PRECAUTIONARY CULTURE AND THE RISE OF POSSIBILISTIC RISK ASSESSMENT

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Abstract

The shift from probabilistic to possibilistic risk management characterises contemporary cultural attitudes towards uncertainty. This shift in attitude is paralleled by the growing influence of the belief that future risks are not only unknown but are also unknowable. Scepticism about the capacity of knowledge to help manage risks has encouraged the dramatisation of uncertainty. One consequence of this development has been the advocacy of a precautionary response to threats. This article examines the way in which precautionary attitudes have shaped the response to the threat of terrorism and to the millennium bug. The main accomplishment of this response has been to intensify the sense of existential insecurity.

1 Introduction

On the very day that Mumbai came under attack by small groups of mobile gunmen, newspaper headlines in Britain were informing the public that a terrorist strike could infect the country with bird flu. This scenario was contained in a report published by the Institute of Public Policy Research's Commission of National Security for the 21st century. This document speculated that the threat from pandemic diseases such as SARS and Avian Flu is

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growing all the time, and because of inadequate preparation 'a serious disease outbreak or bio-terrorism incident in the next 18 months could tip the global economy from serious recession into global depression'. In line with current Hollywood fantasy plot lines, the report invited us to imagine the possibility of a terrorist purchasing 'genes for use in engineering of an existing and dangerous pathogen into a more virulent strain'.[1] A day after the publication of this report, a panel of experts informed the American Congress that a biological terrorist attack on the nation was likely by 2013. 'The consequences of a biological attack are almost beyond comprehension' noted former Senator Bob Graham before adding that 'it would be 9/11 times 10 or a hundred in terms of the number of people who would be killed'.[2] Both of these threat assessments are based on a precautionary logic that dominates contemporary risk management. This article argues that the institutionalisation of this logic is underpinned by a shift from probabilistic to possibilistic risk analysis.

A speculative orientation towards the future is intrinsic to precautionary thinking. Precautionary culture, which has a powerful influence on risk management, is ambiguous about the status of knowledge in assessing risk.[3] Through encouraging policy-making and action on the basis of what we do not yet know, it encourages the kind of worst-case thinking that underpins the war against terror or the panic about the millennium bug and environmental problems.

2 Unknown and unknowable

Western society's culture of fear signals the idea that contemporary risks are qualitatively more dangerous than previous ones because we know very little about them. There is a growing body of opinion among academic risk experts and risk managers that suggests that what we have to worry about is not simply a future that is unknown but one that is unknowable. Throughout history, societies have tended to be apprehensive about uncertainty and have feared the unknown. But the way that communities respond to uncertainty fluctuates in line with how much at ease a society is with itself and how confident it feels about its future. Historically, an intense consciousness of

[1] This report is available on-line <http://www.ippr.org.uk/ipprcommissions/index.asp?id=2656> (accessed 1 December 2008).

[2] Available online <http://edition.cnn.com/2008/US/12/02/terror.report/index.html> (accessed 5 December 2008).

[3] For a discussion of the rise of precautionary thinking, see J.C. Hanekamp, G.Vera-Navas and S.W. Verstegen, 'The historical roots of precautionary thinking: the cultural ecological critique and "Their Limits to Growth"' (2005) 8 *Journal of Risk Research* 295.

uncertainty expresses the realisation that it is not possible to know what will happen in the future. Although experience and knowledge provide insights into likely developments and outcomes, the future always contains an element of the unknown.

How people respond to the unknown is subject to historical and cultural variations. There are times when people's response to the unknown is one of excitement, curiosity, inquisitiveness and eager anticipation. These are moments when people adopt a robust and optimistic sensibility towards the unknown. European sailors setting out to discover an unknown world and enthusiastic space travellers in the 1960s embraced the challenge of turning the unknown into the knowable. From this standpoint, uncertainty served as a stimulus to the positive act of discovery. At other times, communities respond with anxiety to uncertainty and regard the unknown as merely a threat to avoid rather than as an opportunity for discovery. In these circumstances, fear and dread express the dominant mood towards uncertainty. Today this response to the unknown has acquired an unprecedented significance.

One of the defining features of our times is that anxiety about the unknown appears to have a greater significance than the fear of known threats. Politicians and campaigners often hint darkly about the grave challenge posed by threats that are perilous precisely because they are unknown. These are threats to which as yet we can give no name and whose trajectory cannot be calculated. One of Europe's leading sociologists, Zygmunt Bauman, gives voice to this vision of unnamed threats when he states that 'by far the most awesome and fearsome dangers are precisely those that are *impossible* or excruciatingly *difficult* to anticipate, the *un*predicted, and in all likelihood *unpredictable ones*'.[4]

Bauman's analysis is closely based on the work of the German sociologist Ulrich Beck, who argues that technological development has created a world where society simply cannot understand the destructive consequences of human intervention. Beck stated that

> through our past decisions about atomic energy and our present decisions about the use of genetic technology, human genetics, nanotechnology, and computer science, we unleash unforeseeable, uncontrollable, indeed even *incommunicable* consequences that threaten life on earth.[5]

The formulation 'incommunicable consequences' is used to highlight the claim that humanity lacks the intellectual resources with which to interpret future trends. Consequently, empirical evidence or analysis can provide little

[4] Z. Bauman, *Liquid Fear* (Cambridge: Polity Press 2006) at 11.
[5] U. Beck 'The Silence of Words: On Terror and War' (2003) 34 *Security Dialogue* 255 at 257.

assistance in this quest, since contemporary experience has little to say about an imagined or radically different future.

The culture that has been described as the culture of fear or as precautionary culture encourages society to approach human experience as a potential risk to our safety.[6] Consequently every conceivable experience has been transformed into a risk to be managed. One leading criminologist, David Garland, writes of the 'Rise of Risk' – the explosion in the growth of risk discourse and risk literature. He notes that little connects this literature other than the use of the word risk.[7] However, the very fact that risk is used to frame a variety of otherwise unconnected experiences reflects a taken-for-granted mood of uncertainty towards human experience. In contemporary society, little can be taken for granted other than an apprehensive response towards uncertainty. Arguably, like risk, fear has become a taken-for-granted idiom, even a cultural affectation for expressing confusion and uncertainty. The French social theorist Francois Ewald believes that the ascendancy of this precautionary sensibility is underwritten by a cultural mood that assumes the uncertainty of causality between action and effect. This sensibility endows fear with a privileged status. Ewald suggests that the institutionalisation of precaution 'invites one to consider the worst hypothesis (defined as the "serious and irreversible" consequence) in any business decision'.[8] The tendency to engage with uncertainty through the prism of fear and therefore anticipate the worst possible outcome can be understood as a *crisis of causality*. Riezler in his early attempt to develop a psychology of fear draws attention to the significant influence of the prevailing system of causality on people's response to threats. 'They have been taken for granted – and now they are threatened' is how he describes a situation where '"causes" are hopelessly entangled'.[9] As noted previously, the devaluation of people's capacity to know has significant influence on the way that communities interpret the world around them. Once the authority of knowledge is undermined, people become hesitant about interpreting new events. Without the guidance of knowledge, world events can appear as

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[6] F. Furedi, *The Culture of Fear Revisited* (London: Continuum Press 2007) and R. Pieterman, 'Culture in the Risk Society, An Essay on the Rise of a Precautionary Culture' (2001) 22 *Zeitschrift fur Rechtsoziologie* 145.

[7] D. Garland, 'The Rise of Risk' in R. Ericson and A. Doyle (eds.) *Risk and Morality* (Toronto: University of Toronto Press 2003) at 52.

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

[9] K. Riezler, 'The Social Psychology of Fear' (1944) 49 *The American Journal of Sociology* 489 at 497.

random and arbitrary acts that are beyond comprehension. This crisis of causality does not simply deprive society from grasping the chain of events that has led to a particular outcome; it also diminishes the capacity to find meaning in what sometimes appears as a series of patternless events.

The question of causation is inextricably bound up with the way communities attempt to make sense of acts of misfortune. The way people interpret such events – an accident or a catastrophe – is processed through the prevailing system of meaning. Questions like 'was it God' or 'was it nature' or 'was it an act of human error' have important implications in terms of how we understand acts of misfortune. Today such questions are complicated by the fact that Western societies possess a weak sense of shared meaning and therefore often lack a consensus about how to attribute blame and responsibility. The absence of consensus means that the link between cause and negative outcome is continually contested. Confusion about causation encourages speculation, rumours, and mistrust. As a result, events often appear as incomprehensible and beyond human control.

3 The ambiguities of knowing

Disappointment with the promise of the Enlightenment has diminished public confidence in society's ability to know, understand, and ultimately control the future. The view that we live in a world that is so complex as to render meaningless the claim to know is systematically promoted by radical critics of modernity. Critics are also worried that the advance of knowledge itself creates problems, because it threatens to encourage activity and behaviour whose consequences cannot be known in advance. This attitude is most forcefully expressed in the view that one of the products of science and knowledge is risk. Leading sociologists Ulrich Beck and Anthony Giddens forcefully argue the case for the close association between the sense of risk and the increase in knowledge. 'Many of the uncertainties which face us today have been created by the very growth of knowledge', wrote Giddens, and Beck has noted that the 'sources of danger are no longer ignorance but knowledge'.[10] In this scenario, knowledge through its application creates both new hazards and an awareness of their risk. From this standpoint the problem is not ignorance but knowledge that questions the authority of science. The implicit preference of ignorance over knowledge represents a contemporary variant of the conservative embrace of prejudice in the 19th century. In both cases, knowledge is perceived as undesirable because of its disruptive and disorienting effect.

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[10] A. Giddens 'Risk, Trust, Reflexivity' in U. Beck, *Risk Society: Towards a New Modernity* (London: Sage 1992) at 85 and 183.

The association of knowledge with risk is based on a model of society that feels uncomfortable with change and uncertainty, and regards technological development as potentially threatening. Such a society experiences the advance of knowledge and the unintended consequences of technological development as a source of anxiety and disorientation. These days, arguments that associate knowledge with risks are implicitly questioning the human potential for knowing. It is claimed that human knowledge cannot grasp the chaotic patterns of events set in motion by global capitalism, and the impossibility of knowing or calculating the consequences of technology and human action is widely insisted upon. This view is justified by the argument that technological development in a globalised environment has become so complex as to destroy the foundation for understanding the future. As a result, the German sociologist Nikolas Luhmann claims that 'no one is in a position to claim knowledge of the future nor the capacity to change it'.[11] For Luhmann, knowledge is restricted to providing insights into what has already happened, and limited insights at that. Consequently, the development of knowledge is not only perceived as potentially dangerous but it is also represented as having a limited value for guiding society towards the future.

Historically, knowledge and science were upheld because of their capacity for transforming uncertainty into calculable risk. In recent times, this view of science has been undermined by a sensibility that stresses our inability to know. Often what is at issue is not just not knowing but the impossibility of knowing. The association of knowledge with potential danger is based on a self-consciously anti-Enlightenment intellectual outlook. In this model, knowledge and science are both limited in their grasp of the truth; and because they set in motion innovations that have unintended effects, they also create problems. Such an outlook is, of course, strongly shaped by the negative experience of political change in the 20th century. The failure of political experimentation in the Soviet Union and China, disappointment with the record of the Welfare State, and disenchantment with the promise of the Enlightenment is interpreted as direct proof that ambitious political programmes do not work; and, retrospectively, such negative experiences confirm that we simply do not know how to know. Thus, the authority of knowledge is further devalued.

The preoccupation with uncertainty and risk does not lead explicitly to the rejection of knowledge. Rather, it helps to consolidate a mood that assigns to knowledge an essentially defensive role. From this precautionary perspective, knowledge is required to accommodate the prevailing climate of uncertainty and anxiety. The sense of powerlessness with which change is perceived has weakened people's belief in the possibility of knowing what

[11] N. Luhman, *Risk: A Sociological Theory* (New York: Walter de Gruyter 1993) at 48.

lies ahead, reflected in the demand that 'science must not run ahead of public opinion', and the notion that the ethos of precaution must dictate the pace at which knowledge develops. The development of knowledge has always been subject to pragmatic concerns, but today such concerns have a distinctly defensive focus. And because the authority of knowledge has been compromised through experience, the argument that it should be allowed to be pursued for its own sake carries less conviction than in previous times.

Time and again the public is informed that the most dreadful dangers are not just ones that we cannot predict or anticipate but ones about which we cannot say anything because they are literally unknown. Security analysts and military planners often refer to such threats as 'unknown unknowns'. It was the former Defence Secretary Donald Rumsfeld who brought the concept unknown unknowns to the attention of a wider public. At a press briefing in February 2002 he astounded those in his audience when he stated:

> 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.[12]

At the time, many commentators responded with a mixture of incredulity and hilarity to what they interpreted as Rumsfeld's convoluted attempt to avoid accounting for the absence of information or evidence regarding Iraq's alleged weapons of mass destruction programme. Others treated it as yet another example of dishonest double-speak. However, Rumsfeld's comments convey an orientation towards the problems of the future that is widely shared by political and cultural elites on both sides of the Atlantic.

As far as Rumsfeld is concerned, the problems of the future fall into three categories: firstly, they are ones that we know and understand (known knowns); secondly, they are ones that we know that we neither know nor understand (known unknowns); and thirdly, they are ones that we do not even know we do not know and understand. These are the unknown unknowns. The burden of Rumsfeld's argument is that in the war against terrorism it is the unknown unknowns that constitute the greatest threat. From this standpoint the problem is not simply the absence of intelligence about a specific terrorist threat; it is a more fundamental quandary of not even possessing the capacity to know what the intelligence that is lacking should be about. The very frequency with which Rumsfeld and his colleagues use the suffix **un** is testimony not only to a lack of facts but of

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[12] US Department Of Defense, Department of Defense News Briefing, 'Secretary Rumsfeld and Gen. Myers, <www.defenselink.mil/transcripts/2002/t02122002_t212sdv2.html> (accessed 7 June 2007).

meaning. A palpable sense of disorientation is transmitted by Rumsfeld when he states that 'our challenge in this new century is a difficult one: to defend our nation against the unknown, the uncertain, the unseen, and the unexpected'.[13] Rumsfeld's three-fold categorisation of risks also informs the work of the Office of Homeland Security. One of its risk managers defines unknown unknowns as 'risks of which there is no awareness at the present time of their existence and effect'. Apparently one can do little to anticipate these risks other than put a ten percent contingency aside 'without knowing exactly where this reserve will be applied'.[14]

An examination of official deliberations on the subject of terrorism indicates that the unknown has taken on a life of its own. The term does not simply mean strange, unfamiliar, or unidentified. It signifies a state or a condition. Indeed, it is treated as a distinct sphere of existence, a kind of parallel world that cannot be grasped through the workings of the human mind. Take the UK's *Intelligence and Security Committee Report into the London Terrorist Attacks on 7 July 2005*. One of this report's sections is actually titled 'Reassessing "the Unknown"'. For the authors of this report, the unknown does not simply refer to the dearth of intelligence about a specific group or threat. The unknown has been transformed into a world for which we have no mental map. At several points the authors of the report are lost for words as they attempt to conceptualise the unknown. They note that the July 2005 bombings had 'sharpened' the perception of how big 'the unknown' was, since the Government knew next to nothing about home-grown terrorism. They go on to acknowledge that the July attacks emphasised 'how much was unknown by the police and the Security Service about ideologically motivated extremist activity at the local level'.[15] What the report's threat assessment could not accomplish was to provide a strategy for dealing with a problem that is unknowable. All that it could offer was to exhort the intelligence services to embark on a journey into the unknown. It reported with approval that

> the Director-General of the Security Service told the Committee that the main lesson learned from the July attacks was the need to get into 'the unknowns' – to find ways of broadening coverage to pick up currently unknown terrorist activity or plots.[16]

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[13] Remarks as prepared for Secretary of Defense Donald Rumsfeld, the National Defense University in Washington D.C., (31 January 2002) <www.defenselink.mil/speeches/2002/s20020131-secdef.htm> (accessed 11 March 2008).

[14] B. Jiang, 'Risk Management and the Office of Homeland Security's Antiterrorism Tasks' (2002) 4 *The Online Journal of Peace and Conflict Resolution* at 31 and 36.

[15] House of Commons, *Report of the Official Account of the Bombings in London on 7 July 2005*, HC1087 (London: The Stationery Office 2006) at 30 and 36.

[16] *Id.,* at 35.

4 The consolidation of 'what if' thinking

Rumsfeld's deliberation on unknown unknowns resonates with a radically new orientation towards the perception and management of risks in Western societies. The traditional association of risk with probabilities is now contested by a growing body of opinion that believes that humanity lacks the knowledge to calculate them. Numerous critics of probabilistic thinking call for a radical break with past practices on the ground that we simply lack the information to calculate probabilities. Environmentalists have been in the forefront of constructing arguments that devalue *probabilistic thinking*. They claim that the long-term irreversible damage caused to the environment cannot be calculated and therefore a probability-based risk analysis is irrelevant. 'The term "risk" is very often confused with "probability", and hence used erroneously' writes an opponent of genetic modification.[17] Of course once risk is detached from probabilities it ceases to be a risk. Such phenomenon is no longer subject to calculation. Instead of risk assessment the use of intuition is called for.

The emergence of a speculative approach towards risk is paralleled by the growing influence of *possibilistic* thinking, which invites speculation about what can possibly go wrong. In our culture of fear, frequently what can possibly go wrong is equated with what is likely to happen.

The shift towards possibilistic thinking is driven by a powerful sense of cultural pessimism about knowing and an intense feeling of apprehension about the unknown. The cumulative outcome of this sensibility is the routinisation of the expectation of worst possible outcomes. The principal question posed by possibilistic thinking, 'what can possibly go wrong', continually invites the answer 'everything'. The connection between possibilistic and worse-case thinking is self-consciously promoted by the advocates of this approach. The American sociologist Lee Clarke acknowledges that 'worst case thinking is *possibilistic* thinking' and that it is 'very different' from the 'modern approach to risk' which is 'based on probabilistic thinking'.[18] However he believes that the kinds of dangers confronting humanity today require us to expect the worst and demand a different attitude towards risk. He claims that:

> Modern social organization and technologies bring other new opportunities to harm faraway people. Nuclear explosions, nuclear accidents, and global warming are examples. We are increasingly 'at risk' of global disasters, most if not all of which

[17] Professor Terje Traavik, 'GMO risks and hazards: Absence of evidence is not evidence of absence of risk', Third World Network <www.twnside.org.sg/title/terje-cn.htm>.

[18] L. Clarke, 'Worst Cases: Terror and Catastrophe' (2006) *The Popular Imagination* (Chicago: The University of Chicago Press) at 5.

qualify as worst cases.[19]

Warning us about 'how vulnerable we are to worst case events', Clarke concludes that 'we ought to prepare for possible untoward events that are out of control and overwhelming'.[20]

Politicians and their officials have also integrated worse-case thinking into their response to terrorism and to other types of catastrophic threats. Appeals to the authority of risk assessment still play an important role in policy-making. However, the prevailing culture of fear dictates that probabilistic-led risk management constantly competes with and often gives way to possibilistic-driven worst-case policies. As an important study of Blair's policy on terrorism notes, he combines an appeal to risk assessment with worse-case thinking. David Runciman, the author of this study, observed that in his response to the threat of terrorism, 'Blair relied on expert risk assessment and on his own intuitions'. Runciman added that Blair 'highlighted the importance of knowing the risk posed by global terrorism, all the while insisting that when it comes to global terrorism the risks are never fully knowable'.[21] In practice, the co-existence of these two forms of threat assessment tends to be resolved in favour of the possibilistic approach. The occasional demand for a restrained and low-key response to the risk of terrorism is overwhelmed by the alarmist narrative of a worse-case scenario.[22]

The swing from probabilistic to possibilistic thinking is closely linked to changing society-wide attitudes and perceptions of the future. The future is perceived increasingly as predetermined and independent of present human activities. It is an unknown world of hidden terror. The amplification of threat and of fear is inextricably linked with possibilistic thinking. As Lipschutz argues, the 'paradox of unknowability' leading to 'worst case analysis' reinforces the 'narratives of fear' of terrorism.[23] The future of the world appears to be a far darker and frightening one when perceived through the prism of possibilities rather than probabilities. Probabilities can be calculated and managed, and adverse outcomes can be minimised. In contrast, worse-case thinking sensitises the imagination to just that – worst cases. Clarke acknowledges the contrast between these two ways of

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[19] *Id.,* at 35.
[20] *Id.,* at 35.
[21] D. Runciman, *The Politics Of Good Intention* (New Jersey: Princeton University Press 2006) at 11.
[22] For an example of a call for restraint in policymaking see Sir Ken MacDonald QC speech cited in 'DPP warning over "war on terror"' *BBC News* (23 January 2007) <http://news.bbc.co.uk/1/hi/uk/6292379.stm>.
[23] R. Lipschutz, 'Terror in the Suites; Narratives of Fear and the Political Economy of Danger' (1999) 13 *Global Society* 17.

perceiving the future. He notes that 'if we imagine the future in terms of probabilities, then risks look safe' but 'if we imagine the future in terms of possibilities, however, horrendous scenarios appear'.[24] While it is simplistic and inaccurate to suggest that probability analysis works towards portraying the future as safe, it is definitely true that worst-case thinking strives to highlight the worst. A possibilistic interpretation of problems works to normalise the expectation of worse possible outcomes and fosters a one-sided and fatalistic consciousness of the future. Why? Because it minimises the potential for understanding a threat. Since understanding is a pre-condition for countering a problem, the declaration of ignorance intensifies a sense of impotence, which in turn augments the threat. That is why alarmist campaigns that warn of unbounded dangers tend to embrace possibilistic thinking. 'Consequential, possibilistic thinking has been commonplace among antinuclear activists and other environmentalists for years', writes Clarke.[25] Other interests advocating this approach are the counter-terrorism industry and fear entrepreneurs who actively promoted a mood of panic about the millennium bug.

Probabilistic thinking has become an anathema to fear entrepreneurs because it offers a problem-solving and positive orientation towards calculating and managing risks and securing safety. Those who regard uncertainty with apprehension and dread experimentation and innovation depict probabilistic thinking as irresponsible and dangerous. This rejection of probabilities is motivated by the belief that the dangers that we face are so overwhelming and catastrophic that we simply cannot wait until we have the information to calculate their destructive effects. From this standpoint the procedure of acting on the basis of the worst-case scenario makes more sense than waiting for the information necessary to weigh up probabilities. In any case, it is argued that since so many of the threats are unknown, there is little information on which basis a realistic calculation of probabilities can be made. One of the many regrettable consequences of this procedure is that policies designed to deal with threats are increasingly based on feelings and intuition rather than on evidence or facts. For example, a discussion paper published by Greenpeace is sceptical about using probabilistic thinking. It argues that 'risk-based approaches simply equate "absence of evidence" of an impact with "evidence of absence" of that impact'. Yet they claim 'all too often the absence of evidence flows simply from the limits of available scientific evaluation techniques'.[26] According to critics of probabilistic thinking, the absence of evidence regarding human impact on the

[24] Clarke, above n. 18, at 42.
[25] *Id.*
[26] P. Johnston and D. Santillo, 'The Precautionary Principle: A Barrier to Innovation and Progress?' (2006) *Greenpeace Research Laboratories Discussion Paper 01/2006,* University of Exeter at 2.

environment should not influence decision-making based on worst-case thinking.

The scepticism that some environmentalist thinkers express towards the authority of evidence is echoed by proponents of a pre-emptive strike against potential enemies. It is worth noting that after his pronouncement on unknown unknowns, Rumsfeld responded to a question about whether he had any evidence about Iraq supplying weapons of mass destruction to terrorists by stating that 'the absence of evidence is not an evidence of absence'.[27] From the worst-case perspective, military action does not require authentication of evidence. For Rumsfeld, ignorance or not knowing can be a spur to action. And the very absence of evidence served as a valid clue with regard to a hidden, invisible military threat that justified military action.

Since possibilistic thinking presents the future through the prism of worst-case scenario, it creates a demand for immediate action. In this catastrophic perspective there is no time to wait for evidence. The entirely unknown quality of the threat is itself proof of the danger ahead. That is why, instead of properly evaluated evidence, worse-case thinking is often the driver of anti-terrorist policy. The anticipation of catastrophic consequences continually demands that something be done. As Durodie explained, 'act now, find the evidence later' is the imperative driving this form of thinking.[28] The logic of worst-case thinking is used by the US Government to justify the adoption of its pre-emptive security strategy. According to this doctrine

> 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.[29]

US officials frequently argue that they cannot wait until they have proof of some catastrophic threat, since by that time action would be too late. As President Bush argued,

> America must not ignore the threat gathering against us … we cannot wait for the final proof, the smoking gun that could come in the form of a mushroom cloud.[30]

And he added that 'we have every reason to assume the worst, and we have

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[27] See 'transcript: Defense Department Briefing, (12 February 2002) <www.globalsecurity.org/military/library/news/2002/02/mil-020212-usia01.htm>.

[28] Bill Durodie, 'Life, liberty and politics after 9/1', <www.spiked-online.com/index.php?/site/printable/1602>.

[29] *The National Security Strategy of the United States of America* (White House: Washington D.C. September 2002), <www.whitehouse.gov/nsc/nss.pdf> at 15.

[30] 'President Bush Outlines Iraqi Threat', White House Press Release (7 October 2002) <www.whitehouse.gov/news/releases/2002/10/20021007-8.html - 42k ->.

an urgent duty to prevent the worst from occurring'. Anticipating the worst rather than weighing up the risks also informed the approach of the Blair regime. 'This is not a time to err on the side of caution; nor time to weigh the risks to an infinite balance' declared Blair.[31]

The security policies associated with possibilistic thinking have been accurately interpreted as the application of the precautionary principle to terrorism by a group of critical scholars.[32] Advocates of the possibilistic approach, such as Clarke, explicitly endorse the precautionary principle. He believes that 'we may find that the precautionary principle is most useful for urging policy-makers to try to think about unexpected interactions and unintended consequences'.[33] The Precautionary Principle that Clarke characterises as 'quintessentially worst case thinking' claims action should be taken to protect the environment even if there is no evidence of harm. The Precautionary Principle, which has been adopted by the EU, states that when confronted with uncertainty and possible destructive outcomes it is always better to err on the side of caution. A similar pre-occupation informed the advice of the Dutch Scientific Council for Government Policy when it proposed that 'some version' of the Precautionary Principle should be found a place in the Constitution.[34] As Stern and Wiener explain, 'the Precautionary Principle holds that uncertainty is no excuse for inaction against serious or irreversible risks' and that the absence of evidence should not bar preventive action.[35] This perspective informed the approach of the European Environment Agency when it insisted in January 2002 that 'forestalling disasters usually requires acting before there is strong proof of harm'.[36] The translation of this approach in the 'war against terrorism' is pre-emptive warfare, justified by Bush's claim that the US cannot hold back military action until there is 'the final proof'.

In their discussion of the legitimating role of the Precautionary Principle for justifying the war in Iraq, Stern and Wiener show the similarity of the language used by advocates of EU environmental regulation and American supporters of the war on terror. Bush's warning that if 'we wait

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[31] Blair cited in *The Guardian* (5 March 2004).

[32] See J. Stern, 'Fearing Evil' (2004) 71 *Social Research* 1111; C. Aradau and R. van Munster, *Governing terrorism and the (non-) politics of risk* (Political Science Publications, No.11/2003) (Odense: Sysddansk Universite 2005).

[33] Clarke, above n.18, at 181.

[34] See 'Onzekere veiligheid' <www.wrr.nl/english>.

[35] J. Stern and J.B. Wiener, 'Precaution Against Terrorism' in P. Bracken, D. Gordon, and I. Bremmer (eds.), *Managing Strategic Surprise: Lessons from Risk Management & Risk Assessment* (Cambridge: Cambridge University Press 2006) at 2.

[36] European Environment Agency, *Late lessons from early warnings: the precautionary principle 1896-2000* (Copenhagen: EEA 2001) available at: <http:// reports.eea.europa.eu/environmental_issue_report_2001_22/en>.

for threats to materialize, we will have waited too long' echoes the EU's Environment Commissioner Margot Wallstorm's statement that 'if you smell smoke, you don't wait until your house is burning down before you tackle the cause'.[37] In both cases the language of caution is used to minimise the status of evidence. The intuitively arrived-at conclusion that the threat is far too great to wait for leads to the exhortation for immediate action.

The precautionary approach does not necessarily encourage cautious behaviour. In its search for worst-case scenarios, it continually raises the stakes and fuels the demand for action. If as in the case of terrorism we fear the worst, then swift action is called for. As Aradau and van Munster note, the precautionary principle 'privileges a politics of speed based on the sovereign decision of dangerousness'.[38] In the domain of security policy, it promotes a highly interventionist and pre-emptive approach. Paradoxically, a casual approach towards caution is implicit in policies underpinned by a precautionary approach towards managing uncertainty.

Jessica Stern has characterised the interventionist imperative contained within the precautionary approach as that of 'action bias'. She argues that, perversely, the 'precautionary approach as applied to Iraq has made the world more dangerous and more uncertain'.[39] The institutionalisation of worst-case thinking through official policy is constantly defended on the ground that the stakes are so high that something must be done. 'The greater the threat, the greater is the risk of inaction' observes the US Government's *2002 National Security Strategy* assessment. It also notes that 'if we wait for threats to fully materializes, we will have waited too long'.[40] Outwardly this call for military action bears all the hallmarks of an aggressive militarist ethos. But a close examination of the doctrine indicates an intense sense of defensiveness and anxiety towards a threat of catastrophic dimension.

The precautionary approach towards the danger of terrorism is justified on the ground that it represents a threat to our existence. In light of such a grave threat, policy-makers feel entitled to abandon traditional forms of evidence-based policy-making. As Runciman writes:

> The trouble with the precautionary principle is that it purports to be a way of evaluating risk, yet it insists that some risks are simply not worth weighing in the balance. This could only make sense if it were true that some risks are entirely off

[37] Both are cited in Stern and Wiener, above n. 35, at 6.
[38] Aradau and van Munster, above n. 32, at 15.
[39] Stern, above n. 32, at 1117.
[40] *The National Security Strategy of the United States of America* (White House: Washington D.C. September 2002), <www.whitehouse.gov/nsc/nss.pdf>.

the scale of our experience of danger.[41]

However, if the threat of terrorism is perceived as beyond society's capacity to manage, it has come close to triumphing over its targets. One of the unfortunate consequences of the worst-case approach is that it inflates the power of terrorism. And once terrorism is depicted as a threat of such cosmic proportions, every precautionary act becomes justifiable. As Stern argues, one disturbing consequence of this perspective has been 'the temptation to imagine that the threats we face are so extreme that ordinary moral norms and laws do not apply'.[42]

5 Running riot with possibilistic thinking: the case of the millennium bug

Possibilistic thinking has emerged as a distinctive feature of 21st-century life style. During the year leading up to the new Millennium, there were ominous hints about the dreadful hazards that lay ahead. In the late 1990s, experts warned that at midnight on 31 December 1999, there would be problems with computer programmes, which would behave as if it were 1900 instead of 2000. Concern with a potential technical glitch called the Millennium Bug swiftly turned into a powerful scare about the breakdown of the computer system. At the time, industry experts, public officials, and politicians perceived the Y2K bug as the very embodiment of unknown unknowns. They regarded the 'unknown unknowns out there' with dread, and frequently used the term to highlight the apocalyptic dimension of humanity's transition to the 21st century. As Quigley wrote, both the American and British governments 'described the problem as vast and dangerous using the most dramatic terms'.[43] Many saw the Y2Kbug as a paradigmatic unknown unknown. 'The full impact of the Year 2000 has always been and is now wrapped up in the domain of unknown unknowns', claimed a leading computer scientist.[44]

During the years leading up to 2000, there were numerous predictions about the massive disruptions that would be caused by the Bug. The mood of alarm and anxiety with which some people anticipated what

[41] D. Runciman, *The Politics Of Good Intention* (New Jersey: Princeton University Press 2006) at 59.
[42] Stern, above n. 32, at 1122.
[43] K. Quigley, 'Bug reactions: Considering US government and UK government Y2K operations in light of media coverage and public opinion polls' (2005) 7 *Health, Risk & Society* 267 at 276.
[44] 'A Global View of the Year 2000 Crisis' *Federal News Service* (13 October 1999).

would happen at the stroke of midnight on 31 December 1999, indicated that age-old millennial apprehensions could still influence modern societies. It reminded some of the epidemic of fear that haunted European society a thousand year earlier in 999; when religious fanatics prophesised that the world would come to an end, the scene was set for the Last Judgment. The flames of terror caught the imagination of hundreds of thousands of people who waited for the coming Apocalypse.[45]

A thousand years later, millennial anxieties assumed a high-tech form. Religious preachers prophesised a future where widespread computer failures would unleash a cataclysmic struggle between good and evil. A group of American religious activists calling themselves *Concerned Christians* looked forward to an Arab-Israeli War that would give rise to a cycle of violence leading to Armageddon. Prominent American televangelists like Jerry Falwell and Pat Robertson predicted massive computer disruptions that would lead to disasters. One of their colleagues, Morris Cerullo, a Pentecostal healing revivalist, prophesised a catastrophe of biblical proportions:

> This panic that will sweep the nation will translate into a global depression. Shutdowns of banks will paralyze the world's financial markets. Global economies will crash ... the Bible predicts an end day when the world will see a global economic crash in one hour! Riots will break out in cities … at the tick of midnight, 2000, America could be less than thirty minutes away from nuclear devastation.[46]

Numerous alarmist publications cashed in on the panic and invented the most fantastic and frightening scenarios. One book, *Time Bomb 2000*, predicted that Y2K would lead to global chaos. Grant Jeffrey's *The Millennium Meltdown: the Year 2000 Computer Crisis* prophesised a computer meltdown that would set the stage for the rise of a conspiratorial world government of the Antichrist. The title of Richard Wiles' *Judgment Day 2000; How the Coming Worldwide Computer Crash will Radically Change Your Life* summed up the formidable dimension of the threat. Alarmist warnings about the impending catastrophe were forcefully transmitted by Michael Hyatt in his *The Millennium Bug; How to Survive the Coming Chaos*. This book provided a frightening vision of a world where air traffic would come to a standstill, military defence systems collapse, banking and credit facilities cease to operate, and power and electricity fail to function. This point was echoed by the Christian Coalition. A retired minister, Tim LaHaye, warned that Y2K could 'trigger a financial

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[45] C. Mackay, *Extraordinary Popular Delusions and the Madness of Crowds* (Ware, Hertfordshire: Wordworth Editions 1995) at 257.

[46] Cited in N.A. Schafer, 'Y2K as an Endtime Sign: Apocalypticism in America at the *fin-de-millenium*' (2004) 38 *The Journal of Popular Culture* 82 at 87.

meltdown' that would lead to 'an international depression, which would make it possible for the Antichrist or his emissaries to establish a one-world economic system, which will dominate the world commercially until it is destroyed'.

Scaremongering about Y2K was not confined to millennial cults and groups of religious zealots. Leading politicians and business leaders portrayed the problem as a threat of disastrous proportions. *The New York Times* reported that 'it makes sense to prepare for the worst' since 'lack of attention could be crippling'. The cover of one American magazine asked 'Could two measly digits really halt civilisation?' and replied 'Yes, yes – 2000 times yes!' Dr Edward Yardeni, a well known Wall Street economist, claimed that the millennium bug could cause a famine in the US because of the threat it posed to America's highly networked agricultural sector. Yardeni urged his business audiences to regard the threat as a coming war. Many leading policy-makers and business people took it upon themselves to raise the public's awareness of this threat. Dr Douglass Carmichael, a Pentagon consultant, stated that if the worst-case scenario materialised 'we could not rule out that social collapse would turn us into Rwanda, a Bosnia, a worldwide spasm of social reaction grasping for power and control'. James Adams, the former CEO of United Press International launched, a Y2K website to 'sound a public wake up call'.

Indeed, it is striking that many businessmen, corporate executives, and computer consultants were no less alarmist in their predictions than were zealous religious preachers. Some of them predicted that the cost of fixing this problem was so high that it would destabilise the world economy and lead to a recession. Publications with titles like, *THE COMPUTER TIME BOMB: HOW TO KEEP THE CENTURY DATE CHANGE FROM KILLING YOUR ORGANIZATION* transmitted the message of fear whilst also making a sales pitch. The Millennium Bug scare helped produce a thriving fear market in promoting services to fix the problem. Companies peddling millennium-bug-related services were in the forefront of scaremongering. One American business, The Gartner group, predicted that 30 per cent of companies worldwide would experience some critical software failure because of YK2. Consultancies claimed that the damage caused by an impending computer crash would run into trillions of dollars.

The scale of this major internationally co-ordinated effort and the massive expenditure of hundreds of billions of dollars to deal with possible technologically induced crisis were unprecedented. Only a tiny minority of IT experts were prepared to question those devoted to constructing and inflating the 'millennium bug problem'.[47] Even social scientists, who usually

[47] One critic of the doom mongers was Ross Anderson 'The Millenium Bug – Reasons not to Panic' 11 December 1999, <http://www.ftp.cl.cam.ac.uk/ftp/users/rja14.y2k.html> (accessed 23 May 2005).

make an effort to interrogate exaggerated claims about an impending disaster, failed to raise any probing questions. One IT industry commentator, Larry Seltzer, noted that 'looking back on the scale of the exaggeration, I have to think that there was a lot of deception going on'. He added that the 'motivation – mostly consulting fees – was all too obvious'. Nevertheless, it was not simply about money. Seltzer believes that there were also a lot of experienced people with no financial interest who deeply believed it was a real problem.[48]

The YK2 experience shows that precautionary delusions about impending disasters can exact colossal financial costs. Some cynics have argued that scaremongering about a technical glitch served as a job creation scheme. For example, David Starr, chief information officer of the Reader's Digest Association, portrayed the hype over Y2K as the 'biggest fraud perpetrated by consultants on the business community since re-engineering'. But the fantasies that surrounded Y2K also influenced the thinking of hardened entrepreneurs. As a result, insurance companies sought to cover themselves and some of them excluded Y2K cover because of the perception that it posed an unacceptable level of risk. Lloyds of London announced that it would not insure any ship without certification of Y2K compliance.

When worst-case thinking captures the public's imagination, there is always a price to pay. In the case of the millennium bug, it is possible to see that the main accomplishment of precautionary thinking was the transformation of technical problems into apocalyptic threats. This was a threat that swiftly mutated from a technical problem into a peril that appeared to threaten the global economy and according to some account human existence. Many who were not influenced by evangelical preachers and did not interpret the problem as a form of divinely ordained punishment nevertheless feared the consequences of the coming disaster.

6 The philosophy of the fear entrepreneur

Possibilistic thinking succeeds in transmitting the philosophy of fear entrepreneurs in a coherent form. This form of thinking successfully captures and expresses the dominant mood of cultural pessimism. In the name of directing the public's attention to its worst fears, it adopts a cavalier stance towards the authority of knowledge and of evidence. A philosophy that objectifies the idea that the absence of evidence is not an evidence of absence conveys the proposition that acting on the basis of an absence of evidence is as valid as evidence-based action. *Indeed this proposition provides the rationale for the sentiment that it is precisely the absence of*

[48] L. Seltzer, *PC Magazine* (16 February 2005).

evidence that constitutes the proof that precautionary action needs to be taken. This enthronement of ignorance has been described as 'you never knowism' by two critics of worst-case thinking. Friedman and Sapolsky explain that 'You Never Knowism earns its name from its insistence on planning around what we do not know rather than what we do'.[49]

The significance that precautionary anti-terrorism attaches to the status of the unknown has the pernicious consequence of systematically devaluing the status of knowledge. It exhorts society to take what we do not know as seriously as what we do. Indeed it sometimes appears that what we do not know plays a greater role in influencing policy-makers than what we do know. Furthermore, by suggesting that many future threats are unknowable it fundamentally calls into question people's capacity to reason and to understand. Not knowing or ignorance become as much a driver of policy as hard-won evidence. As the experience of the Millennium Bug showed, the precautionary approach displaces evidence-based policy with revelation-based calls to action. What is unknown is not an obstacle to action. Apprehension about the unknown continually invites action that is oriented towards the worst case.

Worse-case thinking encourages society to adopt fear as of one of the dominant principles around which the public, its government, and institutions should organise their life. It institutionalises insecurity and fosters a mood of confusion and powerlessness. Through popularising the belief that worst cases are normal, it incites people to feel defenceless and vulnerable to a wide range of future threats. In all but name it constitutes an invitation to terror. The elevation of terrorism into an existential threat is one of the disturbing accomplishments of precautionary-driven policies. Once the threat of terrorism is perceived according to the possibilistic paradigm, real live terrorists do not have to do very much to achieve their objectives. Societies that are wedded to fantasising worst cases soon learn to live them.

Commentators often associate current military action and anti-terrorist policies with a narrow neo-conservative agenda promoted by Bush and a small circle of ideologues. However, what this analysis overlooks is that these policies draw on cultural resources that influence attitudes towards uncertainty and risk in general. Fear entrepreneurs promoting campaigns around public health issues, child safety, or global warming are equally responsible for encouraging the expansion of the empire of the unknown. The devaluation of knowledge and the enthronement of ignorance are systematically conveyed through policy statements and popular culture. Speculation and worse-case thinking resonate with a cultural imagination that feels so uncomfortable engaging with uncertainty. Indeed, the readiness with which today's elites are prepared to defer to the unknown is evidence of

[49] B. Friedman and H. Sapolsky Harvey, 'You Never Know(ism)' (2006) XV *Breakthroughs* 4.

a pervasive sense of cultural pessimism.

7 Precautionary culture

By all objective accounts, it is difficult to explain why Western societies should feel so overwhelmed by the condition of vulnerability. Compared with the past, people living in Western societies have less familiarity with physical pain, suffering, debilitating disease, poverty, and death than previously. Western societies enjoy what is by historical standards a high level of stability and relative prosperity. Critics of the precautionary culture note that:

> By any historical measure, Americans are particularly safe. And we live in an especially safe neighbourhood. The sorts of security threats that plagued nations since their invention, indeed that necessitated their creation – invasion and civil war – are unthinkable here.[50]

And yet despite an unprecedented level of stability and prosperity, contemporary culture continually communicates the idea that humanity is confronted by powerful destructive forces that threaten our everyday existence. Despite a

> century of extraordinary successes in public health: we complain of more symptoms, spend more days in bed and rate our health as worse than we did 40 years or even 80 years ago.[51]

Of course, the perception of safety is an existential rather than an objective fact. Social scientists know that whether people feel safe or insecure is to a considerable extent a matter of subjective judgement. Surveys show that young men are far less likely to be worried about crime than are elderly women. Yet crime statistics indicate that elderly women suffer far lower levels of victimisation than young men. A society's sense of safety is also not directly an outcome of the statistical incidence of physical threats. It is widely known that people in prosperous societies living in relatively privileged circumstances can feel unsafe and insecure. Individuals who are freed from the grinding routine of day-to-day survival can shift their concern from being worried about hunger and chronic disease to a preoccupation with their emotional well-being.

In contemporary society, we can never feel safe or healthy enough.

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[50] *Id.*

[51] S. Wessely, 'Risk, psychiatry and the military' (2005) 186 *British Journal of Psychiatry* 459 at 464.

With every advance in medical science, communities demand an even higher standard of health. It is widely recognised that contemporary society regards safety as an end in itself and tends to look upon failures in safety regimes as unacceptable. The 21st-century obsession with safety has become so pervasive that in the UK some officials have warned that 'enough is enough – it is time to turn the tide'. One report has called for a campaign to emphasise the 'importance of resilience, self-reliance, freedom, innovation and a spirit of adventure in today's society'.[52] However, such pleas are overwhelmed by powerful cultural forces that insist that people can never be safe enough. Consequently, safety and the attitude of caution are now treated as inherently positive values across the entire political spectrum. According to this ethos of safety, even the term 'accident' is now regarded as inconsistent with contemporary Western values. Public health officials often claim that most injuries suffered by people are preventable and that to attribute such an event to an accident is irresponsible. The American emergency medicine establishment has been in the forefront of the campaign to expunge the word 'accident' from its vocabulary.[53]

Safety consciousness is not simply the direct consequence of the growth of prosperity. Society's obsession with safety has also gained momentum through the growth of scepticism towards innovation, change, and experimentation. Throughout modern times, people looked to medicine, science, and technology to make their lives safer. They still do, of course. But there is now a powerful mood of suspicion towards innovation and change. The very term 'human intervention' has acquired negative connotations. Terms like 'human impact', 'human intervention', and 'ecological footprint' convey a negative sense of folly and destruction. Human intervention has always been associated with the belief that its positive consequences outweighed its downside. This modernist orientation has given way to a more pessimistic account wherein human intervention is associated with loss as much as gain, and the former is increasingly seen to outweigh the latter. Rather than serving as a solution to our problems, new technology is often indicted for its potential to increase the power of human destructiveness. Former American Vice-President Al Gore expressed this concern when he warned that the 'power of technologies now at our disposal vastly magnifies the impact each individual can have on the natural world'.[54]

Western societies have become so obsessed with safety that virtually every human experience comes with a health warning. It is not simply

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[52] Better Regulation Commission, *Risk, Responsibility and Regulation: Whose Risk Is It Anyway?* (London: Better Regulation Commission 2006) at 3.

[53] R.M. Davis and B. Pless, '*BMJ* bans "accidents"' (2001) 322 *British Medical Journal* 1320.

[54] Al Gore, 'The time to act is now: the climate crisis and the need for leadership' (5 March 2006) <www.mi2g.net>.

children's playgrounds and schools that have become dominated by the ethos of safety for its own sake. Even organisations such as the police and the army have become subject to the dictates of health and safety. As a result, both of these institutions are becoming increasingly risk averse. One British journalist has noted that the police rarely venture out, and even when they are confronted with a serious situation they rarely take risks. In one case, armed police stood for 15 days besieging a London home, only venturing in after the hostage had escaped by his own efforts and the lone gunman perished in the fire that he started.[55] The ethos of safety has also become institutionalised within the military. Army commanders have to draw up risk assessments for every dimension of their soldiers' training. Some have given up testing soldiers to the limit lest they inadvertently contravene health and safety rules.[56] General Sir Michael Rose, former head of the SAS, has spoken out about the destructive consequences of risk aversion and the ethos of safety for the morale of the military. He has denounced the 'moral cowardice' that has encouraged what he describes as the 'most catastrophic collapse' of military ethos in recent history.[57] If anything, the decline of the warrior ethos is far more comprehensive within the US military. One analyst believes that risk aversion has undermined the effectiveness of the US military. 'As emphasis on risk avoidance filters down the chain of command, junior commanders and their soldiers become aware that low-risk behaviour is expected and act accordingly', he notes.[58]

Unlike some institutions in society, the military cannot survive without taking risks. However, the military values associated with the warrior ethos face a challenge from potent cultural influences that negate risk-taking behaviour. Despite the many Hollywood action-packed movies that celebrate heroism and bravery, there is little cultural valuation for risk-taking military behaviour. The military is not immune to the influence of precautionary culture. Prevailing norms towards health and safety decry risk-taking behaviour. A culture that shows a low threshold towards losses in everyday life is unlikely to possess the capacity to celebrate risk-taking behaviour within military institutions. That is also one reason that the status and the authority of the military have declined. The elites of society have distanced themselves from military values, and the military and their participation in this institution have significantly diminished. Even the mainstream of society has become estranged from military values. As two radical critics remark,

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[55] Mick Hume, 'A police state, without any police' *The Times* (25 February 2004).
[56] See *The Daily Telegraph* (23 February 2004).
[57] 'J'Accuse! Top General lambasts "moral cowardice" of government and military chiefs' *The Daily Mail* (12 April 2007).
[58] R. Lacquement, 'The Casual-Aversion Myth' (2004) 57 *Naval War College Review* 39 at 46.

the representative image of the U.S. soldier is no longer that of a John Wayne, and more important, the profiles of U.S. soldiers do not resemble the profiles of the U.S. citizenry.[59]

In Britain too, fighting in a war is increasingly outsourced to private contractors, foreign mercenaries, and the most economically disadvantaged section of society.

One of the most striking manifestations of society's estrangement from military and warrior values is the ascendancy of a powerful mood of casualty aversion. The military are continually concerned about the ability of the public to tolerate casualties. Casualty aversion appears to have influenced the 1989 decision of the US Department of Defense to prohibit media coverage of deceased military personnel returning from Dover Air Force Base.[60] One critic of what he calls America's 'elite casualty phobia' has noted that in many recent military engagements – Bosnia and Kosovo – 'US ground forces were deliberately withheld from participation' and that in Afghanistan local ground forces were often used to hold down casualties.[61]

The significance attached to safety and loss avoidance not only undermines the capacity of Western societies to deal with violent opponents but it also makes them uniquely vulnerable to the risk of terrorism. Preoccupation with safety and the constant acknowledgement of vulnerability acts as an invitation to terrorism. As Homer-Dixon observed, 'our increased vulnerability makes us more risk-averse, while terrorists have become more powerful and more tolerant of risk'. He added that as a result 'terrorists have significant leverage to hurt us'.[62] These different cultural attitudes have important implications for the way that the War on Terror is played out globally. It appears that Western concerns towards avoiding losses encourage the response of terror.

The powerful sense of vulnerability and insecurity that prevails in the Western world is frequently blamed on a rapidly changing globalised world that produces unprecedented levels of uncertainty. As Tobias Arnoldussen argues in this issue of *Erasmus Law Review*, vulnerability and uncertainty are 'absolute presuppositions of precautionary logic'.[63] Virtually every official document and expert statement on the problem of terrorism repeats a version of this mantra. 'It has become something of a cliché that the beginning of the twenty-first century is marked by increasing complexity

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[59] M. Hardt and A. Negri, *Multitude* (London: Penguin Books 2005) at 47.

[60] Lacquement, above n. 58, at 41.

[61] J. Record, 'Why the Strong Lose' (2005-2006) 35 *Parameters* 16.

[62] T. Homer-Dixon, 'The Rise of Complex Terrorism' (2002) 128 *Foreign Policy* 12.

[63] See T. Arnoldussen, 'Precautionary logic and politics of moderation' (2009) This issue of *Erasmus Law Review* at 259.

and uncertainty, on a national, regional and international scale' begins a report arguing a case for a new national security strategy for the UK.[64] Yet the cliché of unprecedented level of uncertainty is rarely contested. However, ideas about certainty and uncertainty are not founded on objective facts but are shaped by cultural attitudes towards the future. Humanity actually knows quite a lot about the world. There are some threats that lurk in the background and occasionally catch us unaware, but most of the time, at least by the standards of historical experience, we live in a relatively stable world. What makes us feel uncertain are not the uncontrollable forces unleashed by globalisation but our lack of clarity about our place in the world. Concern about risk and safety express the difficulties that Western culture has in making sense of change in an uncertain world. The response of precaution is an attempt to deal with this predicament.

[64] C. Edwards, *The Case For A National Security Strategy* (London: Demos Report 2006) at 5.