability' and 'negligence' in areas such as contract and tort law (O'Malley 2000). It combines the act of imagination to project actions into the future, and the application of an everyday calculus

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based on experience in order to detect potential hazards and opportunities to which they give rise. This became a new responsibility for liberal subjects in the 19th century.

It is this foundational liberal technique for governing uncertainty that has been updated, elaborated and out of which new forms were innovated, especially since 9/11. Most of these, I will argue, are only slightly more sophisticated versions of what Bentham (1962) in the 18th century understood perfectly as the 'yoke of foresight'. These are discussed below as 'precaution', 'speculative pre-emption', and 'enactment' or 'preparedness'. They are marked by a defensive stance in which the future is littered with *imaginable* disasters, and share a belief that risk is an inadequate defence. They also share in common the idea of a subject who acts and thinks defensively rather than one who regards the future in a positive light—an entrepreneurial subject who regards the future as something providing opportunities as well as threats. In the past decade, it may be that we are witnessing a remodelling of the subject of liberalism and modernity, itself built out of the neo-liberal vision of everyman as entrepreneur of himself (Foucault 2008:256). But now this is being extensively shaped by the fusion of a radical vision of business as uncertainty with the emergence of scientifically optimised training in ways of being that allow one to live in *positive* freedom under conditions of radical uncertainty.

Bureaucratising Imagination

The *Full Report of the National Commission on Terrorist Attacks upon the United States* ('the 9/11 Commission') asked how it was that that the US Government failed to anticipate and prevent the terrorist attack. Its conclusion was that the disaster was the consequence of a lack of imagination. Trawling through an enormous mass of information relating to intelligence and analysis leading up to the event, perhaps it was inevitable that among the hundreds of imagined scenarios, some resembled the Twin Towers catastrophe. The 9/11 Commission (339–46) noted numerous 'telltale indicators' that had attracted little attention. Thus 'the North American Aerospace Defense Command had imagined the possible use of aircraft as a weapon' and 'one prescient pre-9/11 analysis of an aircraft plot was written by a Justice Department trial attorney' (346). The National Counterterrorism Coordinator (Richard Clarke) informed the Commission that he had been concerned about the dangers posed by commercial aircraft, but he attributed this 'more to Tom Clancy novels than to warnings from the intelligence community' (347).

Perhaps by ignoring the stupendous array of other scenarios that had been toyed with by one or other of the thousands of experts in the field, the 9/11 Commission concluded that the event could have been prevented if only they had been taken seriously—and of course, it meant in particular the one 'unlikely' scenario that actually eventuated. The Commission convinced itself that 'the most important failure was one of imagination (9/11 Commission Executive Summary:9). As I have explored elsewhere in more detail (Bougen and O'Malley 2009, O'Malley and Bougen 2009), the theme of imagination recurs throughout the report, leading to a general conclusion that 'the possibility was imaginable and imagined' (344). While acknowledging that imagination is not a gift usually associated with bureaucracies, 'it is therefore crucial to find a way of routinizing, even bureaucratizing imagination' (344). The response is fascinating given that bureaucratisation is something that had been ideologically odious to neo-liberals and neo-conservatives for decades. Bureaucracies have come to be regarded in this political environment as anti-entrepreneurial, inflexible and overly hierarchical. Much ink has been spilled on how government can be improved through

replacing bureaucracy with 'government through foresight' which favours competition, market mechanisms, decentralisation, and entrepreneurialism. In short: a government that embraces uncertainty (Osborne and Gaebler 1993).

It could be argued, at least if one accepts the nostrums of new managerialism and the entrepreneurial state, that this proposal to routinise imagination in bureaucracies is destined to fail. What is more interesting from a theoretical position is the fact that the specific tension set up for the claimed advantage of bureaucracies is precisely that they are predictable, yet bureaucracy is being set to foster imagining the incalculable.

Three principal strategies and associated technologies have emerged under this rubric: precaution, preparedness and enactment, and speculative pre-emption. A fourth approach may be understood to have grown up rather to one side of this bureaucratisation— 'resilience'—to which the last part of the paper will turn, and which better reflects the neo-liberal vision of entrepreneurial governance.

Precaution

As many have noted (Ewald 2002, Fisher 2007), one response to the emergence of the risk society and radical uncertainty has been the elevated resort to the precautionary principal, already widely deployed in Europe, for example, with respect to issues concerning global warming and genetically modified foods. In its most conservative form, this intensifies the negativity and paranoia of risk, for at its heart is a decision to cease and desist activities that generate high consequence hazards which are not precisely calculable. As Ewald (2002:287) sees it:

> the precautionary principle invites one to consider the worst hypothesis (defined as 'the serious and irreversible consequence')...I must, out of precaution, imagine the worst possible, the consequence that an infinitely deceptive malicious demon could have slipped into an apparently innocent exercise.

This is a specific formulation in which *imagining* the worst is pivotal. It is, as he (2002:288) suggests, not just inviting one 'to take into account doubtful hypotheses and simple suspicions' but even 'to take the most far-fetched forecasts seriously, predictions by prophets, whether true or false'. There are, as will be seen, various ways of responding to such 'invitations'. However, because it takes the worst case scenario as its subject, precaution requires the curtailing or cessation of action. Significantly, Ewald (2002:299) himself points out one consequence is that the 'spirit of enterprise, of creation, and of innovation' are no longer valued and promoted.

There are significant doubts about the extent to which this has been the case in practice. Precaution may stimulate research into the problematic effects of questionable developments, and in addition has opened up dialogues between democratic politics, science and business rather than closing down development by political fiat (Fisher 2007). But my interest here is not in evaluation so much as a mapping out the structure of the governmental strategies. In the case of precaution, it could be said that two core elements are precisely as mapped by Ewald: the deployment of imagination and its coupling with an assumption of harms that cannot be tolerated. The result is something not clearly articulated in much of the precaution literature, for it shares with risk a fundamentally preventive logic. It assumes, therefore, that prevention is possible. Precaution as imagined by Beck and Ewald as the

response par excellence of the risk society is a passive program of 'freedom from': there is no agenda of positive freedom *per se*, only one of removing some 'freedom'—by closing down enterprise and discovery—in order to protect what is imagined as more important. It is, of course, the classic Hobbesian response of 'security' interventions translated into a world of only imaginable futures (Sunstein 2005).

Preparedness and Enactment

The second major—but similarly negative—direction taken in the past decade has been to assume that we cannot prevent catastrophes befalling us, even by retreatist strategies such as precaution, and had better get ready for the worst. Collier and Lakoff (2008:11) have argued that this is a defining characteristic of 'preparedness' which has emerged as a federally institutionalised response post 9/11. By preparedness they mean 'a form of planning for unpredictable but catastrophic events...the aim of such planning is not to prevent these events from happening, but rather to manage their consequences'. Collier (2008) outlines enactment in detail, focusing on the role of expert reflection and the ways in which it is deployed to imagine catastrophic futures.

> Rather than drawing on an archive of past events, enactment uses as its basic data an *inventory* of past elements at risk, information about the *vulnerability* of these elements and a model of the threat itself – the *event* model. And rather than using statistical analysis, enactment 'acts out' uncertain future threats by juxtaposing these various forms of data. (Collier 2008:226)

This owes much to war gaming as practised in military circles for many years. In the simplest model, this may involve imagining scenarios and placing multiple transparent overlays on maps in order to simulate these, with the aim of giving emergency service planners a foundation on which to prepare. Recently, more sophisticated models have been developed, for example by Grossi and Kunreuther (2000) in which hazard, inventory, vulnerability and loss are deployed through the development of computer modelling based on analogous past events, rather than accumulated statistical data. With terrorism risk, for example, estimation of the timing and nature of the threat is 'elicited' from experts (cf Ericson and Doyle 2004:150–1) While 'elicitation' is no more than expert-informed guesswork, as Collier points out, the use of analogous models of natural disasters, military damage assessments and nuclear reactor failures are likely to provide reasonable approximations to imaginable harms terrorism will produce (Collier 2008:242).Similar modelling is used, for example, with respect to providing foundations for terrorism insurance, despite Beck's assertion that this is an 'uninsurable' risk (Bougen 2003).

No matter how sophisticated the modelling, the overriding characteristic of enactment-preparedness remains passive, defensive and negative: the attempt to create 'freedom from'. As with precaution, the spirit of innovation and enterprise is stifled, but this is a not totally inescapable consequence of bureaucratising imagination, as may be seen in the case of speculative pre-emption.

Speculative Pre-emption

There is nothing new about pre-emptive strikes as such. However, the emergent form of the pre-emptive strike is an important development for several reasons. First, it is generated in an environment in which the precautionary principle had become well established but, as the

National Security Strategy makes quite explicit, it offers a radical departure from the precautionary 'do-nothing' mind set mapped out by Ewald.

> The greater the threat, the greater is the risk of inaction – and the more compelling the case for taking anticipatory action to defend ourselves, *even if uncertainty remains as to the time and place of the enemy's attack*. To forestall or prevent such hostile acts by our adversaries, the United States will, if necessary, act pre-emptively (National Security Council 2002, quoted by Cooper 2006).

Speculative pre-emption relies precisely on high uncertainty for its rationale and this is argued to differentiate it from historical precursors. Previously, pre-emptive strikes would be founded on clear evidence that an attack was imminent. In 'the risk society', however, high uncertainty has become a justification in its own right. Cooper (2006:125–7) has gone further to argue that the logic of post-9/11 speculative pre-emption—to intervene in emergence precisely because of uncertainty linked to massive consequences—is being extended to such other fields such as climate change and genetic engineering. In such areas, its proponents advocate that 'we make an attempt to unleash transformative events on a biospheric scale before we get dragged away by nature's own acts of emergence' (Cooper 2006:126). Cooper's analysis is particularly significant because it also brings to the fore the nexus between speculative pre-emption and parallel radical shifts in the business domain. For Cooper, the genealogy of speculative pre-emption is founded in the shift toward the spectacular rethinking of capital during the neo-liberal years leading up to the turn of the 21st century. In the economic domain, 'it seemed that speculation itself had become the driving force behind unprecedented levels of innovation, allowing whole industries to be financed on the mere hope of future profits (2006:127). It was, as Cooper rightly observes, an era in which the imaginary of venture capitalism institutionalised a new model of economic activity.

I will return to this image of venture capital later in the piece, for it recurs in the development of another—and perhaps the most significant—'post risk' strategy. But for Cooper, there is another genealogical step to take. The bursting of the dotcom bubble, reinforced later by the global financial crisis, shifted the entrepreneurial ideal on its axis. The neo-liberal optimism, in which the uncertain future was to be hailed and grasped as an opportunity for profit, now came to be recast into a fear of uncertainty. The neo-conservatives, she suggests, 'want to convince us that there is no end to danger'. After 9/11, this became the predominant vision that shaped warfare. Speculative pre-emption, she suggests, needs to be understood in the nexus between military security, the politics of life, and new forms of speculative capitalization' (Cooper 2006:128–9).

This is a telling argument. However, just as precaution was not the only 'logical' response to high uncertainty, so speculative pre-emption is not the only strategy that emerged from this triangle of the military, venture capitalism and 'the politics of life', nor is it necessarily the most transformative one. The politics of the New Right, if we can still use this term in the 21st century, have long been unstable and contradictory; a legacy of the wedding of neo-conservatism and neo-liberalism in the Thatcher-Reagan years (O'Malley 1999). Consequently, there has not only been a trend toward defensive neo-conservatism, but an ongoing contestation between allied and overlapping doctrines that have respectively valorised social and prudential authoritarianism and a more radically laissez faire 'social' entrepreneurialism. Thus while I accept Cooper's general argument, I want to suggest that there has been no succession of strategies, but rather, a situation in which both strands continue to have an influence; in business and the military as in politics.

Speculative pre-emption shares with enactment a vision of an open and unformed future that nevertheless can be dealt with *as if* it were known. Intervention in Iraq went forward not simply on the imagined possibility of WMDs but on the assumption that 'we' could not take the chance of waiting to make sure. The resulting action, however, took the form of a vision of certainty: the invasion operated as if the WMDs existed; its form and operation would have been little different regardless of whether they proved to exist or, as turned out, to the contrary.

Enactment faces a problem that pre-emption evades, for if pre-emption operates as if there is certainty and obliterates the other uncertain futures by creating its own, the persistent doubt about which of the many imaginable futures is the most likely always haunts preparedness. If, as has been seen, the bureaucratisation of imagination demands that all imaginable futures be taken seriously, how do we proceed? Not all such imaginary threats can be rendered the subject of preparation. Of course, various techniques such as expert elicitation are used to select more likely imaginable futures. But that is precisely the trap that the bureaucratisation of imagination sets. Imagination is the limit, then discounting any possibilities—such as the possibility of flying fully-fuelled long-haul jets into buildings—negates the strategy. It must writhe in its own contradiction. Speculative pre-emption theoretically faces the same dilemma, of course, but by *remaking* the future, appears to evade it. Even so, while 'enterprising' in form, it is still merely reactive, pursuing a negative goal of freedom from which is itself in tension with neo-liberalism's boundless faith in uncertainty and enterprise. This is where resilience comes into play.

Resilience: Enterprising imagination

As Cooper and Walker (forthcoming:2) suggest, 'with the post-911 revolution in homeland security, resilience has become a universal security perspective'. It integrates a wide array of disaster situations including terrorism, critical infrastructure protection, state failure, natural disasters and climate change within a single mode of analysis. Like other post-9/11 strategies, resilience is focused on critical events that we 'cannot predict or prevent but adapt to by "building resilience"'. As a consequence of the enormous scope of events to which it is envisaged applying, resilience—like risk—takes on a bewildering variety of specific forms. But it differs markedly from other strategies in that it does not imagine specific scenarios against which defences (or pre-emptive attacks) must be prepared. Rather, the focus is on building-in a capacity to adapt and survive in the face of *any* situation of high uncertainty imaginable or otherwise (Lentzos and Rose 2008). More characteristically still, 'resilience is the capacity to adapt and thrive in the face of challenge' (World Economic Forum 2008:ix).

Note that there is no talk of disaster or catastrophe, nor specification of types of imaginable threat. There are 'challenges', and the aim is not simply recovery from disaster, but the capacity to 'thrive'. It is a sea change from the other, ultimately negative and defensive strategies. This characterisation of resilience is diagnostic, for it identifies it precisely with the entrepreneurial, neo-liberal business models such as were developed in the 1970s; for example, in Tom Peters' (1977) iconic *Thriving on Chaos*. Indeed, the parallel with the approaches to business that 'embrace high uncertainty' goes deeper than this. In order to explore this, we need to focus in on one specific field of security and uncertainty in the risk society: the transformation of military affairs.

Within a year of the announcement that imagination was to be bureaucratised, Defense Secretary Rumsfeld effectively summed up a rather different vision associated with a re-formation of the conception of the military and of its personnel along entrepreneurial lines. He urged:

> We must transform not only our armed forces but also the Department that serves them by encouraging a culture of creativity and intelligent risk-taking. We must promote a more entrepreneurial approach to developing military capabilities, one that encourages people, all people, to be proactive and not reactive, to behave somewhat less like bureaucrats and more like venture capitalists (Donald Rumsfeld, 2002).

Since just before the end of the 20th century, military leaders in the US and other 'western' powers have been radically changing the organisation and mentalities of the military in substantial ways: the 'revolution in military affairs' (RMA). Broadly speaking, the RMA reflects a view that the nature of warfare has changed. If once there were declared wars and set-piece battles, now warfare may occur at any time and in and through media that little resemble battlefields. 'Battlespaces' may involve contested landscapes, but they may be on the internet as hackers seek weaknesses in the enemy's defences, or in commerce and banking: anywhere the enemy is vulnerable. Even 'on the ground', armed warfare has shifted from set-piece battles to highly mobile and fragmented conflicts. This is regarded as an era of 'asymmetric warfare' where each side plays according to its own rules and seeks weakness wherever it can be made to appear. The result is that 'our missions have become far more complex and our challenges and adversaries less predictable' (Alberts et al 2000:60). Warfare and military security have shifted dramatically in the direction of high uncertainty (Manigart, 2003).

In response to this assessment, the RMA has drawn heavily on the radical models of business restructuring that are associated with the 'new managerial' revolution and neo-liberal visions of the entrepreneurial society. As business is perceived to have shifted toward innovative and highly competitive strategies in the globalised economy, so it has appeared to military leadership that 'in many ways the environment in which the military forces operate does not differ from that of the business environment' (DSTO 2004:4), or, as pointed out by the architects of the now pre-eminent 'network centric warfare' model, 'network centric warfare has its antecedent in the dynamics of growth and competition that have emerged in the modern economy' (Cebrowski and Gartska 1998).

In a nutshell, network centric warfare may be summed up by the idea that networked relationships become more critical to military flexibility, adaptability and multitasking than the traditional vision of 'silos' of military might and firepower. 'Co-evolving' with business, visible changes include simplification of hierarchies, use of smaller and more mobile formations, and increased autonomy and responsibility of personnel. The 'network centric warrior' is required to a far greater extent to be innovative, flexible and to act as an informed decision maker (DSTO, 2004). Here, resilience emerges as a key to creating new subjects of high uncertainty. In the wake of the destabilisation of the American economy post-9/11, the entrepreneurial ideal did not solely take the negative turn speculative pre-emption suggested above by Cooper. Among a raft of reformulations was the appearance in business and change management literature of a host of 'self improvement' manuals on how to become resilient. In Brooks and Goldstein's (2006) *The Power of Resilience: Achieving Balance, Confidence, and Personal Strength in Your Life*, the everyday idea of resilience as being able to 'withstand shocks' and 'bounce back' is joined by a more enterprising and positive vision 'that will lead to a more resilient, fulfilling life' (Brooks and Goldstein

2006:3–4). The same message is developed in Siebert's *The Resiliency Advantage: Master Change, Thrive Under Pressure* (Siebert 2005). For some advocates, in still more encompassing fashion, resilience 'is the basic ingredient to happiness and success' (Reivich and Shatte 2002:1). In this sense, the constitution of new subjectivities is not simply to imagine them as defensive. At least equally it promotes what Baker and Simon (2002) refer to as 'embracing risk': the *positive* attitude that regards high uncertainty as opportunity and challenge.

A principal change ushered in by this new 'resiliency' literature was the argument that resiliency was a mindset or skill that could be learned, rather than a personality or character trait deeply inscribed in the individual. The elements of this mindset include such 'skills' as 'displaying effective communication', 'possessing solid problem-solving and decision-making skills', 'establishing realistic goals and expectations', 'living a responsible life based on a thoughtful set of values' and 'learning from both success and failure' (Brooks and Goldstein 2003:3). While such advice is easy to dismiss as the stuff of trivial business 'self help' manuals, it has been formalised by military and security establishments worldwide. The Australian Defence Force has had such a resiliency strategy in place since 2000, the British military and emergency services and the Canadian armed forces all have variations on this in place (O'Malley 2010). As part of the RMA, the US military now requires that all 1.1 million US troops undergo intensive training in emotional resiliency and that every battalion have a 'master resiliency trainer'(*New York Times* 28 August 2009:18), and more recently the National Guard and Reserve have also begin resiliency training (Army News Service 2009:2). In sum, the US military assumes that training in resiliency 'teaches self awareness, bringing mental fitness up to the same level as soldiers' physical fitness and creating 'supermen' and 'superwomen' (Army News Service 2009:2).

The US Army's Fort Bragg program in psychosocial military resilience training focuses on a battery of 'factors' found to reduce stress reactions, and each has a training module:

> Positive emotions (optimism and humor); Emotional regulation (fear, anger etc.); Cognitive flexibility (positive explanatory style, positive reappraisal, and acceptance); Coping style (active approach vs. passive/avoidant); Spirituality (including religion); Moral code (including altruism); Social support (including unit support); Training (physical, psychological and spiritual); Purpose and meaning (mission) (Southwick et al 2005).

Each factor is broken down into components, each to be a focus of training. For example, 'coping style' involves focusing on an 'active approach' that involves gathering information, acquiring skills, confrontation rather than avoidance, problem solving, seeking social support and cognitive reappraisal (that is, 'redefining a crisis as a challenge') as opposed to blaming. Further, these resiliency training modules—like the business and change management literature—are based on research findings, most especially involving cognitive behavioural therapy. The 'coping style' module, for example, is based on research that shows this skill set was found to produce fewer post traumatic stress disorder symptoms in Gulf War veterans (O'Malley 2010).

The aim is to produce subjects—whether in business, the military or everyday life—who are capable of dealing with all situations of high uncertainty. In strong contrast to virtually all the other strategies, resiliency thus specifically rejects what Engin Isin (2004) refers to as the 'neurotic subject' he sees as integral to the subjectivity of the risk society. For Isin, the neurotic subject is 'someone who is anxious under stress and increasingly insecure and is asked to manage its neurosis…neurotic because it governs itself through its anxieties, what

it wants is impossible. It wants absolute safety' (Isin 2004:231-32). This, certainly, is the subject of Beck's vision of the subjects of risk consciousness, but the new resiliency approach aligns far better with the neo-liberal imaginary of each subject being the 'entrepreneur of oneself' in an environment that is highly uncertain. This subject, in a sense scientifically designed, approaches uncertainty as a challenge and opportunity.

Conclusion : Uncertainty makes us free

The demand that governments 'bureaucratise imagination' has been met with a series of responses largely revising and developing strategies and techniques inherited from the past. The irony of encouraging the imagination of threats is that, whereas risk could at least rein in paranoia by the demand for statistical evidence, now, as Ewald argues, evidence is hardly a requirement. If threats can be imagined then they could happen and we should be prepared, or strike first at any imagined source of threat. In all of these approaches, there is a specific kind of freedom being produced: what Isaiah Berlin (1969) referred to negatively as 'freedom from', associated with what Beck (1992) saw as 'paranoia, and Isin (2004) as 'neurosis'. Uncertainty appears as a problem for life itself and the command to bureaucratise imagination intensifies this.

But from the 1970s, political and economic 'security' had begun to diverge as exposure to uncertainty and insecurity in the economic domain were defined by neoliberals as beneficial and essential to freedom and security. The less the security, the greater the freedom. Increased uncertainty now came to mean increased opportunity for the enterprising. Neo-liberals such as Peter Bernstein (1998) argued that 'uncertainty makes us free'. If the future is predictable, the argument goes, then how can we be free? How could such a vision survive 9/11? How could uncertainty be sustained as a liberal condition of freedom when it had become the enemy of Western, liberal security? The answer was not to be found in bureaucratising imagination. Nor, as events are proving, was it to be found in speculative pre-emption, even though that preserved something of the enterprising mythology. Not through the search for solutions to every imaginable threat, but by creating new, resilient, subjects scientifically designed to 'thrive' on chaos and make every threat a challenge and opportunity. Thus, in the mythology of resilience, may the neo-liberal dream of freedom in uncertainty be imagined into existence in the 21st century.

References

9/11 Commission Final Report, http://www.gpoaccess.gov/911/ pdf/fullreport.pdf, accessed 17 June 2011

Alberts D Gartska J and Stein F (2000) Network Centric Warfare: Developing and Leveraging Information Security, US Department of Defense, Washington DC

Army News Service (2009) 'Resiliency training to be given army-wide', Army News Service 8 October, http://www.defencetalk.com/resiliency-training-to-be-given-army-wide-22468/ (accessed 21 June 2011)

Baker T and Simon J (2002) 'Embracing risk' in Baker T and Simon J (eds) *Embracing Risk,* University of Chicago Press, Chicago, 1–26

Beck U (1992) *Risk Society*, Sage, New York

Bentham J (1962) 'An Introduction to the Principles of Morals and Legislation' in Bowring J (ed) *The Works of Jeremy Bentham* Vol I, Russell and Russell, New York, 1–155

Berlin I (1969) 'Two concepts of liberty' in Berlin I (ed), *Four Essays on Liberty*, Oxford University Press, Oxford, 118–72

Bernstein P (1998) *Against the Gods: The Remarkable Story of Risk*, Wiley, New York

Bougen P 'Catastrophe Risk' (2003) *Economy and Society* vol 32, 253–74

Bougen P and and O'Malley P (2009) 'Bureaucracy, imagination and US domestic security policy', *Security Journal* vol 22, 101–18

Brooks R and Goldstein S (2006) *The Power of Resilience: Achieving Balance, Confidence and Personal Strength in Your Life,* McGraw Hill, New York

Cebrowski A and Gartska J (1998) 'Network centric warfare: Its origins and future', *Proceedings of the Naval Institute*, vol 34, 1–11

Collier S (2008) 'Enacting catastrophe: Preparedness, insurance, budgetary rationalization', *Economy and Society*, vol 37, 224–50

Collier S and Lakoff A (2008) 'Distributed preparedness: Space, security and citizenship in the United States', *Environment and Planning D: Society and Space*, vol 26, 7–28

Cooper M (2006) 'Pre-empting emergence: The biological turn in the war on terror', *Theory, Culture and Society*, Vol 23, 113-35

Cooper M and Walker J (2011) 'Genealogies of Resilience: From Systems Ecology to the Political Economy of Crisis Adaptation', *Security Dialogue*, vol 41, 143–60

De Goede M (2008) 'Beyond risk: Premeditation and the post-9/11 security imagination', *Security Dialogue*, vol 39, 155–76

DSTO (Defence Science and Technology Organisation) (2004) *The network centric warrior: the human dimension of network centric warfare*, Australian Government Department of Defence, Canberra

Ericson R and Doyle A (2004) 'Catastrophe risk, insurance and terrorism', *Economy and Society*, vol 33, 135–73

Ewald F (2002) 'The Return of Descartes's Malicious Demon: An Outline of a Philosophy of Precaution', in Baker T and Simon J (eds), *Embracing Risk: The Changing Culture of Insurance and Responsibility*, University of Chicago Press, Chicago, 273–301

Fisher E (2007) *Risk Regulation and Administrative Constitutionalism*, Hart, Oxford

Foucault M (2008) *The Birth of Biopolitics; Lectures at the College de France 1978-1979*, Palgrave MacMillan, London

Grossi P and Kunreuther H (2005) *Catastrophe Modelling: A New Approach to Managing Risk*, Springer, New York

Isin E (2004) 'The neurotic citizen', *Citizenship Studies*, vol 2004, 217–35

Lentzos F and Rose N (2009) 'Governing insecurity: Contingency planning, protection, resistance', *Economy and Society* vol 38, 230–54

Manigart P (2003) 'Restructuring of the Armed Forces', in Caforio G (ed) *Handbook of the Sociology of the Military*, Kluwer Academic/ Plenum, New York

O'Malley P (1999) 'Volatile and Contradictory Punishment*,* Theoretical Criminology*, vol 3, 175–96

O'Malley P (2000) 'Uncertain Subjects: Risk, Liberalism and Contract', *Economy and Society*, vol 29, 460–84

O'Malley P (2003) 'Governable catastrophes', *Economy and Society*, vol 32, 275–79

O'Malley P (2010) 'Resilient subjects: Uncertainty, warfare and resilience', *Economy and Society*, vol 39, 488–509

O'Malley P and Bougen P (2009) 'Imaginable insecurities: imagination, routinisation and the government of uncertainty post 9/11' in Carlen P (ed) *Imaginary Penalities*, Willan, Devon

Osborne T and Gaebler T (1993) *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*, Plume Books, New York

Reivich K and Shatte A (2002) *The Resilience Factor: 7 Keys to Finding Your Inner Strength and Overcoming Life's Hurdles*, Broadway Books, Chicago

Rumsfeld D (2002) 'Speech to National Defense University', www.defenselink.mil/ speeches/speech.aspx?speechid=183 (accessed 17 June 2011)

Peters T (1987) *Thriving on Chaos: Handbook for a Management Revolution*, Knopf, New York

Siebert A (2005) *The Resiliency Advantage: Master Change, Thrive Under Pressure, and Bounce Back from Setbacks*, Practical Psychology Press, Portland, Oregon

Southwick S Vyhiligan M and Charney D (2005) 'The psychobiology of depression and resilience to stress: Implications for prevention and treatment', *Annual Reviews of Clinical Psychology* vol 1, 255–91

Sunstein C (2005) *Laws of Fear: Beyond the Precautionary Principle*, Cambridge University Press, Cambridge

World Economic Forum (2008) *Building Resilience to Natural Disasters: A Framework for Private Sector Engagement*, World Economic Forum, Geneva