

“Next generation
resilience relies
on citizens and
communities, not the
institutions of state...”

RESILIENT NATION

Charlie Edwards

First published in 2009
© Demos. Some rights reserved
*Magdalen House, 136 Tooley Street,
London, SE1 2TU, UK*

ISBN 978 1 9066930 13 8
Copy edited by Susannah Wight, London
Series design by modernactivity
Typeset by Chat Noir Design, Charente
Printed by Lecturis, Eindhoven

Set in Gotham Rounded
and Baskerville 10
Cover paper: Arctic Volume
Text paper: Munken Premium White



Mixed Sources

Product group from well-managed
forests, controlled sources and
recycled wood or fiber

www.fsc.org Cert no. CU-COC-804101
© 1996 Forest Stewardship Council

RESILIENT NATION

Charlie Edwards

Open access. Some rights reserved.

As the publisher of this work, Demos wants to encourage the circulation of our work as widely as possible while retaining the copyright. We therefore have an open access policy which enables anyone to access our content online without charge.

Anyone can download, save, perform or distribute this work in any format, including translation, without written permission. This is subject to the terms of the Demos licence found at the back of this publication. Its main conditions are:

- Demos and the author(s) are credited
- This summary and the address *www.demos.co.uk* are displayed
- The text is not altered and is used in full
- The work is not resold
- A copy of the work or link to its use online is sent to Demos

You are welcome to ask for permission to use this work for purposes other than those covered by the licence. Demos gratefully acknowledges the work of Creative Commons in inspiring our approach to copyright. To find out more go to *www.creativecommons.org*



Contents

Acknowledgements	7
Introduction	9
1 Tilly and the tsunami	13
2 A brittle society	25
3 Lost in translation	35
4 The new protective state	47
5 Every emergency is local	57
6 Networks of resilience	63
7 Resilience 2.0	71
8 A resilient nation	79
Notes	85
References	91

Acknowledgements

I am extremely grateful to Arup for supporting this project. Nick Pope and Henrik Kiertzner deserve special mention for their unfailing assistance throughout the project. Many people in government, the private and voluntary sectors and academia have been very kind in giving up their time. In particular I would like to thank Martin Fenlon, Bruce Mann, Richard Mottram, Brooke Rogers, Chris Samuel, David Steven and Moya Wood-Heath.

This pamphlet would not have been possible without expertise and guidance from a number of people including Sarah Brown, Jacquie Campbell, Ace Dann, Bill Duffy, John Ellis, Kelvin Hattersley, Jim Kennedy, Mark Kimberlin and the Walcott Emergency Volunteers Association.

Geoffrey Edwards, Laura Gibb, Peter Hennessy and Kathy Settle have been incredibly helpful reviewing drafts and acting as sounding boards for ideas. Finally, thank you to all my colleagues in Demos and our wider network who have been so supportive in the past ten months: Peter Bradwell, Dominic Campbell, Hugh Cleary, Jaime Dipple, Simon Hampson, Peter Harrington, Michael Harvey, Samuel Jones, Justin Kerr-Stevens, VML, Duncan O'Leary, Richard Reeves and Susannah Wight.

All mistakes and omissions remain my own.

Charlie Edwards

April 2009

Introduction

We live in a brittle society. Our just-in-time lifestyles provide most of us with a seemingly infinite number of goods and services. This is made possible by greater social and economic interdependencies and mass communication. Over 80 per cent of Britons live in urban areas relying on dense networks of public and private sector organisations to provide them with food, water, electricity, communications and transport. For much of the time this lifestyle poses us few challenges, but it relies on an infrastructure that is outmoded and archaic, and which increasingly lacks the capacity to support our complicated lives.

Food supply chains, sewerage systems, electricity grids and transport networks are part of the UK's critical national infrastructure and have become progressively more interconnected and reliant on information and communication technology. In the past two decades these 'essential services' have been privatised. Today some 85 per cent of the critical national infrastructure is owned by the private sector, adding another layer of complexity to the brittle system. Our everyday lives and the national infrastructure which they rely on operate in a fragile union, vulnerable to even the smallest disturbances in the network.

Both are part of a global ecosystem, which is increasingly impoverished and can withstand very little force of change. This has created an environment of extremes, notably the heat wave across Europe in 2003, the widespread flooding of the UK in 2007 and the snow storms over much of the country in 2009. Extreme weather events are becoming more frequent and intense, disrupting our everyday lives and causing system failure across the national infrastructure. Together, these three dimensions (our lifestyles, the national infrastructure and extreme weather) make up our brittle society.

As a result we need to rethink the concept of resilience in a way that resists the temptation to think only in terms of the ability of an individual or society to ‘bounce back’ but suggests a greater focus on learning and adaptation. In a new definition of this concept, responsibility for resilience must rest on individuals not only on institutions. *Resilient Nation* raises some profound challenges and issues around the role of individuals and communities in the UK, and the relationship between the state and citizens.

This pamphlet is about how we can build and sustain community resilience with support from central and local government, relevant agencies, the emergency services and voluntary organisations. Chapter 1 explores the role of *education* in building resilience and describes how Tilly, a schoolgirl holidaying in Thailand, saved her family and hundreds of tourists because of a geography lesson she remembered.

Chapter 2 describes in more detail how our society has become brittle. According to Richard Mottram, the former Permanent Secretary, Intelligence, Security and Resilience in the UK government, recent emergencies have ‘exposed the Government’s inadequate understanding of societal interdependencies... resting on just in time principles, or the way in which response actions in one area could have greater, unintended consequences in another’.¹

Chapter 3 explores how risk communication gets lost in translation and challenges the dual notions that human beings are rational and they panic in an emergency. Both notions appear to be false. Thousands of Americans decided to drive instead of fly after 9/11. The collapse of the two towers was still a vivid memory and driving in contrast must have felt much safer. In the years that followed 9/11, Gerd Gigerenzer, a psychologist at the Max Planck Institute in Berlin, patiently gathered data on travel and fatalities. In 2006 he published a paper comparing the statistics of the number of people flying and the number driving in the US five years before the 9/11 attacks and five years after. It turned out that the shift from planes to cars in America lasted one year. Then traffic patterns went back to normal. Gigerenzer also found out that, as he had expected, fatalities

on American roads soared after 9/11 and settled back to normal levels in September 2002. Gigerenzer was able to calculate the number of Americans killed in car crashes in one year as a result: 1,595.²

Not only are humans predictably irrational, as Dan Ariely suggests,³ but according to Amanda Ripley, ‘people rarely do hysterical things that violate basic social mores. The vast majority of the time... people don’t panic... the fear of panic may be more dangerous than panic itself.’⁴ More importantly, as Ripley observes, the enduring expectation by officials in government, the emergency services and the mainstream media that people *will* panic leads to all kinds of distrust on the part of neighbours, politicians and police officers.⁵

Chapter 4 describes the evolution of emergency planning and the role of the voluntary sector since the end of the Cold War. The idea of the UK as being a well-organised, well-defended and resilient country during the Cold War is, on closer inspection, largely a myth but one still propagated by politicians and the mainstream media. Chapter 5 describes the role of volunteers in a village in north Norfolk, which was struck by a storm surge that hit the East Anglian coast in November 2007.

Chapter 6 reveals the powerful networks that criss-cross the UK supporting hundreds of thousands of people. The chapter focuses on the Farm Crisis Network, the role of faith communities and the myriad of governance networks that exist in the UK. Chapter 7 explores the potential of social media in emergency planning and disaster management and explains why the Los Angeles Fire Department uses Blogger and Twitter, and how thousands of people got together virtually to track Hurricane Gustav.

The final chapter suggests an approach to building a resilient nation. Instead of comprising a list of recommendations, the chapter describes how government departments, relevant agencies and local authorities can shape and influence existing models of best practice around the country by adopting the *four Es of community resilience*: engagement, education, empowerment and encouragement.

1 Tilly and the tsunami

The wave

Tilly Smith pulled on her mother's arm and pointed to the sea: 'We must get off the beach now,' she screamed. 'Mummy I think there's going to be a tsunami.' They watched as the water along the shoreline receded, exposing a great swathe of beach, leaving fish stranded on the sand. Looking out to the ocean they saw the sea swell and bubble. Then Tilly's mother saw a yacht tip vertically in the bay, 'Run!' she shouted.

The Smiths were celebrating Christmas at Maikhao Beach in Phuket, southern Thailand. In the early hours of 26 December 2004 a massive earthquake, measuring 9.2 on the Richter scale,⁶ occurred hundreds of miles away just north of Simeulue Island, off the western coast of northern Sumatra. The powerful earthquake caused the sea bed to rise by several metres, displacing a massive volume of water, which in turn created a tsunami. Within 15 minutes the north of Sumatra was hit by a wave of water up to ten metres high.

Ninety minutes later the tsunami reached Sri Lanka and the east coast of India.⁷ The Boxing Day tsunami cost the lives of 229,866 people, including 186,983 dead and 42,883 missing. Despite being closer to the epicentre, it took the tsunami nearly two hours to reach the coast of Thailand, the shallow Andaman Sea acting like a brake on the moving water. But in spite of the time lag thousands of people were caught unprepared. There were no early warning systems in the Indian Ocean.

Tilly's hysterical cries finally convinced her mother to act. With her husband, Penny Smith began to warn sunbathers about the impending tsunami, then grabbing their belongings they headed up the beach to their hotel, alerting the staff, who began to evacuate the rest of the beach. Dozens of lives were saved.

Tilly's heroic story has been told and retold several times in

interviews,⁸ magazines,⁹ books¹⁰ and online.¹¹ On first hearing the story, many people seem genuinely surprised that Penny Smith trusted the instincts of her ten-year-old daughter. To understand why Penny was convinced her daughter knew something she did not, we have to go back to school.

Education, education, education

Two weeks before her holiday, Tilly and her class at Danes Hill Prep School had watched a video of a tsunami as part of their geography lesson. Geography topics for Year Six pupils (age 10 to 11) include tectonic plates, earthquakes and volcanoes. And in contrast to teaching methods a decade ago, pupils use interactive whiteboards and the internet, so they are able to watch and learn from real life examples. Andrew Kearney, Tilly's geography teacher, got the class to build a model of an earthquake-proof house out of balsa wood to demonstrate the effects a powerful earthquake would have on a building. Speaking to the media some time after the event Andrew Kearney said Tilly had seen 'the consequences of not acting when something strange happens'.¹²

Tilly's story highlights many issues: the lack of a warning system in the Indian Ocean; the trust between a parent and their child; and our human instinct for survival. As soon as staff alerted sunbathers on Maikhao Beach they ran for shelter – this is what scientists refer to as our 'fight-or-flight' reaction, the biological response of animals to acute stress.

For the purposes of this pamphlet, however, the most significant issue highlighted by Tilly's story is the power of education. Educating Tilly about natural disasters had been a central part of her geography class. The class was no different from normal – Andrew Kearney had not placed special emphasis on the information. The class fulfilled part of the curriculum. International experts believe that education is so important that the theme chosen for the UN International Strategy for Disaster Risk Reduction in 2007 was 'Disaster Risk Reduction Begins at School'. The aim of the initiative was to 'inform and mobilize governments, communities and individuals to ensure that

disaster risk reduction is fully integrated into school curricula in *high risk countries* [my italics] and that school buildings are built or retrofitted to withstand natural hazards'.¹³ Educating the next generation about living with hazards can help societies cope better with disasters when they do happen.

For decades local authorities and the emergency services in the UK have informally engaged with schools and wider society on a diverse set of 'resilience related' issues from checking home fire alarms regularly, personal safety and coastal flooding to emergency first aid (can you remember your Emergency ABC?). Engaging with young children at school was based on a belief that educating them about risks would help children and their families to be more prepared.

The new environment

Today the threat of a nuclear attack against the UK is extremely unlikely but we do face a broad spectrum of risks. According to the UK's *National Risk Register*, risks are made up of *threats* like terrorism and organised crime; *hazards* such as flooding, heat waves and snow storms; as well as *major accidents* like the Buncefield oil explosion or the King's Cross fire.¹⁴

Since 2001 the government has adapted to new risks, by adopting new legislation and designing more effective civil protection structures and activity. In the last 12 months the Government has realised that it needs to refocus its attention away from formal institutions and organisations and concentrate instead on community resilience. There are four reasons for this shift in approach:

- Our environment is changing – fast. Natural disasters are becoming more frequent and intense, which places greater responsibility on individuals and communities to mitigate and prepare for events.
- Society is complex and individual choices have a much greater effect on communities than they did in the past. For example, in the UK we build houses on flood plains (and wonder why our houses are more prone to flooding) and lead, out of choice,

complicated lives that force us to depend on an outmoded and increasingly vulnerable infrastructure (electricity, water and gas) that is not designed for the twenty-first century.

- In the event of a major disaster we expect the emergency services to arrive in an instant. Realistically it is often not possible to get to everybody at once and so rightly the services prioritise those who are in most danger and the most vulnerable. This places a responsibility on the rest of us to ensure we are prepared for and resilient in an emergency.
- Politicians and the mainstream media continue to believe in the myth of civil defence. They have relied on the false assumption that Britain's Cold War civil defence model worked and, even worse, could be replicated today.

It all adds up to a neat paradox which this pamphlet explores in greater detail. As *individuals* we have never been safer, wealthier (in spite of the current recession) or healthier. We have never had so many tools to help us live our lives, but as a *society* our complicated lives, individual fears and increasingly high expectations have led us to believe that we are more at risk than ever.

Rethinking resilience

Resilience is an important feature of modern day societies. Recent experience in the UK illustrates the diverse nature of risk and its ability to affect our everyday lives, however (and wherever) we choose to lead them. Governments have in the past tended to understand and describe resilience in a narrow, mechanistic way. David Omand, the government's first intelligence and security coordinator, reflected this thinking in a journal article in 2005 where he described resilience as the 'capacity to absorb shocks and to bounce back into functioning shape, or at the least, sufficient resilience to prevent stress fractures or even system collapse'.¹⁵ More recently Cabinet Secretary Justice Kenny MacAskill echoed this sentiment when he launched Scottish Resilience, suggesting that the reorganisation was to 'take all practicable steps to... respond and cope with major shocks [so] we can bounce back quickly'.¹⁶

Bouncebackability, to coin a phrase by Iain Dowie, the Crystal Palace manager, instinctively feels too narrow, too short term and too reactive when considering the scope of resilience. Resilience cannot solely be about how citizens and society respond to risks.¹⁷

Help is at hand from two leading academics in the field of resilience studies. Brian Walker, from Australia's Commonwealth Scientific and Industrial Research Organisation, and Neil Adger, at the Tyndall Centre for Climate Change Research, University of East Anglia, offer us subtle variations on the theme of resilience. For Walker resilience is 'the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks'.¹⁸ Adger meanwhile believes that 'resilience of social-ecological systems is determined by their ability to absorb disturbance, their ability for self-organisation and the capacity to learn and adapt'.¹⁹

These definitions may sound a tad theoretical but they are a really useful starting point in thinking about resilience in today's network society.²⁰ When we are faced with risk, like the residents who lived near the Buncefield oil depot, which exploded in 2005, we respond in a myriad of ways. Physically and mentally we absorb the event (the explosion and its effect) before we take action (call the emergency services) and adapt (find shelter somewhere else) accordingly. How we behave depends on who we are – rarely do we simply 'bounce back' from an event – instinctively we change our behaviour, act differently and learn from the experience.

This is why Neil Adger's description is so important – as humans we have the capacity to learn and adapt. Just as humans change their habits continuously, especially after emergencies, other communities – like the business community – constantly reorganise themselves, especially after a major shock like the credit crunch and/or when the profit margin is at stake. And this goes for society as well: we adapt our lifestyles, change our habits and learn from people around us.

In short we need to find a new definition of resilience that suits our complex lives and reflects our collective response to

risk. The project advisory group has developed our own working definition based on Walker, Adger and others:

*Resilience: The capacity of an individual, community or system to adapt in order to sustain an acceptable level of function, structure, and identity.*²¹

To bring this definition to life consider the following quote from a vet a year after foot and mouth disease (FMD) struck in Cumbria during 2001:

In some ways it is like after the FMD epidemic, before and after, everything is the same, but nothing is the same. Part of you is trying to find where you fit in the new reality, part of you wants the safety of the old ways. Slightly dislocated from your surroundings, but the physical surroundings are the same, but I suppose you have changed, and the old certainties, that were not certain but seemed it, have made way for new changeable ways that are not certain, and you know that they are not certain.

Bridging the gap

Where should responsibility for resilience lie – at the national level with government, with local authorities, or with emergency services and voluntary organisations? The answer is all of the above. At the national level the government plays a crucial role in shaping and influencing the direction of travel as well as leveraging the human and financial resources of a nation at a time of crisis.

At the grass roots level individuals and communities play a key role – not least because they may be involved in the emergency. Individual resilience, based on our instinct for survival, is central to a resilient nation – thus responsibility must lie at the local level too. In many European countries and the US personal responsibility is central to community resilience. In the US, for example, the Federal Emergency Management Agency relays this message regularly – individual responsibility is the principal building block of a resilient community.

Communities lie somewhere between the national and the individual level but their complexity and nebulous structures often provide no obvious ‘place’ to leverage resilience. The community plays two central roles: it acts as a conduit of information and resources from the national and regional level both downwards and upwards by providing feedback and experiences from individuals and neighbourhoods.

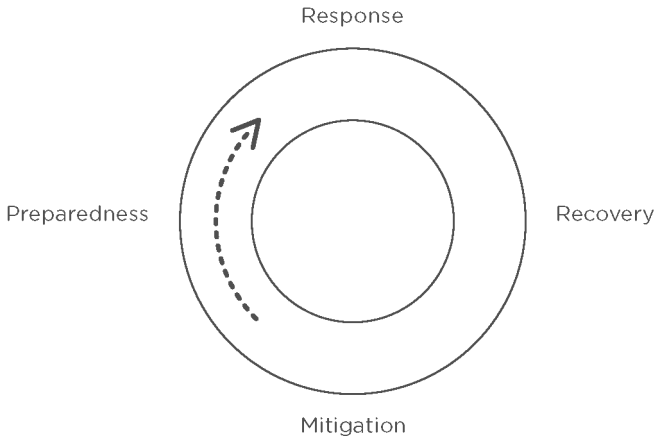
What is meant by ‘community’ and ‘community resilience’ is highly subjective. Both could be described as elastic concepts. Communities, like our own individual identities, are made up of variations of categories to which we can simultaneously belong. For example, Amartya Sen suggests that at any one time he can be an Asian, an Indian citizen, an author, a feminist, an economist and a British resident.²² Defining a community therefore risks falling into a similar trap, as communities themselves are likely to have multiple identities with elements stretching across a myriad of other networks.

A community might be drawn from a local area (a village), share common interests (virtual, sporting, intellectual) or take part in similar activities (shopping, working and travelling). The point is not necessarily to define what a community is or what community resilience should look like, but rather to use it as a framework in which to develop certain skills and capabilities that will help people become more resilient. These skills and capabilities should be based on the social resilience cycle (Figure 1).

The social resilience cycle is made up of four stages – mitigation, preparedness, response and recovery:

- *Mitigation* is the general process of strengthening a community’s capabilities so that it has the resilience to cope better with any future disaster. This can be driven by communities or organisations. For example, the Association of British Insurers recently launched a new report, *Climate Adaptation*,²³ giving guidance on insurance for new developments, with the aim of helping developers and planners build properties to withstand the impacts of climate change. If developers avoid building on

Figure 1 **The social resilience cycle**



high flood-risk areas and build better protected buildings, flood insurance could remain widely available and competitively priced.

- *Preparedness* involves anticipating emergencies and creating a response capability by analysing probable threats, creating a local plan, setting up appropriate warning systems and response management structures, organising training and stocking supplies.
- The *response phase* refers to the actions taken during and immediately after a disaster occurs. The focus here is on saving lives, minimising damage to property and disruption to the community. Much of the focus is on the role of emergency services and the voluntary sector but in the first hours of an emergency individuals and communities bear the brunt of the impact and have to adapt and respond accordingly.
- Lastly, the *recovery phase* is the short- to long-term phase of rebuilding and restoring a community. During this phase

damage assessment is completed, and used to inform the reconstruction of housing and infrastructure, and the re-establishment of community institutions.²⁴

Engaging with local communities presents a number of challenges, however, not least deciding who to engage with in the community, state institutions and voluntary organisations. One model designed by the academic Lawrence Singer resembles a pyramid of participation. During research into the role of neighbourhood policing Singer found that engaging with residents closely resembled a pyramid of participation, comprising a small number of parish councillors at the apex elected to govern, through interest group leaders negotiating issues and services, to volunteers, loyal residents and disengaged residents at the base interested in consulting, listening or ignoring, respectively.²⁵

The politics of resilience

In her book *The Unthinkable* Amanda Ripley draws attention to the fundamental lesson that was identified after the July bombings on London's transport network in 2005. London's extensive surveillance camera system was praised for its help during the investigation. But the official report found one 'over arching, fundamental lesson': emergency plans had been designed to meet the needs of emergency officials, not regular people. On that day, the passengers had no way to let the train drivers know that there had been an explosion. They had trouble getting out of the train as the doors were not designed to be opened by the passengers. Finally, passengers could not find first aid kits to treat the wounded.²⁶

At the end of 2008 the Home Affairs Select Committee created a sub-committee to look at the Government's counter-terrorism strategy. Much of the sub-committee's first oral evidence session focused on the London transport network – the technology and new processes that had been put in place. But the most interesting exchange came right at the end between Patrick Mercer, chairman of the sub-committee, and Tim

O'Toole, then managing director of the London Underground, when they discussed first aid equipment and how many stretchers are on each train:

Chairman: Why are the public not told where they are?

Mr O'Toole: Because the public does not have access to them, the driver has to access them.

Chairman: Have you considered putting such devices in each carriage?

Mr O'Toole: Well, we consider all of these ideas as they come along, but again our emergency team had a review of how exactly would this work, would it be effective, how people would deal with that, and determined that it would be of marginal utility.²⁷

To be clear, London Underground's emergency team decided that, based on their own assessment and assumptions of how the public behave, it would be of only 'marginal utility' for the public to know where safety equipment is stored. This institutional approach to risk management is not confined to London Underground but is replicated across the UK – in Chapter 5 I will describe the moment a village was flooded and a warden rang the police station to ask for the flood siren to be sounded, but was told this wasn't possible as it might cause undue alarm and panic among residents in the village.

The politics of resilience is founded on two pillars: *trust* and *dialogue*. As a recent Demos pamphlet argues:

Trust is one of the most important assets that a governing institution can possess. Its presence helps to foster democratic participation, economic success and public sector efficiency. Its absence can lead to grinding battles between the state and its citizens, and sometimes to an outright refusal to participate in government activities.²⁸

But trust is not solely about the relationship between state and citizen. Trust between citizens and the communities they live and work in is crucial too.

The challenge for our society is that we have witnessed a significant shift in the way that people choose to trust others – a move away from a deferential culture to one in which an

informed public is more likely to challenge and critique institutions and professions. As Will Hutton suggests, trust knits society together and makes it possible for people to get on with their everyday lives.²⁹

Why it really is good to talk

The second pillar of the politics of resilience is dialogue. Clay Shirky, author of *Here Comes Everybody*, believes that our ability to share, cooperate with one another and take collective action has increased remarkably.³⁰ And what makes this so fascinating for Shirky and others is that it is all being done outside the framework of traditional institutions and organisations.

Conversations are the life blood of communities, whether they take place in the local shop, pub, supermarket or street, at work, or on the phone or online. When we connect we trigger action, to a great or lesser extent. Sarah Brown, the chief executive of the Farm Crisis Network, has hundreds of conversations a week across different networks and locations in the UK, from which she is able to get a sense of whether the community she supports is in good health or not. Likewise, Jim Kennedy, a Catholic priest working in Islington, relies on conversations with members of his parish and those around him to understand their needs and where he can offer support.

2 A brittle society

We live in a brittle society, rather than a broken one. David Cameron has suggested, like Tony Blair did before coming to power, that there has been a perceived decline in personal and social responsibility. Although this may be true of small pockets of the UK, it is a highly subjective, value-based judgement. In contrast, the evidence of a brittle society is all around us. Our complex modern social systems, our reliance on them and our inability to protect them are a growing concern for us all.

Our just-in-time lifestyles provide us with a seemingly infinite number of goods and services. This is made possible by greater social and economic interdependencies and mass communication. Today, over 80 per cent of Britons live in urban areas and rely on dense networks of public and private sector organisations to provide them with food, water, electricity, communications and transport. For much of the time this lifestyle poses us few challenges, but it relies on a national infrastructure that is often outmoded and archaic, and increasingly lacks the capacity to support our complicated lives.

Food supply chains, sewerage systems, electricity grids and transport networks are part of the UK's critical national infrastructure and have become progressively more interconnected and reliant on information and communication technology. It is therefore vulnerable to the smallest disturbances in the system. The supermarket chain Tesco, for example, operates over 2,000 stores of varying sizes across the UK. The sheer size of Tesco's operations calls for high efficiency in its supply chain, but even if the international supply chain is working 99.9 per cent efficiently it still means they have six million service failures across their supply chain.³¹

In the past two decades many 'essential services' have been privatised. Today some 85 per cent of the critical national

infrastructure is owned by the private sector, adding another layer of complexity to the brittle system. Our everyday lives and the national infrastructure which they rely on operate in a fragile union, vulnerable to the smallest disturbances in the network.

Both are part of a larger environmental ecosystem, which is increasingly impoverished and can withstand very little change. The environment itself is becoming more brittle³² and we experience extreme weather conditions – such as the heat wave across Europe in 2003, the widespread flooding of the UK in 2007 and the snow storms over much of the country in 2009 – more often. This disrupts our everyday lives and causes system failures across the national infrastructure. Together, these three dimensions (lifestyles, infrastructure and weather) make up our brittle society.

The Starbucks kiosk, London Bridge

At the Tooley Street entrance to London Bridge Station stands a cluster of small kiosks selling food and coffee. The kiosk revolution across the transport network is a direct response to our need for convenience – anything that saves us time, energy or frustration. As the company that designs station kiosks states, ‘every person has to eat sometime and these days mostly on the move’. Convenience is great for us individually – it means the goods and services we require are on tap and become embedded in our everyday lives. Most people who buy a cup of coffee from the Starbucks kiosk at London Bridge station do so without thinking about how the coffee got there in the first place, but consider the architecture that has to be built and developed to ensure Starbucks can sell their caramel macchiatos to the masses.

Think of the kiosk as the final node in a vast network across which runs a complex supply chain. As businesses respond to our need for convenience so they stretch their supply chains further and further into our everyday lives – the most visible example being along our transport network. This affects the whole supply chain from user to the original source (in the case of coffee this could be South America or East Africa). In

doing so (and without building in appropriate measures) the links in the supply chain become more vulnerable to disruption (power failures), shocks (threats and hazards to transport networks) and stresses (market prices and scarcity of resources), and because the supply chains are interconnected faults can rapidly cascade across the system.

My simple cup of coffee rests on an awe-inspiringly complex system that is global in scale and made up of networks of suppliers, transportation routes, production facilities, distribution centres, warehouses, inventory management processes and cash flows. And yet the only visible presence of this system is a single node in the network – the kiosk at London Bridge.

We have created a consumerist society without thinking through its implications. Critics of consumerism describe it as *affluenza* – a painful, contagious, socially transmitted condition of overload, debt, anxiety and waste resulting from the dogged pursuit of more.³³ The British psychologist Oliver James explains the greater incidence of affluenza as the result of ‘selfish capitalism’, the market liberal political governance found in English-speaking nations compared with the less selfish capitalism pursued in mainland Europe. Although public attitudes data show that popular conceptions of the UK being a more isolationist, individualist society may be ill-founded, the perception at least (particularly in the mainstream media) of the UK being a *selfish society* remains:

*We live in a culture where the primacy of the self and its satisfactions is everything. We are bombarded with messages telling us that we should have what we want because we're worth it. As consumers, we are kings. We know that we have rights, that brands seek our favour; that as long as we can pay, we feel powerful. We like that sensation.*³⁴

As the example of the Starbucks coffee kiosk demonstrates, our goods and services rely on an infrastructure that is increasingly vulnerable both in capacity terms as well as the impact of shocks to it.

A brittle infrastructure

In 2008 the Institution of Civil Engineers (ICE) published a report claiming that there was an urgent need to build spare capacity into the national infrastructure. The chairman of ICE's Flooding Group, David Balmforth, said that in order to prevent blackouts, water shortages and transportation failures, there had to be enough spare capacity in the system to deal with disaster.³⁵

According to the Renewable Energy Foundation, Britain is running out of power and blackouts are almost inevitable within the next few years. In May 2008, for example, hundreds of thousands of people in Cheshire, Cleveland, Lincolnshire and London suffered blackouts when seven power stations were closed. Five months later National Grid issued an urgent call for power after a series of power station breakdowns.³⁶

The National Grid is known as an 'essential system' and along with other sectors like communications, emergency services, finance, food, government, health, transport and water it makes up the UK's critical national infrastructure. In the last decade a great deal of research and investment has gone into determining and addressing the vulnerabilities in the critical national infrastructure and the various risks to it. In response to growing concerns over the vulnerability of the critical national infrastructure, the government created the Centre for the Protection of National Infrastructure in 2007, merging the National Infrastructure Security Co-ordination Centre and the National Security Advice Centre. The private sector is also looking for ways to reduce the vulnerability of the critical national infrastructure. One such example is the Shared Capability Advisory Network (CNI Scan), an industry-led, cross-sector, collaborative programme that aims, at an operational and practitioners' level, to build on existing good practice and enhance security, risk and resilience planning.³⁷ A growing concern, however, is that much of the research is being conducted without reference to the brittle nature of society, which has become increasingly dependent on it.

A single failure in a network can cascade across systems causing all manner of systems to fail. The Buncefield explosion in Hertfordshire in 2005 affected the automated admission and discharge system in a Cambridge hospital. In March 2004 a fire

broke out in a BT cable tunnel in Manchester and put 130,000 land lines out of action, affecting internet services and disrupting several parts of the emergency services communications network, including Derbyshire and Cheshire police forces and the Greater Manchester ambulance service. Many bank cash machines in the area were closed since they make security checks over phone lines and local shops could not use credit and debit card machines for the same reason.³⁸

One of the greatest concerns highlighted by experts is the vulnerability of our energy infrastructure. As Alistair Darling MP, the then Secretary of State for Trade and Industry, stated in the introduction to the Government's 2007 Energy White Paper, 'While significant amounts of oil still remain in the North Sea, production has hit its peak and is now falling.' Therefore, in the current infrastructure the UK will depend increasingly on imports, in a world where supplies are concentrated in less stable regions, and on capacity issues. Fortunately many of the issues outlined above are already part of national, regional and local emergency planning and the primary focus of the government and industry, but institutions and organisations often have to learn lessons the hard way – not least because of human error.

Decision making in a brittle society

When the World Trade Center was attacked on 11 September 2001, New York's emergency services quickly swung into action, but they were severely hampered by the lack of an emergency operations centre (EOC). Following the 1993 terrorist attacks on the World Trade Center the then Mayor, Rudy Giuliani, had agreed to position the EOC at the heart of the World Trade Center complex, despite the fact that it was a known target and had previously been attacked. The EOC was meant to be the city's main command-and-control centre in the event of a terrorist attack or disaster. In the event it proved useless: As one newspaper blog put it:

It was on the 23rd floor [of No.7 World Trade Center], and effectively required working elevators to access. The huge, state-of-the-art, \$13m centre

*was evacuated at 9:30am on the morning of September 11, and reduced to rubble when 7 WTC collapsed late that afternoon. It took several hours for the mayor and his emergency management staff to set up a makeshift command centre further away from Ground Zero.*³⁹

A separate report issued by the Federal Emergency Management Agency in 2002 questioned whether diesel fuel tanks installed in the tower to supply backup generators – including one that powered the Giuliani administration’s emergency ‘bunker’ – might have been to blame. Although it may not have been sensible to keep huge fuel tanks inside the building, federal investigators suggested that the most likely cause of the building collapse was a major fire stoked by paper and furnishings.

Closer to home, severe storms and unprecedented rainfall in Carlisle in 2005 caused extensive flooding and storm damage; 1,925 homes and businesses flooded – to two metres – and 40,000 households were left without power. At 8am on 8 January the police declared the flooding a major incident and 30 minutes later the police station and civic centre (where council staff were coordinating the response) were flooded, necessitating a move to a secondary base at the castle.

Despite these lessons from the past, the Government and industry still make questionable decisions. According to one recent report, the lack of joined-up thinking across government and the private sector has created numerous areas of weakness in the critical infrastructure, including planning to develop a regional fire headquarters, consolidated from multiple locations into a single ‘super centre’ covering multiple areas. Yet the proposal was to build it on a flood plain, directly beside a railway line carrying radioactive and other hazardous materials, and on a flight path, because of the low cost of the property.⁴⁰

A brittle environment

For most of the time our just-in-time lifestyles and the national infrastructure that supports them carry on without major disruption. But both are part of a larger environmental

ecosystem, which is increasingly impoverished and can withstand very little force of change. A consequence of this is an environment of extremes. In the last few years the UK has been affected by major flooding, heat waves, tornadoes and snow storms. Each event has demonstrated how the environment shapes and influences our lives, and social interdependencies which are tightly coupled to the national infrastructure.

The snow storms in early 2009 are a good case in point. Individual and community expectations of what local councils would and would not do during the snow storms were severely tested. For example, as the snow become heavier local councils prioritised main roads, leaving many households stranded. Six million people failed to make it to work and thousands of schools were closed. According to media reporting individuals and communities expected their roads to be gritted but were unaware that councils had taken the decision only to provide grit bins when people requested them. Meanwhile the snow paralysed London's transport system. All bus services were cancelled and only one out of 11 Underground services were running.

The 2003 European heat wave led to health crises in several countries and combined with drought to create a crop shortfall in southern Europe. Approximately 35,000 people died as a result of the heat wave, the elderly the most affected. The heat wave caused several power cuts – most notably in France where demand for electricity soared as the population turned up air conditioning and refrigerators – but nuclear power stations, which generate around 75 per cent of France's electricity, operated at a much reduced capacity. In order to conserve energy for the nation, France (Europe's main electricity exporter) cut its power exports by more than half.⁴¹

Many of the victims were old people who had been left in sweltering apartments in the cities while their families were on holiday. Others tended to come from economically deprived groups. A number of European-commissioned studies showed that a 'loss of autonomy and social isolation' were key factors leading to mortality.⁴² According to David Steven governments did not have adequate surveillance systems in place, while health services were short staffed during the summer holidays. But lack

of community support was most to blame. Many lives would have been saved if people had encouraged their neighbours to drink more water.⁴³

In 2007 Britain suffered some of the worst flooding in a century; 13 people lost their lives, approximately 48,000 households and nearly 7,300 businesses were flooded, and billions of pounds worth of damage was caused. In Yorkshire and Humberside, the Fire and Rescue Service launched the ‘biggest rescue effort in peacetime Britain’. Across Gloucestershire, 350,000 people were left without a mains water supply – this was the most significant loss of essential services since the Second World War. Other critical infrastructure was damaged and essential services, including power supplies, transport links and telecommunications, were disrupted.⁴⁴

Individually and as a society we have a choice. If we want to continue to lead complicated lives based on a vulnerable national infrastructure in an environment of extremes then we must accept there will be major shocks, disruptions and stresses to the system. As the credit crunch and global recession has proved, few national and global finance systems anticipated and were equipped to respond to the major shock of the sub-prime fallout in the US. The connectedness of the global finance system meant that the fallout from the shock quickly cascaded across the world. The lack of resilience in the system has resulted in individuals losing their jobs, businesses being liquidated, and banking systems snapping under the weight of toxic debts. And although this is not an argument for disconnecting from the global system, it is an argument for ensuring that our complex social system, our way of life, is more resilient.

For individuals and communities this means developing and building resilience through dialogue and activity. For government, its agencies and the emergency services this means tapping into the country’s human resources and letting individuals and communities share some of the burden, so that in the event of a major shock, disruption or stress they can focus on the most vulnerable individuals. Much of the time it will require institutions and organisations to join forces with individuals and communities.

3 Lost in translation

Jim Carrey: What are the chances of a guy like you and a girl like me? One in a thousand?

Lauren Holly: Um, more like one in a million.

Jim Carrey: So you're saying there's a chance!

Dumb and Dumber (1994)

Thinking about risk

The most destructive single disasters are usually the least surprising. Flooding, for instance, occurs periodically in the UK, particularly along the coast or on a flood plain. Disasters happen frequently.

This chapter is not about risk communication *per se*.⁴⁵ It is about how individuals and communities translate information on risk communicated to them by institutions and organisations. As Claire Marris suggests, the failure of emergency planners to motivate communities is the failure to accommodate the fact that it is not information that determines action but how people interpret it – which they do in the context of their experiences and beliefs, and expectations that develop in and are sustained by the community and societal contexts in which they live.⁴⁶

The old model of government communication needs to change, not least because government no longer controls information and messages once they are released into the public sphere. Rather than focus on the change itself and the implications for government departments, this chapter focuses on the effect this information has on members of the public. Perhaps, unsurprisingly, government, its experts and members of the public have completely different approaches to thinking about risk. Government departments and agencies take a technical

approach to risk based on a comprehensive assessment process using scientific data and the professional judgements of experts to analyse the risks to the UK. In contrast, members of the public think about risk in emotional terms and rarely think about ‘abnormal events’ but more immediate everyday concerns.

It is not surprising therefore that communicating risk is seen as such a difficult and complex issue to get right. On the one hand, professional risk experts devote time and energy to thinking about the impact of threats and hazards.⁴⁷ On the other, members of the public often go about their everyday lives in ignorance of the risks they face. These fundamentally different approaches to risk matter a lot – to understand why, we need to know what goes on in our heads.

Humans rely on two different systems when making a decision (Figure 2). In his book *Risk*, the Canadian journalist Dan Gardener describes how these two systems operate:

*System 1 is intuitive. It works without our conscious awareness and it is as fast as lightning. Feeling is the source of snap judgements that we experience as a hunch or as emotions like unease or worry. System 2 works more slowly, examining the evidence and making calculations. When System 2 makes a decision it’s easy to put into words and explain.*⁴⁸

Figure 2 **Two cognitive systems**

System 1	System 2
Automatic	Reflective
Uncontrollable	Controlled
Effortless	Effortful
Associative	Deductive
Fast	Slow
Unconscious	Self-aware
Skilled	Rule following

Source: Thaler and Sunstein, *Nudge*⁴⁹

In their seminal research in the mid-1970s, Amos Tversky and Daniel Kahneman explored the effects of heuristics (rules of thumb) and biases (tendencies) in human judgement. Their

research changed the way psychologists and – in the few years it took them to become interested in behavioral psychology – economists thought about thinking.⁵⁰ For many psychologists what was fascinating was the interplay between system 1 (our intuitive response) and system 2 (conscious thought). People rely on heuristics or rules of thumb to make choices – the more uncertain a situation is the more likely people will take short cuts, and although short cuts are useful in many situations, they lead to predictable errors. Tversky and Kahneman identified three heuristics: anchoring, the similarity heuristic (Gardener calls this the ‘rule of typical things’) and the availability heuristic.

Anchoring

An *Independent on Sunday* investigation in 2006 revealed that 50,000 paedophiles are online at any one time. But Dan Gardener was suspicious of the number. The more he read about the number of paedophiles on the net, the more it became obvious to him the number was ‘junk’. Having seen the number quoted in the *Ottawa Citizen* he rang the Canadian Association of Police Boards who said they had got the number from the British police. Searching around, he found that most sources came from the Federal Bureau of Investigation (FBI). So he rang the FBI.

The FBI spokesperson said they had no idea where the number had come from, because it was impossible to figure out. Finally Gardener struck gold when he spoke to the presenter of the television programme *Dateline*, which had been referred to as the source of the number by the US Attorney General in early 2006. *Dateline*’s presenter had asked an expert whether the number 50,000 was accurate. The expert replied that he had heard it but that it depended on how a ‘predator’ was defined. *Dateline* used the number and the story made news headlines. The expert had spoken to an FBI agent, who when interviewed said he could not confirm it but it *felt* like a reasonable figure. Coincidentally the number 50,000 has been used a lot for previous panics, as Dan Gardener calls them, including the number of children kidnapped and the number of murders

committed by satanic cults in the US. Coincidentally, in 1998 it cost £50,000 to keep a paedophile safe in a cell, according to the *Independent*.⁵¹

How did this number come about? When people are uncertain about a number they guess using whatever number comes to mind first. This is the anchor, the number you know. What happens next is that we adjust it in the direction we think is appropriate given the question we have been asked – the bias occurs because the adjustments are typically insufficient. Anchors can be used to influence people's belief and behaviour – for good or for bad. A charity that wants you to donate more money will give you options that lead you to give more. For example, you can donate £15, £30, £50, £100 or £1,000 to WaterAid. These are not random numbers, they have been chosen as they will influence how much you decide to give the charity and you will give more than if the choices were £5, £10, £30, £50, £100. Anchors serve as nudges, influencing and manipulating our beliefs and behaviour.

The rule of typical things

In one of their frequent experiments in the mid-1980s, Tversky and Kahneman divided 245 undergraduates at the University of British Columbia in half and asked one group to estimate the probability of there being 'a massive flood somewhere in North America in 1983, in which more than 1,000 people drown'. The second group was asked to estimate the probability of there being 'an earthquake in California sometime in 1983 causing a flood in which more than 1,000 people drown'.⁵² Logically, the second scenario is less likely than the first (on the basis that the probability of there being a flood *anywhere* in North America is higher than of there being a flood in only one US state). And yet the undergraduates rated the second scenario a third more likely than the first. Why? Because the rule of typical things or the similarity heuristic favours outcomes that make good stories. As Thaler and Sunstein argue, the use of the similarity heuristic can cause serious misperceptions of patterns in everyday life. When events are determined by chance,

such as tossing a coin, people expect the resulting number of heads and tails to be representative of what they think of as random.⁵³

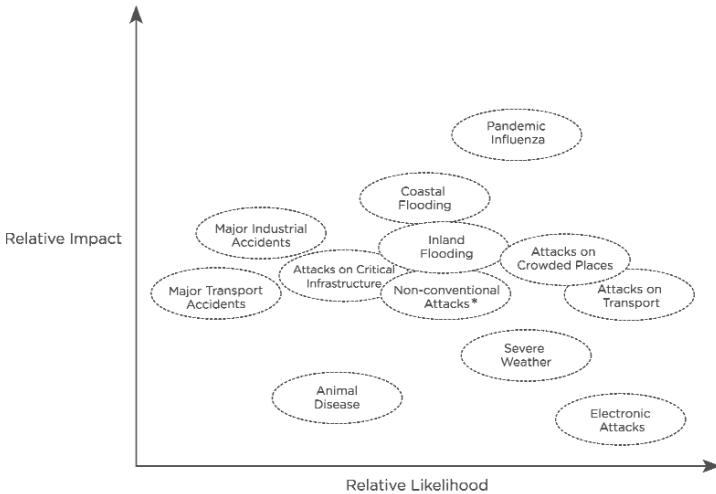
The problem lies in the fact that most people do not understand randomness very well. We often try and detect patterns that we think mean something when in reality they do not. Take the example of flooding. Most floods are, in effect, random events. When experts say that this year's flood is the 'flood of the century' – one so big it is expected to happen once every 100 years – system 1 takes this to mean that another flood of similar magnitude will not happen for decades. The fact that a flood of the century can happen three years in a row just does not make intuitive sense. System 2 can understand that, with a little effort, but not system 1.⁵⁴

The availability heuristic

The availability heuristic is arguably the most powerful of the three heuristics when thinking about risk. People assess the likelihood of risks by asking how readily examples come to mind. As Thaler and Sunstein suggest, a risk that is familiar, like that associated with terrorism in the aftermath of 9/11, will be seen as more serious than a risk that is less familiar, like that associated with sunbathing or hotter summers.⁵⁵ The availability heuristic is one reason why thousands of Americans decided to drive instead of flying after 9/11. The collapse of the two towers was still a vivid memory and driving in contrast must have felt much safer. But system 2 knows this is not the case. We know that tens of thousands of people are killed on the road each year. Paul Slovic, a risk expert, calls this probability blindness.

In the years following 9/11, Gerd Gigerenzer, a psychologist at the Max Planck Institute in Berlin, patiently gathered data on travel and fatalities. In 2006 he published a paper comparing the statistics of the number of people flying and the number driving in the US five years before the 9/11 attacks and five years after. It turned out that the shift from planes to cars in America lasted one year. Then traffic patterns went back to normal. Gigerenzer also found out that fatalities on Americans roads

Figure 3 UK government risk matrix, 2008



Source: National Risk Register, Cabinet Office

soared after 9/11 and settled back to normal levels in September 2002. Gigerenzer was able to calculate the number of Americans killed in car crashes in one year as a result: 1,595.⁵⁶

This approach to risk is in stark contrast to the technical and ‘measured’ approach taken by governments. The British Government assesses risk on the basis of probability and impact (also known as consequence). The probability of the event, its impact, is analysed, measured and considered before coming to an agreement about the degree of risk involved. This leaves room for debate and argument as each risk is subjected to claim and counter claim based on evidence. Finally they are mapped onto a risk matrix (Figure 3).

The UK Government’s *National Risk Register* states:

Putting a lot of effort into preparing for risks that are either very unlikely to happen, or are likely to cause relatively minor damage, is unlikely to

*be the best use of the time available to prepare. Priority is instead given to high risks: risks that are both relatively likely and could have a serious impact.*⁵⁷

Ultimately this process of risk management depends on the cost. If it costs little to protect against a low-probability–high-consequence event, it is worth paying up. But if it costs a lot, we may be better off spending the money on other priorities – reducing other risks, for example, and taking our chances. People simply do not think about risk in this way. As we will see in the next section, it is more accurate to describe people’s actions as predictably irrational.

This human behaviour has been described as ‘bounded rationality’, a term first attributed to Herbert Simon, an American psychologist. In *Models of Man*, Simon points out that most people are only partly rational, and are irrational in the remaining part of their actions. This does not mean people are liable to panic⁵⁸ in the event of an emergency. Rather, those people may revert to irrational behaviour, especially in response to a specific risk. This is important for institutions and professionals to understand, not so much during an emergency or crisis (when most people will rely on their own skills and support from the emergency services and their community), but for how they communicate with individuals in the mitigation and preparedness phases.

Predictably irrational

The idea of bounded rationality is now widely accepted by academics and its insights are fuelling research throughout the social sciences. A new field of study, ‘behavioural economics’, is devoted to bringing the insights of psychology to economics. In 2008 two professors at the University of Chicago, Richard Thaler and Cass Sunstein, published a book called *Nudge*. The book went on to become a bestseller in the US and UK. At the heart of the book Thaler and Sunstein claim that we have been living under a false assumption. This assumption, which they argue no one believes on reflection, ‘is that almost all people, almost all of the time, make choices that are in their best interest

or at the very least are better than the choice that would be made by someone else'.⁵⁹

The point Thaler and Sunstein make is very relevant to risk communication and how people understand risk. The authors use the example of a chess novice playing against an experienced player. Predictably, the novice loses precisely because he has made inferior choices – choices that could easily be improved with some hints or nudges. So it seems reasonable to Thaler and Sunstein that people make good choices in contexts in which they have experience, good information and prompt feedback. They do less well in contexts in which they are inexperienced and poorly informed, and in which feedback is slow or infrequent like terrorist attacks, natural disasters and major accidents.⁶⁰ In response to this behaviour, governments can design *choice architectures* to help improve the security and safety of citizens. A 'choice architect' is anyone who organises 'the context in which people make choices'.

Thinking about choice architecture is an incredibly useful way of framing how central and local government, emergency planning officers and the emergency services can influence an individual or community's behaviour, especially on issues like risk. And before you think this is a plea for bigger government – pause – this is a plea for better governance. Take the following as an example.

Emergency planning officers around the country regularly come up against an age-old problem: how do you communicate risks to members of the public which will influence their actions and make them more aware and prepared for a variety of risks they may face? There are multiple ways of doing this: directly, through leafleting, country fairs, forums, seminars and local parish meetings; and indirectly, through national and local TV and radio, and as part of news and information from elsewhere.

However, information that does not stick is soon forgotten. Remember the *Preparing for Emergencies* booklet published in 2004? Probably not. The booklet provided general advice about what to do in an emergency, what to do in a specific emergency, basic first aid and how the UK was coping with the threat of terrorism. The Emergency Planning Society said that the booklet

‘provided valuable and common sense advice for the public that could easily be adapted for use in many domestic situations’. But most people threw it in the bin – after all they were never going to be affected by the risks outlined in the booklet, were they?

The booklet was designed to help people in an emergency and provide guidance (like having a bag ready with a list of useful phone numbers, keys, medication, a radio, a torch, candles and matches, and credit cards). One reason that the booklet failed to make an impression on individuals, families and communities was the way it was presented. Risk communication cannot be detached from our everyday lives. It has to be hotwired into our decision-making processes and behaviours. This is one of the primary reasons why risk information rarely sticks. Without a connection between information on preparedness and our everyday experience all the public hears is ‘alarming noise’, further proof perhaps of the lack of trust between the state and citizens.

Many local authorities have bought thousands of Z cards, credit-card-sized wallets to communicate information on risks to individuals and communities. The Z cards can be opened up to approximately A4 size and include the so-called emergency caterpillar logo for go in, stay in, tune in; information on risks, plans and important kit. Although these play an important role in providing communities with information on risks, councils can spend up to £15,000 to publish such cards and associated information. Is there another less costly approach which can influence public behaviour?

As Thaler and Sunstein suggest, people make good choices in contexts in which they ‘have experience, good information, and prompt feedback’. Most of the time risk communication occurs outside our normal everyday experiences. Consider the following hypothetical example. You are buying your nightly or weekly supplies at the local shop or supermarket and when you walk down the aisle marked household goods you see a poster advertising half-price batteries. You may be tempted to buy them. But what if underneath the sign there was a note asking you when you had last checked the batteries in your torch or smoke alarm? Would it make you think? Probably – and

together with the half-price deal on batteries you might well be tempted to take the offer.

Residents of Queensland in Australia have lived through a decade of drought. In 2008 the reservoirs serving Australia's most populous cities dropped to just above 15 per cent their normal size. The country's water authority needed to change its citizens' behaviour. Water officials set a target of reducing daily per person consumption from 80 gallons to 37. They met the target using lots and lots of nudges:

Officials developed a relatively cheap social marketing campaign, with the aim of getting people to think about individual water use. Ads promoted simple things, such as taking four-minute showers and turning off the tap while brushing your teeth. Crucially, the program set targets, and for the first time put gallon figures on the amount of water used in car washing, toilet flushing and other activities. Just two weeks into Target 140, average daily per-person use dropped from 80 to 32 gallons. The water saved was equivalent to bringing a desalination plant online – overnight.

The typical household saved about 190,000 gallons. Fifteen months into the program, we got unexpected rains that took the reservoirs to the required 40 per cent level, and the target was adjusted up to 45 gallons a person a day, where it remains. But longer-term behavioural change seems to have occurred, and daily use has stabilized at 38 gallons a person.⁶¹

Finally, consider the case of flood preparation in Norfolk, England, where recently North Norfolk District Council has taken to charging people for sandbags. Although the Council still issues sandbags (six bags per doorway) free of charge to households as and when required, it has decided to charge £2.50 per bag if more are needed. Invariably six bags are not enough so often people order more sandbags as a precautionary measure in order that they are instantly available when required, but sandbags have a limited life and can often disintegrate at the critical time.

The nudge making people aware there is a charge for sandbags works by changing people's behaviour in two ways: first, to ensure they are focusing on internal flooding as opposed to sandbagging external buildings and gardens; and second to

make people think about longer-term mitigation rather than short-term preparedness. In summary, nudges allow central government, local authorities, emergency planning officers and the emergency services to influence public behaviour – a fundamentally important task in making society more resilient. Nudges also help readdress the imbalance between management by institution and public expectation. By shifting some of the responsibility of resilience planning and management to communities and individuals, institutions can focus on the most vulnerable people.

4 The new protective state⁶²

The three main political parties are resolute: ‘If Britain is to be prepared for emergencies we need to re-establish some form of civil defence organisation’;⁶³ ‘A new approach to security also means improved local resilience against emergencies, building and strengthening local capacity... not the old cold war idea of civil defence but a new form of civil protection’;⁶⁴ and ‘An incoming Conservative government should establish a dedicated force with a permanent command headquarters to provide assistance as and when requested to the civil authorities in the event of a major terrorist incident or other national emergency’.⁶⁵

The arguments put forward by each political party are plausible and seductive, but dangerous. Their argument is dangerous because the public’s expectation of a new body with responsibility for civil protection could never realistically be matched by a commitment in financial and human resources from government. It is dangerous because doing so would eventually mean wresting power and responsibility *away* from citizens at the very moment we need individuals to become *more* responsible over their own lives and in society more generally. And it is dangerous because the idea of a civil protection force is really a product of political posturing between parties rather than based on strong evidence of the strengths and weaknesses of existing formal and informal organisations.

That said, at first glance, the concept is attractive. As Chapter 2 suggested, we live in a brittle society where threats and natural hazards are more frequent and intense than a decade ago. Given this, the absence of an identifiable body which has the capacity to respond to the full gamut of risks, together with evidence that local authorities and the emergency services have been overwhelmed in the past, has led advocates of a new civil defence force to feel their arguments are justified. However, it is also

likely that the same advocates are unaware of the transformation in emergency planning since the end of the Cold War. The view from Westminster, seen through the traditional concept of civil defence, must be worrying – a part-time force, few obvious processes and structures in place, and no volunteers. But consider for a moment how many people work for government departments, local authorities and the emergency services. And consider how many people are involved in the formal and informal voluntary sectors. The number runs into the millions. Networks of volunteers and the infrastructure that support them exist – but they remain invisible to many of us. Millions of volunteers work at the very local level, with individuals, in neighbourhoods and in communities. While voluntary organisations do place limited demands on members and volunteers, the pressure to carry out their role comes from their sense of duty and from the individuals and communities they are supporting. A volunteer's credibility is built on the support he or she provides, not the organisation to which they belong.

In contrast, a formal civil defence organisation or network will, over time, become part of a complex set of institutional structures, the consequences of which will be twofold. In time it is likely such an organisation will become less responsive to the needs of the community and more focused on meeting the requirements of national government, of Whitehall and Westminster. It will mean, as Jake Chapman the systems theorist argues, those individuals and organisations will begin to look the wrong way – towards the state rather than the public they are serving.⁶⁶

This argument, based on evidence of what has already happened within the police, is made by those who feel that the focus is too much on targets and not enough on the needs of local communities. Moreover, the instinct to create an overarching national body to support resilient communities seems paradoxical, especially at a time when there is a drive to devolve power away from the centre and down to the grass roots. Better then for government to invest in resources that help it navigate its way around local communities and negotiate with stakeholders.

Twenty-first-century emergency planning

Politicians and the mainstream media have a romantic idea of Britain's civil defence during the Cold War. It is fondly referred to by a generation who played a role in its archaic structures. These same people also use civil defence as a tangible example of how safe and secure society was back then, when life was relatively simple, carefree and ordered. But the picture of a well-organised, well-defended and resilient country is, on closer inspection, pure myth.

The idea that Britain had 'never had it so good', to coin Harold Macmillan's phrase when he spoke at Bedford football ground in July 1957, is in hindsight faintly embarrassing. Britain, according to the historian Peter Hennessy, was ill-prepared to counter any threat. In the event of an attack Britain's defences would have amounted to nothing. The self-perpetuating myth that there were legions of volunteers ready to act owes more to government propaganda at the time than society's willingness, after the Second World War, to serve.

One good example of this is Essex's Civil Defence Corps. There are plans from 1965 that highlight the extent of the manpower and investment in planning that was needed. Essex was divided into 55 sectors, 264 warden posts and 1,024 patrol posts, all of which required 3,135 volunteers.⁶⁷ On paper the plan would have required 2 per cent of the British population to be mobilised in the event of an attack. But despite their best efforts, the planners, advertising campaigns and members of the Civil Defence Corps failed to generate significant public support, particularly in the 1960s. Even in the late 1950s, only a decade after the Second World War, 'the Civil Defence Official Committee was expressing concern about apathy and shortage of equipment for civil defence'.⁶⁸

As the Cold War began to thaw, so bit by bit the costly and bureaucratic civil defence structures were dismantled or refocused. In 1986 the Civil Protection in Peacetime Act was brought in to enable local authorities to use their civil defence resources in connection with emergencies and disasters. The Civil Defence College at Easingwold in Yorkshire, which had concentrated its main effort on training senior civil servants in civil defence processes, started to run courses on civil

emergencies. In 1989 it was renamed the Emergency Planning College to reflect the change in priorities. By the early 1990s a complete re-evaluation was under way. Arrangements between central government and local authorities were downgraded or abandoned and following pressure from local authorities in 1992 further changes were announced.

Following the floods of 2000 across areas as far apart as Kent, Wales and Yorkshire, the 2001 foot and mouth crisis, and the Fire Service strike in 2002, there has been a fundamental shift in the purpose and organisation of civil protection in the UK. According to David Alexander, civil protection developed as governments gradually realised that it was not efficient or effective to manage civil emergencies by military means. Although military forces might have the advantage of greater autonomy in the field, dedicated equipment and unambiguous command structures, they tend to be rigid and authoritarian. Modern emergencies are complex and require the utmost flexibility in their management.⁶⁹

In a memorandum to the inquiry into the foot and mouth disease the government stated that comprehensive contingency plans had been in place. But the chair of the inquiry, Dr Iain Anderson, disagreed, suggesting that the contingency plans were limited in scope, out of date in some respects and not integrated into a national programme of rehearsal and testing. Furthermore, during the inquiry local government representatives and other stakeholders claimed they were not aware of these plans. One stakeholder referred to them as the 'best kept national secret'.⁷⁰ Since 2001 the old civil defence structures have been replaced by 'a model better suited to a modern network society [able to] address a wide range of security risks, from terrorism through accidents to natural disasters. It involves a broad range of organisations, in the public sector and beyond.'⁷¹

The Civil Contingencies Act 2004 is separated into two substantive parts: local arrangements for civil protection and emergency powers. Part 1 establishes a set of roles and responsibilities for those involved in emergency preparation and response at the local level. The act divides local responders into two categories and imposes a different set of 'duties' on each.

Category 1 responders include emergency services, local authorities and NHS bodies. Category 2 organisations like the Health and Safety Executive, transport and utility companies are ‘co-operating bodies’, and although they are less likely to be involved in the planning work they play a key role in incidents that affect their sector.

Emergency planning has evolved since the end of the Cold War. For one thing there is no such thing as a typical emergency planning officer (EPO; during the Cold War over 90 per cent were ex-military or previously served in the emergency services). People applying to become EPOs today come from a diverse range of backgrounds – some from the more traditional routes, but for many this may be their first or second job. As part of their professionalisation EPOs attend regular training courses throughout their employment. Some begin their new role having taken an undergraduate course in emergency planning and management, while those who are already in the system may top up their skills and learning with a postgraduate course in civil protection at a number of different universities, including those of Coventry, Cranfield, Hertfordshire, Leeds, Portsmouth and Surrey.

As emergency planning has evolved to include new issues and areas of responsibility, so too has the role. For a start, EPOs are no longer seen as a separate body from the rest of the council as was the case during the Cold War. Very few EPOs are now based in a council’s bunker – a throwback to the Cold War days. They are more likely to be based in open plan offices, together with other council teams. An increasingly important role for EPOs is their engagement with local communities. This role sets the progressive EPOs apart from the rest. Any EPO will tell you that communities play a central role in emergency planning, not least because they may be affected by the risk, but the way they go about engaging with communities is mixed. Progressive EPOs actively seek out communities that are able to play a role in their own resilience. They are comfortable with *letting go* – giving communities the tools and support they need for planning and preparing for risks.

The voluntary sector

The government, local authorities and emergency services are not the only institutions and organisations that play an important role in communities. The voluntary sector – professionals and volunteers, many from the local communities themselves – is playing an increasingly active role in the lives of individuals and community groups. The UK's voluntary sector⁷² is a vast, complex network of local, regional and national organisations with hundreds of thousands of members of staff and millions of volunteers.⁷³

According to the Office of the Third Sector half of all people volunteer, formally or informally, at least once a month; the number of people regularly volunteering in England and Wales rose from 18.4 million in 2001 to 20.4 million in 2005; and formal volunteering⁷⁴ in Great Britain is worth about £38 billion per year. The voluntary sector plays four distinct roles in support of the government and statutory agencies in preparation for an emergency. They include: communications, search and rescue, social and psychological aftercare, and welfare and medical support. Many of the voluntary sector organisations are well known.

Several voluntary sector organisations can trace their creation to a period of instability or a specific emergency. The North Sea flood of 1953 remains one of the worst natural disasters in the UK. Approximately 300 people were killed in Lincolnshire, Norfolk, Suffolk and Essex. Less well known is the fact that the severe flooding damaged key communication cables along the east coast of England, which connected the Civil Defence Corps and emergency services. With the lines crippled, desperate police authorities sought help from a few local amateur radio operators who directed and coordinated the rescue teams. The success of the amateur radio operators led to the creation of RAYNET (the Radio Amateurs' Emergency Network). Today the organisation has 2,000 members across the UK. Similarly, Citizens Advice evolved from its emergency war-time information service to a charity made up of 20,000 volunteers.

A numbers game

As politicians and the mainstream media fret that Britain is underprepared in the event of an emergency, and that there is no force to take action, it is worth pausing to reflect on how many people in the voluntary sector could respond if there was an emergency, and the roles they would play. For example, the Royal National Lifeboat Institution has over 5,000 volunteers providing a 24-hour lifesaving service around the UK and Republic of Ireland. The Salvation Army is made up of over 70,000 officers, members and volunteers, while the 5,500 volunteers of Cruse Bereavement Care work to promote the wellbeing of bereaved people. Finally the 16,534 Samaritans operate a 24-hour-a-day service to provide confidential emotional support for people who are experiencing feelings of distress or despair.

Lastly, three organisations are worth highlighting because of their volunteer base and work:

- St John Ambulance, a charity with 45,000 volunteers, which provides first aid and health and safety training
- The Women's Royal Voluntary Service, which has around 120,000 members in the UK – 15 per cent of whom are men
- The British Red Cross, which has close to 35,000 employees and volunteers across the UK

The British Red Cross divides the UK into four regions allowing it regional and local flexibility and to meet its national mission. It is also part of a global organisation and committed to providing mutual aid between countries and societies. For example, in the floods of 2007 the British Red Cross had support from Red Cross societies in Germany, which provided water purification equipment. The Red Cross (like most charities) plays its most valuable role at the local level. In Alcester, a small town near Stratford, the Red Cross is developing a personal resilience programme, run by a highly active group of first aid volunteers. They have been working with the town council on a programme to bring members of the community together to talk about what community resilience is and what tools and ideas they can develop to make themselves more resilient.⁷⁵

Statutory agencies are aware of the kinds of services the voluntary sector can offer and often involve them in local planning arrangements. In addition, the statutory agencies may use voluntary organisations to backfill some services that would be undermined by the diversion of resources to deal with the direct consequences of a major incident.

All three parties believe in recreating some form of organisation or network to respond to the risks facing the UK. But is this necessary given the evidence above? Over 600,000 people are volunteers of the organisations listed above – more than the emergency services combined and six times the present size of the British Army. If you add this number to all the other voluntary organisations and informal volunteering groups then literally millions of citizens play an active role in society every day.

In response to Gordon Brown's national security statement outlining a new civil protection network, Philip Johnston, the *Daily Telegraph's* assistant editor and leader writer, wrote on his blog, 'the days when hundreds of thousands of ordinary people volunteered to help out the country in time of crisis have almost certainly gone for good'.⁷⁶ This clearly is not true – in fact it is a fairly ridiculous thing to say – but sadly it is the perception of the mainstream media. As James Lee Witt, former director of the US Federal Emergency Management Agency, said, 'Give the people the opportunity to be part of something that will make a difference, and they will step up.' The fact that we rarely think about the millions of volunteers and worse still do not give them the support they need does not mean that they do not exist. Many of society's volunteers prefer to be invisible to you and me. After all they are not doing it for recognition.

5 Every emergency is local

Knowledge is passed down generations, it's not learned by somebody coming from nowhere into an office and reading a textbook.⁷⁷

Paul stood in the middle of the village and looked up anxiously at the full moon. Normally the moon would not concern him but the tide looked exceptionally high and, to make matters worse, a northwesterly wind was blowing. He rang his friend Tony. Together they discussed the weather and the potential for flooding. Instinct told them something was going to happen – it invariably did when a high tide and a northwesterly ‘came together’. Tony said he was expecting a call from the Environment Agency. One of the main stories on the local news that night was the potential for severe flooding in the Great Yarmouth area and although the village of Walcott and the north Norfolk coast had not been mentioned, the Environment Agency had issued severe flood warnings covering North Yorkshire, Lincolnshire, Norfolk, Suffolk, Essex and the north Kent coast.

Paul and Tony are members of Walcott’s Emergency Volunteer Association – so act as the village’s flood wardens. The 18 volunteers are called out fairly often for severe and minor flooding in the village. Paul has worked as a fisherman and a coxswain for the lifeboat crew, and has lived in Walcott all his life. His dad started Tide Watch in the mid-1960s when Walcott was severely flooded. This chapter describes community resilience in action and what can be achieved outside the traditional structures in place.

Normally when there was a chance of flooding Tony (who liaises with the authorities, including the Environment Agency) would receive a phone call from the Environment Agency either saying the village was on flood watch (flooding of low lying land and roads is expected: be aware, be prepared, watch out!) or be

given a flood warning (flooding of homes and businesses is expected: act now!). But Tony had not received any information. The two wardens could see the weather turning bad – the wind was beginning to pick up. At midnight they decided to alert the rest of the volunteers. Within 15 minutes the team was out in the street wearing their fluorescent jackets (with ID badges), chest waders and torches (recently they have bought themselves life jackets too).

Water was beginning to appear on the road. Splitting up, the wardens walked to their designated areas (each warden is given a section of the village) and began to knock loudly on people's doors. Each house in Walcott has a laminated sheet with photographs of the flood wardens, contact numbers and other useful information. These allow residents to identify the wardens and cross check them on their own sheet. Each warden carried the same simple message: 'There's water on the road. We're not sure how bad it's going to get but we advise you to get ready' (this normally means moving valuable things upstairs and putting furniture up on tables). The message was repeated across the village.

By 2am the weather had turned very nasty and the wardens started evacuating people. Paul rang his local pub – the Lighthouse Inn – and Steve the landlord quickly opened the pub and put the kettle on. Slowly but surely the wardens moved through the village knocking loudly on people's doors. The weather was getting worse and a howling wind made it more difficult to wake local residents. Paul and Tony called North Walsham Police Station and asked for the siren to be sounded – and said they were evacuating the village. The reply from Silver Command based in North Walsham (about five miles up the road) was curt: the flood siren would not be sounded as the police did not want to cause undue panic among village residents.

The decision not to use the siren was based on the evidence Silver Command had at the time. For a start Walcott was not meant to be affected by flood waters and most of the emergency services and the Environment Agency were focusing their attention on storm surge that was making its way towards Great

Yarmouth. The siren has been sounded many times in the past – on numerous occasions for less flood water – but a combination of factors meant that this time the decision was made not to use it (each siren can be triggered independently of each other, as a cluster or as part of the whole network).

The failure to sound the siren meant that property of residents of Walcott was damaged before they could prepare for the ensuing flood, and evacuating some areas was made more difficult because, although flood wardens had been out for a few hours by then, not everyone had heard them knocking on the doors. For the flood wardens the failure to sound the siren that night was incredibly frustrating. A siren would have allowed them to alert the whole of the village at once. As it was they spent ages waking residents in the village and at the Walcott Caravan Park. It was 5am before the wardens knocked on the Bruces' bungalow.

Mr Bruce is confined to a wheelchair as he copes with the advanced stages of multiple sclerosis. The flooding caused widespread damage to the specially adapted bungalow and knocked out the electricity. In an interview with Norwich Evening News one year later, Mr Bruce praised the flood wardens for their initiative and help but said he felt let down by the lack of sirens – he thought that if the sirens had been sounded he and his wife could have been prepared and probably saved most of their personal belongings.

Three things are striking about this story. First was the ability and capacity of Walcott's flood wardens to act that night. Second is the lack of trust between the volunteers and the police. And third is the importance of dialogue in emergency planning. Walcott's flood wardens were so frustrated by their treatment that they made an executive decision to become independent of the local council's emergency planning process. They held a charity event to raise money to buy their own boat and bought eight different sets of insurance to cover them in the event of another emergency. They created their own ID tags and distributed information about the flood warden scheme to every household. Walcott is, in all respects, a primary example of a resilient community.

As this story demonstrates, lack of trust can be very damaging. Society's social cohesion depends to some extent on the level of confidence its citizens have in its democratic institutions.⁷⁸ The lack of a warning from the Environment Agency, the failure to sound the alarm by Silver Command and the general reaction by the local institutions to Walcott's flood wardens' declaration of independence all point to a worrying lack of trust in the capabilities of volunteer groups.

Individually these institutions have made huge progress in responding to emergencies in recent years. The Environment Agency has learnt many lessons from floods; the emergency services continually update their best practice and local authorities are finding new ways to engage with their citizens. But all too frequently and particularly in times of emergency we fall back into our old ways of thinking, believing that it is the role of the emergency services and relevant agencies to get the job done – this goes for citizens as much as for professional bodies. And yet the remarkable story of Walcott's flood wardens is that they, like thousands of volunteers and voluntary organisations around the country, are there to help, complementing the work of the emergency services. As one resident said after the floods – that night they were the fourth emergency service.

6 Networks of resilience

A resilient nation responds to terrorism, natural disasters and major accidents, but also copes with everyday emergencies. Everyday resilience is created and sustained through conversations and relationships that tie individuals and communities together. It is a latent force, in the sense that one does not necessarily recognise its properties until an emergency occurs. The lack of everyday resilience is easier to identify, although this may often be the result of subjectivity and perception.

This chapter explores the role of three networks: the Farm Crisis Network, which supports everyday resilience; faith communities, which have an important role to play in emergencies; and the South West ACRE Network of rural community councils, which leverages governance networks to the benefit of local communities.

The Farm Crisis Network

The Farm Crisis Network (FCN) was set up in the 1990s by a farmer called Christopher Jones, at a time when farming was encountering greater and more frequent difficulties, from acute shocks in global trade to weather-related events. In particular the FCN was created in response to the high levels of suicide among farmers during the 1980s and 1990s. The network was closely modelled on work in southern Germany and the Gloucestershire Farming Friends as well as advice from the organisation Prairie Fire in the US, which advised Christopher to build an organisation before a major crisis happened.

The principle behind the network was to support farmers and farming communities with pastoral and practical help. Much of the time the FCN supports farmers with the increasingly complex bureaucracy from the Department for Environment,

Food and Rural Affairs or with education and welfare. The FCN is run by Sarah Brown, whose passion is working with small- and medium-sized enterprises, ‘the kind of people that have the vision but not the money to do stuff’. Together with a small team based in Northamptonshire, Sarah works with approximately 260 volunteers across the country. FCN has 29 groups in 89 counties. The volunteers are passionate about farming and the mission of the organisation, but what makes it so important is that these volunteers are farmers or part of the farming community themselves. The community is sustaining itself. This is important, not least in terms of identity. As Sarah suggests:

If you speak [to a farmer] in wellies and a jacket and you’re hanging over a gate with them, talking a language that they understand, that is actually far more useful than sending somebody into an office to talk to somebody in a suit. And the power of Farm Crisis Network is really that. It’s people that know farming working with farming people.

The FCN came into its own with the onset of foot and mouth disease (FMD) in 2001.⁷⁹ A report by Lancaster University into the FMD crisis describes the impact of the disease on communities:

The effects of the crisis were felt locally and remotely; directly and indirectly; immediately and in the longer term. For example, locally, in parts of North Cumbria, farmhouses and farmyards are integral to the village, situated on the main street among other houses. It was therefore impossible for non-farming neighbours to escape the sights, smells and sounds of culling and disposal.⁸⁰

During the crisis local expertise and knowledge of the local geography, road networks, local contractors and suppliers were ignored,⁸¹ even though many of the frontline workers were local people whose livelihood had been severely curtailed by the FMD control strategies. The crisis was largely managed by central government, agencies and local authorities, isolating the community and leaving it powerless to help or support

their work. Worse, many of the individuals drafted in to help had little idea of what the disease entailed and its effect on farming communities.

In contrast to the government, the FCN adopted a more nuanced approach, reaching out to farmers and the wider community and supporting thousands of households with pastoral and practical help. Although individually farmers have to be enormously resilient, ironically this means they rarely pull together as a community – they need external actors to help them build and maintain ties – organisations like the Tenant Farmers Association and the National Farmers’ Union, which exists to help farmers and the countryside more broadly.

As described elsewhere, one of the reasons why the government’s approach largely failed during the 2001 FMD outbreak was because it did not know about or leverage the networks that existed already. This is a crucial point, not least because the instinct of the government and the emergency services is to take control of an event and build their own architecture of participation. This is clearly important in terms of a command and control approach during an event, but it is important that institutions and organisations also use networks that already exist rather than try and create new ones.

The vicar in a van

Father Jim Kennedy is parish priest at the Blessed Sacrament Church, near King’s Cross, in the London Borough of Islington. He is known fondly as the ‘vicar in a van’, on notice to move (with three others – depending on who is carrying the mobile phone) 24/7 in the event of an emergency. The mobile phone, green flashing lights for the car and a high visibility jacket were paid for by the local emergency planning officer who believes it is important to have the faith community integrated into their planning and response mechanisms. Jim and the team also carry security cards identifying who they are. This may seem over the top, but there is anecdotal evidence that journalists pretended to be volunteer chaplains during the 2005 terrorist attacks in London in order to talk to victims who were inside the police cordon.

This was not the case 22 years ago when a fire broke out on the escalators at King's Cross. The fire at King's Cross in 1987 cost the lives of 31 people and more than 60 suffered injuries, ranging from severe burns to smoke inhalation. In February 1988 a public inquiry into the incident was conducted by Desmond Fennell, QC. The inquiry found a catalogue of errors. The alarm was raised by a passenger at about 7.30pm and following procedures a member of staff went to inspect the fire. The inquiry noted:

But he [the member of staff] was not based at King's Cross and he had received no fire training: he informed neither the station manager nor the line controller. London Underground had no evacuation plan. By chance two police officers were present and as their radios did not work below ground, one ran to the surface to call the London Fire Brigade.

Hearing the news that evening Jim decided to go to the station to see if he could lend a hand and help in any way. He remembers members of the clergy tripping over hoses, and getting in the way of the emergency services. And problems were not confined to the station – at local hospitals, staff and people were complaining that there were no clergy present to offer pastoral care to those who had been badly injured. Outside the station Jim offered support to the families of the bereaved and injured. The church and parish hall next door became a focus for those who had been involved in the disaster and parishioners rallied round to help.⁸²

The event made Jim and others realise that there needed to be a more formalised mechanism to organise pastoral care in the event of an emergency. One of the main ideas to come out of the fire was the creation of the Islington Faiths Forum, a community partnership of faith-based organisations working together to assist local community development and delivery of individual and community support services. The lessons learned from the King's Cross fire were put to the test on 7 July 2005 when there was a series of coordinated suicide bomb attacks on London's public transport system during the morning rush hour.

Mirroring the emergency service's command and control approach, the faith community adopted a similar system and soon were in place. As Jim recalled:

Those with the task of coordinating activities at the site of emergencies are known as silver chaplains and the individuals he or she calls in to help are known as bronze chaplains. Each silver chaplain has a list of priests, ministers and imams who are available. Last Thursday at King's Cross there was a designated silver chaplain from the Salvation Army who called in a representative of the relevant faith group to minister to any person who was in need.

The four priests in the Islington area of King's Cross met at 11am and decided to open two of the churches, the Blessed Sacrament and All Saints, because they were on the walking routes from the station if people wanted to drop in. Jim kept in touch with the local imam and other members of the clergy in case. At King's Cross, hundreds of people sought shelter at the Quakers' Friends House in Euston Road and the Salvation Army's Faith House nearby.

Faith communities are a key network in the UK; 77 per cent of the UK's population identifies as having some kind of religious faith or link to a religious tradition.⁸³ As a recent government white paper states: faith communities have in excess of 11,000 leaders who can coordinate their communities and have an infrastructure of plant, buildings and networks with a unique mix of competencies, which include skills in providing support to people in times of crisis and its aftermath.⁸⁴

Community leaders

The Lozells riots in 2005 were some of the worst disturbances Birmingham had seen. One man was killed and police made numerous arrests. Tense relations between communities continued to flare up. Fearing that there would be more violence, the faith communities came together with the Council to exchange concerns and information. A faith round table was organised and informal communication channels were created between the faith leaders.

In 2007 Meshack Tesfa Bernard-Brown, a young football coach, was shot dead following the stabbing of two Asian men hours earlier. The family of the shot man and community leaders appealed for calm. Based on their previous experience and their increasingly close relationship, faith community leaders – including Bishop Dr Joe Aldred from the Council of Black-led Churches, Sewa Singh Mandla, chairman of the Council of Sikh Gurdwaras, and Rabbi Leonard Tann, from the Birmingham Hebrew Congregation – visited their families. The gesture worked and helped to bridge and link communities in the Lozells area.

In a report for the Joseph Rowntree Trust, Robert Furbey from Sheffield Hallam University found that faith communities contribute substantial and distinctive bridging and linking social capital in communities and that the developing of local, regional and national frameworks helps connect faiths with each other and secular organisations. On the Sunday after the July bombings in 2005 Jim welcomed a number of newcomers to Mass. They were a mixed bunch: those who had been caught up in the events of the last week, as well as people who, although they did not usually attend Sunday Mass, had felt it important to do so on this occasion.

Networks of governance

The South West ACRE Network of rural community councils

Local government offers a potentially rich seam to tap in terms of community resilience. Parish councillors, district councillors and county councillors offer another route in to communities. There are approximately 10,000 community, parish and town councils in England and Wales, made up of nearly 100,000 councillors. A large majority of these councils are represented by the National Association of Local Councils. The South West ACRE Network (SWAN) of rural community councils offers advice and support to over 1,400 village and community halls and engages with nearly 2,000 parish and town councils in the southwest of England. SWAN works with voluntary and community sector partners at regional level to promote rural

interests and secure programme funding to support the voluntary and community sector.

SWAN's board of trustees comprises chief executives and trustee representatives of the seven rural community councils in the southwest, including Community Action (former Avon area), Cornwall Rural Community Council, Community Council of Devon, Dorset Community Action, Gloucestershire Rural Community Council, Community Council for Somerset and Community First Wiltshire. In many respects the sheer number of networks in urban and rural areas presents a problem for central government and local authorities when allocating resources and identifying the community champions and vulnerable people. But just as businesses often cooperate together and develop self-regulatory mechanisms, so too do voluntary organisations. Rural community councils can act as a bridging mechanism for central government from above and individuals and communities from below. They should therefore be considered to be potential champions of community resilience.

Action with Communities in Rural England

The Northampton branch of Action with Communities in Rural England is 13 miles away from Sarah Brown's FCN office in Northamptonshire but could just as well be thousands of miles away, given their respective roles and responsibilities. Action with Communities in Rural England is an independent charitable organisation offering a range of services, including providing information about new legislation, giving training and helping rural groups increase cooperation. Perhaps most importantly, staff inform and advise local authorities about 'the grass root perspective'. Separately they provide a network for their members, but together they present a picture of a resilient community – multiple networks criss-crossing each other, often for different purposes, but with the potential to collaborate if an emergency or crisis emerges.

7 Resilience 2.0

In his book *Here Comes Everybody* Clay Shirky opens with a story about a woman named Ivanna who left her mobile phone on the back seat of a New York City cab:

Ivanna asked her friend, Evan, to send an email to the phone asking for a reward. After a couple of days without luck Ivanna bought a new phone. Her phone company transferred a copy of her numbers, photos and other information to her new phone. Her new phone included pictures taken by a young woman called Sasha who had Ivanna's old phone (Ivanna knew this because her new phone included Sasha's email address). After emailing Sasha several times asking for the phone back, but with no luck, Evan switched tactics. He created a simple webpage with a brief description of the events and titled the page StolenSidekick, and added it to his personal website at EvanWasHere.com. Evan's friends forwarded it around the internet.

The first update on StolenSideKick were details of Sasha's MySpace page – Evan's friends had clearly been doing some online detective work, the second update was more background on the phone and a third update was a note reporting that a New York police officer had seen the story and written explaining how to file a claim to the police. That night Evan's story appeared on Digg, a collaborative news website where users suggest stories and other users rate them. The front page of Digg gets millions of readers a day. Evan's story struck a nerve. The story began to get local then national media attention. Evan and Ivanna filed a report with the police, who classified the phone lost rather than stolen property. Several people in the New York City government wrote in offering to help get the complaint amended, including a police officer. By this point millions of readers were watching, and dozens of mainstream news outlets had covered the story. Under pressure, the police sent two detectives to talk with Ivanna and agreed to treat the phone as stolen. On 15 June police officers arrested Sasha and recovered the stolen sidekick.⁸⁵

Shirky suggests that this story demonstrates how dramatically connected we have become to one another, how we have increased our social visibility through applications like Facebook and MySpace and the ease and speed with which a group can be mobilised for the right kind of cause.⁸⁶ This chapter makes the case for government, its agencies and emergency services to leverage the potential of social media for disaster management and emergency planning.

The website <http://brumcitycentre.wordpress.com> is Birmingham City Centre's Neighbourhood Forum web page. The forum covers an area from St Chad's Queensway near Snow Hill Station to the Bullring, and from Bath Row to Sandpits, which runs into Paradise Circus. The website is the work of a voluntary, non-political organisation of Birmingham city centre residents; it lists the dates of committee and public meetings, and gives information about planning, recycling and resilience.

On the right-hand side of the home page is a box asking readers whether they have ICE in their mobile phones. ICE stands for In Case of Emergency – the number emergency services should call in case of an accident or emergency. Bob Brotchie, an East Anglian Ambulance paramedic stationed in Cambridge, suggested that this question should be included on the web page to encourage people to put ICE numbers on their phones. He realised how much easier it would be for the emergency services to contact the next of kin of those involved in an accident or emergency if there was a standard entry on their mobile phone.

A recent blog post on the website asks people to get in touch with the organisers of the forum if they are interested in getting involved in resilience activities. Use of blog posts, mobile phones and other tools like email and instant messaging are manifestations of a more fundamental shift according to Clay Shirky:

We now have communications tools that are flexible enough to match our social capabilities, and we are witnessing the rise of new ways of coordinating action that take advantage of that change. We are living in the middle of a remarkable increase in our ability to share, to cooperate with

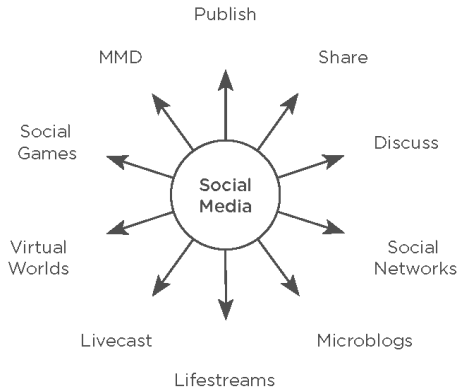
*one another, and to take collective action, all outside the framework of traditional institutions and organisations.*⁸⁷

Social media tools share a loose set of characteristics including:

- *Reach* providing scale and enabling anyone to reach a large audience
- *Usability* as there is no need for formal training; most people with access to a computer can use them
- *Accessibility* as they are generally available to anyone at little or no cost
- *Time* as they are capable of an instantaneous response

Social media can take many different forms, including blogs, wikis, podcasts, pictures and videos. The key point about social media, however, is not the technology but how people use them (see Figure 4).

Figure 4 **The social media landscape**



Source: Adapted from www.fredcavazza.net.

The hurricane information centre

Two days before Hurricane Gustav came ashore in Louisiana, Andy Carvin, a senior product manager for online communities at National Public Radio, decided to act. Together with a couple of friends and colleagues he created a Ning site. A Ning site is a piece of software onto which you can bolt different tools and into which you feed information. Andy and his colleagues began to determine what relevant user-generated content was available. Soon they were aggregating information from government websites, RSS feeds, Twitter, blogs and Flickr onto a single site.

Their aim was to track the path of Hurricane Gustav and help people prepare for when it made landfall. The effect was instantaneous. People began to get in touch with Andy personally, offering their support and help. Soon people began to link to the site. This was crucial because, although a link may sound like a simple concept, it has been one of the primary forces driving the success of the web. A link has two ends – called anchors – and a direction. The link starts at the ‘source’ anchor and points to the ‘destination’ anchor, which may be any web resource.⁸⁸

After a while the demographic began to shift. This was no longer just a collection of interested individuals, but a small membership base grew as a live stream of information began to appear so more people connected to the site. And these individuals were not just connecting to the Hurricane site; they were also sharing the information through their own networks. Soon hundreds and thousands of people were monitoring news and content and sharing information.

In terms of community resilience the website’s aim was simple: to be a source of information on the hurricane and to coordinate volunteer activities. It not only complemented existing websites and information being communicated by government departments, but also acted as a filter, identifying key bits of information and recycling them across the developing network. As more people joined, so partial bits of information were sucked in and added to the site, like a virtual jigsaw puzzle.

Los Angeles Fire Department

The story of the hurricane information centre demonstrates the role the public can have in preparing for an ensuing crisis; the Los Angeles Fire Department's (LAFD's) approach to social media is an example of how an institution can employ social media tools as part of its overall communications plan. The LAFD team of three operates their Blogger site from a decommissioned bomb shelter four storeys beneath Los Angeles City Hall. (Blogger is a free blog publishing tool owned by Google, which describes a blog as an 'easy-to-use website, where you can quickly post thoughts, interact with people, and more'.) There Brian Humphrey, a 23-year veteran, runs a myriad of social media projects. He uses social media for various reasons, but fundamentally in order to receive feedback.

He is not just communicating with the emergency services but with members of the public, who might be at the scene of the emergency (and in some cases long before the LAFD arrives). He uses Google to monitor keywords like 'LA' and 'fire' (during the 800-acre fire in Griffith Park in 2007, he got real-time reports on flare-ups and wind directions from Twitterers on the ground, then relayed the information to commanders battling the flames).

Humphrey uses social media tools to act as an early warning mechanism, allowing him to anticipate possible scenarios by keeping tabs on crises elsewhere. He does this by aggregating information from a plethora of sources and tagging events when they occur. He also uses map mashups to plot information from the public about fires and cross references them with current operations. Humphrey is thinking of using mobile alerts where users can plug in their addresses or the address of their children's school; by pushing the information to the subscriber's cell phone or PDA, they can be notified if there is an incident in the area.

So far we have seen how social media can be used by members of the public to build shared awareness of an approaching hurricane and communicate information on how to prepare for its consequences. We have also seen how the LAFD is employing social media to create early warning systems and feedback loops based on the experience of those in or near fires

(and other major accidents). Social media can also be used as an influencing tool.

Voter under Water

Voter under Water is the brain child of Alan Stanton, a councillor in the London Borough of Haringey, which is geographically diverse. The wooded high ground around Muswell Hill falls sharply away to the flat, open, low-lying land beside the River Lea in the east. It is in the more low-lying areas that urban flooding is becoming an increasing problem; however, the threat does not come from the River Lea but from the sewerage system.

What really frustrates Stanton is that it is increasingly clear that the system can no longer cope with the volume and intensity of the flow of water. So when one part of it is temporarily filled, rainwater finds a new route. This leads to localised flooding, especially if the ground is already saturated (because of torrential rain) or has been concreted over for shopping malls, houses and patios. Stanton's frustration led him to create a Flickr site where he tags 'flooding' to build up an online photo album showing what urban flooding can do to people's houses.

Flickr is an online photo management and sharing application, which has two main goals: to help people make their content available to others who matter to them and to provide new ways of organising photos and videos. Flickr provided some of the first photos of the London bombings in July 2005. As Shirky argues, tools like Flickr reverse the old order of group activity, transforming 'gather, then share' into 'share, then gather'.⁸⁹ This approach is potentially very powerful, not least because users look for other people rather than waiting for people to connect with them – it means you can build a large group of contacts very quickly, and this is important if you want to influence change.

Social media tools allow individuals and communities to share and cooperate with one another outside the framework of traditional institutions and organisations. Inside government the digital revolution has the potential to transform: challenging

bureaucracies, improving services and producing innovative solutions in social policy. Our increasing social visibility is having a profound effect on how we connect to each other and mobilise groups for the right kind of cause. According to Brian Humphrey, the key conclusion to be drawn from LAFD's social media initiatives is increased citizen engagement and input. Humphrey underscored this point in a recent interview when he observed that:

When you are on top of the Web 2.0 hill, it's not about talking louder, the chief benefit is the feedback you receive, both positive and negative. Meaningful feedback for free is priceless for a public service.⁹⁰

8 A resilient nation

According to a national survey undertaken by *Reader's Digest*, Birmingham was the UK's most prepared city in 2006.⁹¹ The least prepared city was Liverpool (in case you were wondering). But guess how *Reader's Digest* measured each city's preparedness? It focused on three areas: 'emergency readiness', 'crisis communication' and 'medical response'.

Measuring a city's preparedness to meet disasters by how fast an ambulance gets to the scene or according to whether the local fire service supports an urban search and rescue unit makes sense if you want to know how good your emergency services are. But measuring the response time of an ambulance is hardly the most appropriate way of measuring a city's preparedness. For one thing it completely disregards whether a city council has various emergency plans in place (which they do) or the important role individuals and communities play in making their city resilient. If we are serious about developing community resilience we must think less about what the emergency services can do for us and instead think about what we can do for ourselves, and how those relevant institutions and organisations can support us.

Community resilience is an everyday activity. It manifests itself in meetings and conversations, dialogue and training, skills and information and – when disaster occurs – action. Although it may be formalised in local parish plans or community risk registers, community resilience is first and foremost about people – not the paper the plans are written on. And this presents a problem for government, relevant agencies and the emergency services.

UK resilience, as it is currently understood, is premised on a command and control approach. The Civil Contingencies Act, for example, places a responsibility on category 1 and 2

responders to put in place emergency plans, business continuity management arrangements, and arrangements to make information available to the public about civil protection matters. This approach ensures those organisations are accountable for their actions and means that central government is able to influence their approach through resource allocation and compliance mechanisms.

In contrast, community resilience requires an altogether more nuanced and subtle approach that is premised on institutions and organisations *letting go*, creating the necessary framework for action, rather than developing specific plans and allowing community resilience to emerge and develop in local areas over time. And although central government often requires a uniformity of approach, seen from above, community resilience resembles a patchwork of ideas, action and exercises. No single plan exists, never should and hopefully never will.

The role of central government in community resilience will always be limited. It will not be the main protagonist, a supporting actor or an extra – rather its role will be played out behind the scenes by a supporting cast of players who ensure the system is operating to the best of its ability.

Adopting this invisible role will not be easy for central government. Politicians from the three main political parties will, on the one hand, target the apparent lack of focus and lack of uniformity in such an approach, while on the other hand, communities may blame the government for any apparent failings (legitimate or not) that occur during an emergency and the recovery phase.

The four Es

The government should resist the temptation to respond to both sets of critics and instead adopt an approach to community resilience based on four Es: *engagement, education, empowerment* and *encouragement*.

Engagement

Engagement strategies are based on dialogue and feedback. Central government, local authorities, emergency planning officers and the emergency services can no longer simply *communicate* with individuals and communities; they need to *engage* with them. Engagement must go beyond the ‘fire alarm’ approach of handing out specific information to communities and instead involve listening to individual and community concerns, and focus on helping to shape and influence their decisions.

- The government should establish *an annual Preparedness Week* in October when individuals, volunteers, organisations, clubs and societies can learn and develop their preparedness to face risks in their specific geographical locations.
- Local councils, especially emergency planning officers and the emergency services, should *use social media* as part of their engagement strategies on UK resilience.

Education

As Tilly’s story showed, education is crucial to ensuring that people build individual resilience. However, educating individuals and communities about resilience must be embedded into their everyday lives and must connect with them, whether in the classroom, at work or shopping. The balance is to ensure the approach is subtle, connected to current activities (rather than standalone efforts) and reflects the context and demographics in each location.

- Based on the work of Essex and Nottingham county councils, individual and community resilience should become part of the curriculum for personal, social and health education (PSHE). The Cabinet Office should work together with organisations such as clubs and societies across the UK on making *individual resilience a goal* (for example the Scouts and Girl Guides could create a resilience badge).

Empowerment

The emergency planning bureaucracy and the focus on the response and recovery phases are a central plank in UK resilience but a balance needs to be made that allows communities to feel *empowered to act*. As the flood wardens in Walcott demonstrated in November 2007, communities have the relevant experience and skills to be resilient. They must be *empowered* to act and given the tools and resources to do this. Training and public exercises are one approach – examples in this pamphlet and elsewhere demonstrate the valuable role they play.

- The government must work with the Health and Safety Executive and Information Commissioner's Office to produce *guidance on how to carry out live exercises and training*.
- Local authorities and the emergency services should develop live exercises and training schemes for the public.
- Wiltshire County Council (among others) runs a successful community emergency volunteer scheme. The idea of identifying members of the public who want to play a role in emergency planning should be rolled out by local authorities in the UK.
- The Cabinet Office should *create an evaluation and assessment unit*. Rather than creating another layer of bureaucracy, this unit should instead work with emergency planning officers and local authorities to identify opportunities for action and assess current activities. This would complement the existing approach of measuring compliance with the Civil Contingencies Act.

Encouragement

Finally, formal and informal institutions and organisations need to encourage individuals and communities to play a role. This encouragement can take many forms but ultimately it is about realising the potential communities have and taking time to support and influence their actions. There will never be a single template for this activity and every initiative and idea will be different across the country.

Realising the potential

How should central government, local authorities and emergency services realise the potential to become a resilient nation? The scale and nature of the exercise in front of them looks vast. But as this pamphlet has argued, it need not seem so. The UK is covered with multiple dense networks of volunteers, community and faith groups, clubs, societies and voluntary organisations, and small, medium and large businesses. Include governance networks that contain parish councillors, ward councillors, local authorities, regional government structures and central government departments and agencies based in Whitehall and beyond, and you immediately see the potential across the country.

The difficulty for individuals within this system is where to start. It is precisely because of the complexity of all these networks that we tend to opt for blanket approaches, which include community risks to individuals, families and communities. But increasing the number and complexity of these networks demands a new approach, which is both surgical in its initial attempts and then helps influence the message across other networks of actors.

Community resilience may be best managed through existing neighbourhood watch schemes; in other areas of the country schools and education initiatives may present a more obvious route. In rural areas farm networks can be employed by local authorities, while in major cities supermarkets may offer an innovative way of nudging individuals to become more resilient. There can be no one-size-fits-all approach to community resilience. What works in Birmingham may make no sense in Bristol, while initiatives that work in Northumberland may fail to take root in Newbury – community resilience activities will always have to be developed from the bottom up.

As the Director General of Emergency Management Australia has said, ‘the more that we as individuals can do to prepare ourselves, the more effectively the emergency services can direct their resources’⁹² – and knowing what to do and who to speak to means we can be confident in an emergency. These are the principles which will help us build a resilient nation.

Notes

- 1 Quoted in Hennessy, *The New Protective State*.
- 2 Gardener, *Risk*.
- 3 Ariely, *Predictably Irrational*.
- 4 Ripley, *The Unthinkable*.
- 5 Ibid.
- 6 The earthquake was initially reported as moment magnitude 9.0. In February 2005 scientists revised the estimate of the magnitude to 9.3. Dr Hiroo Kanamori of the California Institute of Technology believes that 9.2 is a good representative value for the size of the earthquake.
- 7 Wikipedia, '2004 Indian Ocean earthquake'.
- 8 Larcombe, 'Mum we must get off the beach now'.
- 9 Owen, 'Tsunami family saved by schoolgirl's geography lesson'.
- 10 Ripley, *The Unthinkable*.
- 11 Tilly Smith has her own Wikipedia page: http://en.wikipedia.org/wiki/Tilly_Smith (accessed 18 Jan 2008); interestingly Asteroid 20002 Tillysmith has been named after her.
- 12 Owen, 'Tsunami family saved by schoolgirl's geography lesson'.

- 13 See the UN International Strategy for Disaster Reduction at www.unisdr.org/.
- 14 See Cabinet Office, *National Risk Register*.
- 15 Omand, 'Developing national resilience'.
- 16 'Scotland plans to strengthen resilience to major emergencies', *Public Technology Net*.
- 17 'Risks' are categorised as threats (malicious events such as terrorist attacks) or hazards (non-malicious events such as flooding). See UK Resilience website at www.ukresilience.info (accessed 25 Oct 2007).
- 18 Walker et al, *Resilience Thinking*.
- 19 For further work by Adger see the Resilience Alliance website at www.resalliance.org/1.php (accessed 30 Mar 2009).
- 20 Castells, *The Rise of the Network Society*.
- 21 Resilient Nation Advisory Group, Dec 2008.
- 22 Sen, *Identity and Violence*.
- 23 Association of British Insurers, *Climate Adaptation*.
- 24 See Maguire and Hagan, 'Disasters and communities'.
- 25 See Edwards and Skidmore, *A Force for Change*.
- 26 Ripley, *The Unthinkable*.
- 27 House of Commons Home Affairs Committee, 27 Jan 2009.
- 28 Parker et al, *State of Trust*.
- 29 See O'Hara, *Trust*.

- 30 Shirky, *Here Comes Everybody*.
- 31 ICMR, 'Tesco's supply chain management practices'.
- 32 'Environmental brittleness' is a term coined by those studying environmental sustainability, land management and the effect of climate change on the environment.
- 33 de Graaf, *Affluenza*.
- 34 Russell, 'The selfish generation'.
- 35 Castle, 'Infrastructure still at risk from floods'.
- 36 Groves, 'Blackout Britain warning'.
- 37 See CNI Scan, www.cniscan.org (accessed 10 Dec 2008).
- 38 PITCOM, 'Critical connections under strain'.
- 39 See Ridgeway, 'Giuliani's worst nightmare'.
- 40 Infinity, *Providing Protection and Continuity*.
- 41 'Impacts of summer 2003 heat wave in Europe'.
- 42 See the European Commission Public Health website for a number of reports: http://ec.europa.eu/health/ph_information/dissemination/unexpected/unexpected_en.htm (accessed 2 Feb 2009).
- 43 Steven, 'Not shocked but stressed'.
- 44 Pitt, *Final Report*.
- 45 For the key literature on risk communication see Bostrom et al, 'Evaluating risk communications'.

- 46 Marris et al, 'A quantitative test of the cultural theory of risk perceptions'.
- 47 Granger Morgan et al, *Risk Communication*.
- 48 Gardener, *Risk*.
- 49 Thaler and Sunstein, *Nudge*.
- 50 Kahneman et al, *Judgment under Uncertainty*.
- 51 Burrell, 'The pounds 50,000 bill to keep paedophile safe in a cell'.
- 52 Kahneman et al, *Judgment under Uncertainty*.
- 53 Thaler and Sunstein, *Nudge*.
- 54 Gardener, *Risk*.
- 55 Thaler and Sunstein, *Nudge*.
- 56 Gardener, *Risk*.
- 57 Cabinet Office, *National Risk Register*.
- 58 See Fischhoff, 'A hero in every aisle seat'.
- 59 Thaler and Sunstein, *Nudge*.
- 60 Ibid.
- 61 Whyte, 'Australia knows something about drought'.
- 62 This phrase was coined by Peter Hennessey and is the name of an edited collection of essays on security, resilience and intelligence. See Hennessey, *The New Protective State*.
- 63 Clegg, 'A new civil defence force would defeat the politics of fear'.

- 64 Brown, National Security Strategy statement.
- 65 Neville-Jones, 'An unquiet world'.
- 66 Chapman, *System Failure*.
- 67 Fox, *Struggle for Survival*; see also Campbell, *War Plan UK*.
- 68 Fox, *Struggle for Survival*.
- 69 Alexander, 'From civil defence to civil protection – and back again'.
- 70 Anderson, *Foot and Mouth Review 2001*.
- 71 Mann, 'Protecting the UK's critical national infrastructure'.
- 72 The voluntary sector lacks a clear operational definition of the broader voluntary and community sector. This pamphlet adopts the meaning of voluntary sector given by the National Council for Voluntary Organisations – those organisations registered by the Charity Commission in England and Wales, plus organisational lists maintained by the Scottish Council for Voluntary Organisations and the Northern Ireland Council for Voluntary Action. It excludes housing associations, independent schools, government-controlled charities (such as NHS charities and non-departmental public bodies) and organisations whose primary purpose is the promotion of religion.
- 73 See Cabinet Office, Office of the Third Sector, 'Key third sector statistics'.
- 74 'Formal volunteering' is defined as unpaid help given to groups, clubs or organisations to benefit others or the environment.
- 75 See the Alcester Town Council Minutes, at www.alcester-tc.gov.uk/files/seealsodocs/8817/councilmins5aug08.pdf.

- 76 Johnston, 'Will Gordon Brown's defence strategy revive volunteering?'
- 77 'Agriculture related business, final diary June 2003'.
- 78 Park et al, *British Social Attitudes*.
- 79 Mort, *The Health and Social Consequences of the 2001 Foot & Mouth Disease Epidemic in North Cumbria*.
- 80 Ibid.
- 81 Anderson, *Foot and Mouth Review 2001*.
- 82 Curti, 'The other emergency service'.
- 83 Communities and Local Government, *Key Communities, Key Resources*.
- 84 Ibid.
- 85 Shirky, *Here Comes Everybody*.
- 86 Ibid.
- 87 Ibid.
- 88 See link information at www.w3.org/TR/REC-html40/struct/links.html (accessed 12 Feb 2009).
- 89 Shirky, *Here Comes Everybody*.
- 90 See Sternberg, 'How the LAFD keeps us connected'.
- 91 Jones, 'The next disaster'. Birmingham City Council is also highly thought of as providing leaders in community resilience.
- 92 Emergency Management Australia, *Preparing for the Unexpected*.

References

‘Agriculture related business, final diary June 2003’ in M Mort et al, *The Health and Social Consequences of the 2001 Foot & Mouth Disease Epidemic in North Cumbria* (Lancaster: Institute for Health, Lancaster University, 2004), at www.lancs.ac.uk/fass/ihr/research/healthandplace/fmdfinalreport.pdf (accessed 21 Jan 2009).

‘Impacts of summer 2003 heat wave in Europe’, *UNEP Environment Alert Bulletin* (Mar 2004), at www.grid.unep.ch/product/publication/download/ew_heat_wave.en.pdf (accessed 30 Jun 2008).

‘Scotland plans to strengthen resilience to major emergencies’, *Public Technology Net*, 5 Feb 2008, www.publictechnology.net/print.php?sid=13970 (accessed 10 March 2008).

Alexander, D, ‘From civil defence to civil protection – and back again’, *Disaster Prevention and Management* 11, no 3 (2002).

Anderson, I, *Foot and Mouth Review 2001* (London Stationery Office, 2002).

Ariely, D, *Predictably Irrational: The hidden forces that shape our decisions* (London: HarperCollins, 2008).

Association of British Insurers, *Climate Adaptation: Guidance on insurance issues for new developments* (Jan 2009), at www.abi.org.uk/Newsreleases/viewNewsRelease.asp?nrid=17224 (accessed 27 Jan 2009).

Bostrom, A et al, 'Evaluating risk communications: completing and correcting mental models of hazardous processes, part 2', *Risk Analysis* 14 (1994).

Brown, G, National Security Strategy statement, 19 Mar 2008, at www.number10.gov.uk/Page15102 (accessed 15 Nov 2008).

Burrell, I, 'The pounds 50,000 bill to keep paedophile safe in a cell', *Independent*, 6 Feb 1998, at www.independent.co.uk/news/the-pounds-50000-bill-to-keep-paedophile-safe-in-a-cell-1143074.html (accessed 18 Jan 2009).

Cabinet Office, *National Risk Register* (London: Stationery Office, 2008).

Cabinet Office, Office of the Third Sector, 'Key third sector statistics', at www.cabinetoffice.gov.uk/third_sector/Research_and_statistics/Key_statistics.aspx (accessed 15 Jan 2009).

Castells, M, *The Rise of the Network Society* (Oxford: Blackwell, 1996).

Castle, T, 'Infrastructure still at risk from floods', Yahoo Finance, 25 Jun 2008, at <http://uk.biz.yahoo.com/24062008/325/infrastructure-risk-floods.html> (accessed 24 Jan 2009).

Chapman, J, *System Failure: Why governments must learn to think differently*, 2nd ed (London: Demos, 2002).

Clegg, N, 'A new civil defence force would defeat the politics of fear', *Observer*, 9 Dec 2007, at www.guardian.co.uk/commentisfree/2007/dec/09/comment.politics (accessed 10 Dec 2008).

Communities and Local Government, *Key Communities, Key Resources: Engaging the capacity and capabilities of faith communities in civil resilience* (London: Stationery Office, 2008).

Curti, E, 'The other emergency service', *Tablet*, 28 Feb 2009, at www.thetablet.co.uk/article/1097 (accessed 28 Feb 2009).

de Graaf, J, *Affluenza: The all-consuming epidemic* (San Francisco: Berrett-Koehler 2001).

Edwards, C and Skidmore, P, *A Force for Change: Policing 2020* (London: Demos, 2006).

Emergency Management Australia, *Preparing for the Unexpected* (Barton, ACT: Attorney-General's Department, 2008).

Fischhoff, B, 'A hero in every aisle seat', *New York Times*, 7 Aug 2005, at www.nytimes.com/2005/08/07/opinion/07fischhoff.html (accessed 7 Dec 2008).

Fox, S, *Struggle for Survival: Governing Britain after the bomb*, 2004, at www.subbrit.org.uk/rsg/features/sfs (accessed 18 Nov 2008); see also Campbell, D, *War Plan UK: The truth about civil defence in Britain* (London: Burnett, 1982).

Gardener, D, *Risk: The science and politics of fear* (Carlton North: Scribe Publications, 2008).

Granger Morgan, M et al, *Risk Communication: A mental models approach* (Cambridge: Cambridge University Press, 2008).

Groves, J, 'Blackout Britain warning', *Daily Express*, 7 Sep 2008, at www.express.co.uk/posts/view/60259/Blackout-Britain-warning (accessed 23 Nov 2008).

Hennessy, P (ed), *The New Protective State: Government, intelligence and terrorism* (London: Continuum, 2007).

House of Commons Home Affairs Committee, 27 Jan 2009, uncorrected transcript of oral evidence, at www.publications.parliament.uk/pa/cm200809/cmselect/cmhaff/uc212-i/uc21201.htm (accessed 15 Feb 2009).

ICMR, 'Tesco's supply chain management practices', 2006, at www.icmrindia.org/casestudies/catalogue/Operations/OPER054.htm (accessed 17 Jan 2009).

Infinity, *Providing Protection and Continuity: The UK's national security in the 21st Century*, Aug 2007, at www.ippr.org.uk/uploadedFiles/ipprcommissions/infinity_ippr_submission.pdf (accessed 20 Jan 2009).

Johnston, P, 'Will Gordon Brown's defence strategy revive volunteering?', *Daily Telegraph*, 19 Mar 2008, at http://blogs.telegraph.co.uk/philip_johnston/blog/2008/03/19/will_gordon_browns_defence_strategy_revive_volunteering (accessed 8 Nov 2008).

Jones, H, 'The next disaster: are we ready? A special report on ten high risk cities', *Readers Digest*, Nov 2006, at www.readersdigest.co.uk/images/files/Next_Disaster.pdf (accessed 1 Apr 2009).

Kahneman, D, Slovic, P and Tversky, A, *Judgment under Uncertainty: Heuristics and biases* (Cambridge University Press: 1982).

Larcombe, D, 'Mum we must get off the beach now', *Sun*, 1 Jan 2005, at www.thesun.co.uk/sol/homepage/news/article100559.ece (accessed 18 Jan 2008).

Maguire, B and Hagan, P, 'Disasters and communities: understanding social resilience', *Australian Journal of Emergency Management* 22, no 2 (May 2007), at [www.ema.gov.au/agd/EMA/rwpattach.nsf/VAP/\(1FEDA2C440E4190E0993A00B7C030CB7\)~16-20maguire.pdf/\\$file/16-20maguire.pdf](http://www.ema.gov.au/agd/EMA/rwpattach.nsf/VAP/(1FEDA2C440E4190E0993A00B7C030CB7)~16-20maguire.pdf/$file/16-20maguire.pdf) (accessed 19 October 2008).

Mann, B, 'Protecting the UK's critical national infrastructure', *Contingency Today*, 1 Jul 2007, at www.contingencytoday.com/

online_article/Protecting-the-UK_s-Critical-National-Infrastructure/416 (accessed 8 Nov 2008).

Marris, C et al, 'A quantitative test of the cultural theory of risk perceptions: comparison with the psychometric paradigm', *Risk Analysis* 18, no 5 (Oct 1998).

Mort, M, *The Health and Social Consequences of the 2001 Foot & Mouth Disease Epidemic in North Cumbria*. (Lancaster: Institute for Health, Lancaster University, 2004), at www.lancs.ac.uk/fass/ihr/research/healthandplace/fmdfinalreport.pdf (accessed 21 Jan 2009).

Neville-Jones, P, 'An unquiet world', submission to the Shadow Cabinet, National and International Security Policy Group, Jul 2007.

O'Hara, K, *Trust: From Socrates to spin* (Colchester: Icon, 2004).

Omand, D, 'Developing national resilience', *RUSI Journal* 150, no 4 (Aug 2005).

Owen, J, 'Tsunami family saved by schoolgirl's geography lesson', *National Geographic News*, 18 Jan 2005, at http://news.nationalgeographic.com/news/2005/01/0118_050118_tsunami_geography_lesson.html (accessed 17 Dec 2008).

Park, A et al, *British Social Attitudes: Public policy, social ties* (London: Sage Publications, 2001).

Parker, S et al, *State of Trust: How to build better relationships between councils and the public* (London: Demos 2008).

PITCOM, 'Critical connections under strain', PITComms briefing, Nov 2006, www.pitcom.org.uk/briefings/PitComms1-CNI.pdf (accessed 10 Dec 2008).

Pitt, M, *Final Report: Learning lessons from the 2007 floods* (London: Stationery Office, 2008), at http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final_report.html (accessed 8 Nov 2008).

Ridgeway, J, 'Giuliani's worst nightmare', Deadline USA blog, 28 Jan 2008, at www.guardian.co.uk/world/deadlineusa/2008/jan/28/giulianisworstnightmare (accessed 9 Jan 2009).

Ripley, A, *The Unthinkable: Who survives when disaster strikes – and why* (London: Random House, 2008).

Russell, J, 'The selfish generation: we allow marketeers to dictate our social norms – with dire results', *Guardian*, 6 Dec 2003, at www.guardian.co.uk/uk/2003/dec/06/britishidentity.comment (accessed 18 Dec 2008).

Sen, A, *Identity and Violence: The illusion of destiny* (London: Penguin, 2006).

Shirky, C, *Here Comes Everybody: The Power of Organising without organisations* (Penguin: London, 2008).

Sternberg, A, 'How the LAFD keeps us connected: an interview with Brian Humphrey', at http://laist.com/2007/07/09/how_lafd_keeps.php (accessed 18 Jan 2009).

Steven, D, 'Not shocked but stressed', Global Dashboard, Mar 2008, at www.globaldashboard.org/2008/03/15/not-shocked-but-stressed (accessed 5 Feb 2009).

Thaler, R and Sunstein, C, *Nudge: Improving decisions about health, wealth and happiness* (Yale: Yale University Press, 2008).

Walker, B et al, *Resilience Thinking: Sustaining ecosystems and people in a changing world* (Washington, DC: Island Press, 2006).

Whyte, P, 'Australia knows something about drought', *Los Angeles Times*, 4 Jan 2009, at www.latimes.com/news/opinion/sunday/commentary/la-oe-whyte4-2009jan04,0,5701864.story (accessed 17 Jan 2009).

Wikipedia, '2004 Indian Ocean earthquake', at http://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake (accessed 9 Jan 2009).

Demos – Licence to Publish

The work (as defined below) is provided under the terms of this licence ('licence'). The work is protected by copyright and/or other applicable law. Any use of the work other than as authorized under this licence is prohibited. By exercising any rights to the work provided here, you accept and agree to be bound by the terms of this licence. Demos grants you the rights contained here in consideration of your acceptance of such terms and conditions.

1 Definitions

- A **'Collective Work'** means a work, such as a periodical issue, anthology or encyclopedia, in which the Work in its entirety in unmodified form, along with a number of other contributions, constituting separate and independent works in themselves, are assembled into a collective whole. A work that constitutes a Collective Work will not be considered a Derivative Work (as defined below) for the purposes of this Licence.
- B **'Derivative Work'** means a work based upon the Work or upon the Work and other pre-existing works, such as a musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which the Work may be recast, transformed, or adapted, except that a work that constitutes a Collective Work or a translation from English into another language will not be considered a Derivative Work for the purpose of this Licence.
- C **'Licensor'** means the individual or entity that offers the Work under the terms of this Licence.
- D **'Original Author'** means the individual or entity who created the Work.
- E **'Work'** means the copyrightable work of authorship offered under the terms of this Licence.
- F **'You'** means an individual or entity exercising rights under this Licence who has not previously violated the terms of this Licence with respect to the Work, or who has received express permission from Demos to exercise rights under this Licence despite a previous violation.

2 Fair Use Rights

Nothing in this licence is intended to reduce, limit, or restrict any rights arising from fair use, first sale or other limitations on the exclusive rights of the copyright owner under copyright law or other applicable laws.

3 Licence Grant

Subject to the terms and conditions of this Licence, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) licence to exercise the rights in the Work as stated below:

- A to reproduce the Work, to incorporate the Work into one or more Collective Works, and to reproduce the Work as incorporated in the Collective Works;
- B to distribute copies or phonorecords of, display publicly, perform publicly, and perform publicly by means of a digital audio transmission the Work including as incorporated in Collective Works; The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. All rights not expressly granted by Licensor are hereby reserved.

4 Restrictions

The licence granted in Section 3 above is expressly made subject to and limited by the following restrictions:

- A You may distribute, publicly display, publicly perform, or publicly digitally perform the Work only under the terms of this Licence, and You must include a copy of, or the Uniform Resource Identifier for, this Licence with every copy or phonorecord of the Work You distribute, publicly display, publicly perform, or publicly digitally perform. You may not offer or impose any terms on the Work that alter or restrict the terms of this Licence or the recipients' exercise of the rights granted hereunder. You may not sublicense the Work. You must keep intact all notices that refer to this Licence and to the disclaimer of warranties. You may not distribute, publicly display, publicly perform, or publicly digitally perform the Work with any technological measures that control access or use of the Work in a manner inconsistent with the terms of this Licence Agreement. The above applies to the Work as incorporated in a Collective Work, but this does not require the Collective Work apart from the Work itself to be made subject to the terms of this Licence. If You create a Collective Work, upon notice from any Licensor You must, to the extent practicable, remove from the Collective Work any reference to such Licensor or the Original Author, as requested.
- B You may not exercise any of the rights granted to You in Section 3 above in any manner that is primarily intended for or directed toward commercial advantage or private monetary

compensation. The exchange of the Work for other copyrighted works by means of digital file sharing or otherwise shall not be considered to be intended for or directed toward commercial advantage or private monetary compensation, provided there is no payment of any monetary compensation in connection with the exchange of copyrighted works.

- c If you distribute, publicly display, publicly perform, or publicly digitally perform the Work or any Collective Works, You must keep intact all copyright notices for the Work and give the Original Author credit reasonable to the medium or means You are utilizing by conveying the name (or pseudonym if applicable) of the Original Author if supplied; the title of the Work if supplied. Such credit may be implemented in any reasonable manner; provided, however, that in the case of a Collective Work, at a minimum such credit will appear where any other comparable authorship credit appears and in a manner at least as prominent as such other comparable authorship credit.

5 Representations, Warranties and Disclaimer

- A By offering the Work for public release under this Licence, Licensor represents and warrants that, to the best of Licensor's knowledge after reasonable inquiry:
 - i Licensor has secured all rights in the Work necessary to grant the licence rights hereunder and to permit the lawful exercise of the rights granted hereunder without You having any obligation to pay any royalties, compulsory licence fees, residuals or any other payments;
 - ii The Work does not infringe the copyright, trademark, publicity rights, common law rights or any other right of any third party or constitute defamation, invasion of privacy or other tortious injury to any third party.
- B except as expressly stated in this licence or otherwise agreed in writing or required by applicable law, the work is licenced on an 'as is' basis, without warranties of any kind, either express or implied including, without limitation, any warranties regarding the contents or accuracy of the work.

6 Limitation on Liability

Except to the extent required by applicable law, and except for damages arising from liability to a third party resulting from breach of the warranties in section 5, in no event will licensor be liable to you on any legal theory for any special, incidental, consequential, punitive or exemplary damages arising out of this licence or the use of the work, even if licensor has been advised of the possibility of such damages.

7 Termination

- A This Licence and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this Licence. Individuals or entities who have received Collective Works from You under this Licence, however, will not have their licences terminated provided such individuals or entities remain in full compliance with those licences. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this Licence.
- B Subject to the above terms and conditions, the licence granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different licence terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this Licence (or any other licence that has been, or is required to be, granted under the terms of this Licence), and this Licence will continue in full force and effect unless terminated as stated above.

8 Miscellaneous

- A Each time You distribute or publicly digitally perform the Work or a Collective Work, Demos offers to the recipient a licence to the Work on the same terms and conditions as the licence granted to You under this Licence.
- B If any provision of this Licence is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Licence, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.
- C No term or provision of this Licence shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent.
- D This Licence constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You. This Licence may not be modified without the mutual written agreement of Demos and You.

This project was supported by:

ARUP

We live in a brittle society. Over 80 per cent of Britons live in urban areas relying on dense networks of public and private sector organisations to provide them with essential services. But our everyday lives and the national infrastructure work in a fragile union, vulnerable to even the smallest disturbances in the network. And both are part of a global ecosystem that is damaged and unpredictable.

How does Britain protect against these risks? Much of our infrastructure is outmoded and archaic. And with their narrow focus on emergency services and institutions, so are the policies that underpin it.

This pamphlet calls for a radical rethink of resilience. Instead of structures or centralised services, it argues that citizens and communities are the true source of resilience for our society. Using numerous case studies it highlights what policy makers can learn from people's resourcefulness and points to new tools that can transform our ability to respond when disaster strikes.

Resilience is an everyday, community activity. It is people's potential to learn, adapt and work together that powers it. Only by realising this potential will we succeed in building a resilient nation.

Charlie Edwards is Head of the Security Programme at Demos.

ISBN 978-1-906693-13-8 £10

© Demos 2009

