

## 9. Lessons for Government in Minimising Risk: What can the public service learn from the private sector?

Bridget Hutter

In my contribution to this collection of essays I will focus on risk regulation—my area of expertise. I will also touch upon contingency planning, because there is some overlap between these two subjects.

Managing risks and preventing disasters are increasingly at the centre of contemporary debates about governance. And as several contributors to this volume indicate, the potential for disaster is ever present. Each year, sadly, some of these potentials are realised. Not surprisingly, we have debates about nuclear safety in the wake of natural disasters—especially following the great East Japan earthquake and subsequent tsunami of 2011. Food scares are quite regular around the globe, particularly *E. coli* outbreaks. Germany suffered a particularly bad one in 2011. Then in this region, of course, there are natural disasters—be they floods and bushfires in Australia or earthquakes in New Zealand.

In each of these cases questions are asked about governments and about regulators—and in particular, about why they weren't better prepared. In other words, they are usually criticised. This is interesting at one level, because it underlines an expectation that we can govern the future and indicates a theme in social theory: we have a very modern preoccupation with risk and live in a world where risk-management approaches are increasingly advocated as a form of governance.

Social theorists argue that modern societies are characterised by new risk environments. These are associated at one level with substantive changes in society—for example, the growth of science and technology. Moreover, these risks are increasingly global in nature, often traversing national and organisational boundaries. Internet risks fall into that category, as do the threats of climate change. In addition, often these are what I call 'manufactured risks', meaning they are the unintended consequences of innovations, science and technology to which publics and the environment are involuntarily exposed.

Once they become such risks, governments have increasingly intervened to manage and regulate them. And in so doing, they have exemplified another

feature of modern society: new ways of seeing the world that include both an orientation towards the future and a belief that we are able to anticipate, control and manage risk. This new approach has crucial consequences for governance.

From this perspective, then, regulation is one manifestation of a very modern belief that risk can be anticipated and controlled. Ulrich Beck (1992), a German sociologist, talks about a world in which we are increasingly occupied with debating, preventing and managing risk, to the point that he coined the phrase 'the risk society'. Similarly, Anthony Giddens (1999:3), a distinguished British sociologist and former director of the London School of Economics, argues that we have a growing preoccupation with the future, which he contrasts with former beliefs that were based much more in fate. The aspiration to control the future, Giddens argues, is a very modern perspective, so much so, he continues, that we also believe we are able to anticipate and do much more about natural disasters than we ever previously thought. So Beck (1992), again, writes that even natural hazards appear less random than they used to.

Social and organisational responses to expectations about anticipation and management of risk are considerable and can command enormous resources. Examples include the creation of specialist risk-management and contingency planning departments such as the United Kingdom's Civil Contingency Secretariat and the United States' Department of Homeland Security, both of which were established in the wake of 9/11. The latter commands particularly large resources.

Of course the private sector has its own equivalent departments: meta risk-management departments, compliance departments, and indeed an array of specialist staff, risk officers and compliance officers. All of these use a variety of formal risk tools and perspectives in a bid to avoid the repetition of previous risk events, and also to help identify and manage new risks. The expectations placed upon these departments and their personnel may be considerable.

One relevant example are the findings from the 9/11 Commission, which claimed that there had been a lack of institutional imagination on the part of the security services. The commission wrote that '[a]cross the government there were failures of imagination, policy capabilities and management. The most important failure was one of imagination. We don't believe the leaders understood the gravity of the threat' (National Commission on Terrorist Attacks Upon the United States 2004). This commission's emphasis on the need to have imagination is quite a hefty expectation, and underlines how great the expectations may have become.

Social commentators, for their part, tend to be sceptical about the expectation that we can anticipate and manage risk. They caution very much about some of the anticipatory expectations we place upon our governments and our organisations; Anthony Giddens (1999) talks about a plurality of future scenarios

and the absence of certainty about which is the most accurate, referring, of course, to the generation of the multiple possible things that might go wrong, which we may model. Beck refers to the optimistic futility with which the highly developed institutions of modern society attempt to anticipate what cannot be anticipated.

And Charles Perrow, a sociologist from the United States, has spent a substantial part of his career writing about the ways in which organisations are imperfect and cannot provide complete security. In fact, one of his most famous books is entitled *Normal Accidents* (Perrow 1999) to underline the fact that in very complex systems it is inevitable that something will go wrong; we cannot get it right all of the time.

Given that my contribution to this volume was to address the limits of future-proofing the state, I will now explore somewhat why many social commentators are so gloomy about the best efforts of those engaged in future-proofing the state, and some of the expectations that are placed on them. I will use a number of examples. Overall, though, the headline message is that one reason for all the gloom is the recognition of the very complex social, political, economic and technical decision-making involved in future-proofing the state.

To start with, what constitutes a risk may not be clear. There may be debates and disagreement about what is risky. As Mary Douglas and Aaron Wildavsky wrote in *Risk and Culture* (1982), 'substantial disagreement remains over what is risky, how risky it is and what to do about it'. Though this book was written several decades ago, this was true then, is true today, and without doubt will be true in several decades. There is always debate about what constitutes a risk, how risky it is and what we should do about it. And what we increasingly know is that at a technical level, we often do not have the data to really tell us with any certainty what the risk may be.

One example that is increasingly discussed is climate change, where we know that the past may not be such a good indicator of what will happen in the future. This is particularly so because climate change may be increasing the incidence and patterns of natural disasters. So we cannot look at our historical data and think that that is going to be a good predictor of what is going to happen in future.

We also have another problem, other than the contestation of scientific knowledge: politics has become embroiled with science. Take the example of so-called 'Climategate', which involved a politically motivated challenge to the status of scientific evidence and knowledge about climate change.

The controversy began in November 2009 when a server was breached at the University of East Anglia's Climatic Research Unit, one of the research centres

that constructs various global temperature and precipitation analyses. Two weeks before the Copenhagen Summit on Climate Change, 160 mb of data were copied from that server to various locations on the Internet: more than 1000 emails and 2000 documents, all relating to climate change research between 1996 and 2009. Most of the emails were rather technical and rather boring; but controversy focused on only a few of those.

A few emails, it was alleged by climate change sceptics, demonstrated that climate change scientists were manipulating data in order to claim that climate change was happening. These email correspondences, along with the other data, were used to suggest that dissenting scientific papers were not even being published—they were being rejected in order to promote the climate change cause. Despite the fact that successive inquiries refuted those claims, it was a very damaging episode at a time when international climate change talks were in progress.

A second example of a slightly different order is the Eyjafjallajökull volcanic ash episode, which Pierre-Alain Schieb alludes to in his contribution to this volume. As readers will remember, European air space was closed in April 2010 for just more than a week, and then intermittently thereafter during that European spring. That case was interesting because of the change in attitudes it caused. When the volcano first erupted, conventional precautionary advice was followed: aircraft should not mix with volcanic ash.

That was absolutely uncontentious in the first couple of days; but as Europe started to close more and more of its air space; as airlines started to lose vast sums of money—not just because their planes and staff were grounded, but also because of EU legislation that required them to pay the costs of stranded passengers—the knowledge base upon which the regulators were deciding that aircraft should not under any circumstances mix with volcanic ash began to be contested.

Consequently, airlines started pulling in different scientific experts who would challenge the effects and the levels at which aircraft engines were susceptible to volcanic ash. The meteorological evidence itself also began to be contested. So it was a very interesting case to look at because in a sense it was motivated by business interests that were being seriously damaged at the Easter holidays—an incredibly important time of year for them.

I raise it here because it is another example of how scientific evidence may be contested for other reasons, and sometimes political or indeed business reasons. It did result in a relaxation of the regulations quite soon after the event. I am currently doing research into how volcanic ash affects aeroplanes, and I have discovered that the safe level of ash in which a plane can fly is still contested.

In addition to those political and technical problems, future-proofing the state also involves some very complicated choices about social and economic costs and benefits and how they are distributed. Scarce resources have to be allocated—something that is particularly acute at a time such as this when there is a recession gripping much of the world. How those scarce resources are allocated will centre on very differing views about the role of the state in promoting very different interests, and very different conceptions of equality or inequality, or indeed freedom or restriction of trade.

What is the relative value you give to individual or collective goods? What is the relative value given to present as opposed to future generations? And what value do you place on the environment? Inevitably, there will be ambivalence about the answers to those questions. There may also be vested interests involved; the playing field is never level.

Competing interests also exist. Big organisations may be government stakeholders who have the power to shape the debate about what is taken to be risky and what is not, and how we respond. Consumers and potential victims may have less power, of course. What we do know is that all the different stakeholders and all the different players will have differing objectives at some point in the policy cycle. And these need to be dealt with.

My underlying point is therefore that the decisions being made about the future-proofing of the state are political and ethical as much as they are technical and ‘objective’. Expectations that it is possible to govern the future can lead to strong moral and political imperatives. There are moral imperatives to protect publics, but also there are political imperatives to avoid blame; as Aaron Wildavsky wrote in his book *Searching for Safety* (1988:225), ‘a strategy of anticipation is based on a fear of regret’. In some areas there are contentions that this is of growing importance. And we may actually be encouraged to be risk averse because of politicians’ tendency to engage both in the blame game and in blame avoidance.

So there may be pressures to act as if we are in control—by producing elaborate planning documents, relying on complicated models and trusting in numbers when in fact sometimes we should not trust in those numbers if they do not have a strong evidence base. The danger, of course, is that it leads to the wrong policy choices. Aaron Wildavsky warned about this many years ago in *Searching for Safety*, where he argued for the need to balance anticipation and resilience.

Anticipation—both in regulation and in contingency planning—can, Wildavsky argued, lead to wasted resources because of the high volume of hypothesised risk, much of which may be exaggerated or false predictions. The focus must be rather on selecting appropriate strategies according to the evidence you have. I will dedicate the second half of this chapter to looking at regulation and, to some

extent, disaster mitigation. When is it relevant to use regulation and when is it irrelevant? To answer these questions I will focus on natural disasters, but we also need to take on board other disasters for which we humans are responsible.

It must first be said, however, that expectations of anticipation and control are unusual when it comes to natural hazards. This is often in contrast with the literature on human-made disasters, for there is an acceptance that we cannot prevent what is going to go wrong, but expect that we might mitigate the consequences of natural disasters.

So how much we are able to mitigate, adapt and plan may be overestimated in terms of the expectations that are placed on governments and organisations. Of course there are various forms of mitigation that can prove useful; here I am focusing in particular on the ways in which risk regulation might be used to help mitigate the effects of future disasters; here I am not looking at the later stages.

From this perspective, the forms of mitigation that can prove useful include risk-avoidance strategies. These focus primarily on land-use policies (hazard zones, for example), and they focus in particular on delineating areas where settlements are regulated, ranging from hazard zones where no urban development or planning is permitted at all, through to development laws.

Many examples of these strategies are in use around the world. The State of California has legislation that requires a Natural Hazard Disclosure Statement to be provided by those selling property if it falls within a designated hazard zone. In Japan hazard zones have been created in areas related to disasters such as landslides, and since 2001, new building developments in hazard zones have been restricted. In Japan there have also been attempts to relocate people away from hazard areas, and to develop early warning systems.

In the United Kingdom, too, we have similar examples (such as areas where you need planning permission to build), though thankfully natural disasters are not common in that country, flooding probably being the exception. In fact, despite examples of floods that have been large by UK standards in recent years, I am still asked to sign petitions in my hometown from anti-planning planners lobbying for development in very well-known floodplains. This causes tensions.

Of course, some authors actually believe that the damage caused by natural and manufactured risks is exacerbated by social and special aspects of twenty-first-century living, over and beyond the planning laws. Perrow has recently written a powerful book (2007) in which he says we routinely allow heavy concentrations of economic power, hazards and populations in close proximity to each other, therefore enhancing the likelihood that a disaster, whether human-made or natural, will have a devastating effect. His example is the 2005 Hurricane

Katrina in Louisiana, where both the local population and industrial complexes were located in an area of high natural hazards. We saw its devastating effects. Around the world, however, we will see many examples where such co-location is ongoing and where we are not learning lessons.

Another well-known risk-reduction strategy is risk regulation. Perhaps the best-known examples are building codes—especially in earthquake and flood zones where the damage is primarily to buildings and infrastructure; devastating consequences of code breakdowns follow for populations. Those building controls embrace a variety of risk-regulation tools, design engineering and construction standards. New building codes are quite commonplace, and moreover, we know they are highly effective, especially where they incorporate learning from previous disasters.

Retrospective building upgrades are another example of risk regulation, which involves strengthening programs for existing buildings in areas of natural disasters. This approach is not common, and unsurprisingly so, for retrospective upgrades cost a lot of money. And yet, they do exist. Mexico City introduced a major program for retroactive strengthening following the 1985 earthquake there, as did California following the 1994 North Ridge earthquake. We know that where building codes do not exist, or where they exist but are not enforced, the loss of life is often considerably higher than in areas where those codes exist and are enforced. And I would underline strongly the importance of enforcement. There is no point having the code or a regulation if you decide not to enforce it.

Still on the topic of natural disasters, what happens when the disaster reaches the point where mass evacuations become a distinct possibility? If we look back to the March 2011 Fukushima nuclear meltdown, for instance, the Japanese Government actually considered evacuating Tokyo, a city of 30 million people. It didn't happen, obviously, and you would never wish for mass evacuations, but would it even have been possible? And should a government even attempt to do it?

I think a government should be prepared to do it—what is important is how to go about it. Sometimes the reaction is to put in place very detailed plans about what to do if X happens. The problem is that disasters rarely repeat themselves in precise ways. But we have to be prepared, which is why we emphasise resilience. We have to be prepared for the unexpected to happen and for things not to happen in the ways we expect. So we might have plans; but sometimes those plans are so detailed and they rest on so many assumptions that they may actually be quite dangerous. For this reason we need to think very carefully about what those plans look like, which is why the emphasis on resilience and de-centring and incorporating local populations is so important.

It is important not to rely on natural scientific evidence only, but also on social science evidence. And increasingly these two forms of evidence are being brought together. One example comes from a recent conference in Japan. An academic there had the most beautiful model about what would happen when a tsunami was going to hit Japan: there would be sensors out to sea that would alert people to the problem; alarms would also go off in the city, prompting affected citizens to move to higher ground. What was not in his model, however, was any understanding of how people behave when they hear an alarm: they don't calmly get out of their house and go to safer ground. They worry about their possessions, they worry more about their family, and they even worry about their pets. They don't move in ways in which you expect them to. And sometimes when these alarms go off they can cause panic.

In fact, one of the unintended positive consequences of the 2005 London underground bombing was that initially people thought this was not a terrorist attack, but a power failure. Consequently, people didn't panic; they thought, 'Oh, the underground electricity system must have broken down. We have to get people off the trains because a couple had crashed because of the electricity going.' And people left in a very orderly manner. If people had known or realised the truth, there might have been panic in evacuating that space.

Another crucial point I would like to underline is the importance of information. Governance decisions depend upon information: information about the likelihood of a disaster occurring, and about the probable damage that might occur. And the knowledge base upon which that policy is formulated is crucial. We need to be aware of the limitations of our data. Historical data, as I have already indicated with reference to the climate change example, may be insufficient. In this way, historical data may not be a good predictor of what is to come.

There may also be significantly less information available than we suppose. Sometimes policymakers—but especially the media and the general public—do expect that we are able to do things that we are in fact not able to predict. And it is important to take account of that. It really depends on the sort of risk and the sort of disaster you are involved in: there obviously will be some confidence in the location of a volcano, and we have a fair idea where flooding might happen, but it may be much more difficult to locate with very much certainty the location and occurrence of hurricanes and wildfires, for example.

Take the example of Hurricane Gustav in 2008. Its trajectory and force, which occurred in the same area as Katrina, proved very difficult to predict. Nearly two million people fled the Louisiana coastline in anticipation of a category three to four hurricane. By the time it reached Louisiana, however, it had been downgraded to category two. So those two million people need not have moved.

In hindsight, it raised questions about the policy decision to evacuate and how seriously the next hurricane warnings in Louisiana would be taken. There is a danger, of course, they might be ignored.

In the Australian context, similar difficulties have emerged with respect to bushfires and alarms for bushfires: you may have a risk of an alarm of a bushfire that doesn't then happen—something that can shake confidence. This point takes us to what is an important topic: the risks of risk governance, which may be quite considerable.

Gustav is an example of a false positive, but we also have false negatives. We have alarms or a failure to alarm that may shake public and policymaking confidence in both science and the scientific community. There are examples in the United Kingdom that also affect confidence in governments. It can also lead to the waste of valuable resources, which was one of Wildavsky's key arguments. It is worth noting here that when we talk about these issues, particularly around resources, with respect to developing nations, the sorts of decisions being made are sometimes much starker than we realise. When we in the developed world have a recession it's quite comfortable compared with many parts of the world. And when you discuss natural disasters with respect to some poor nations, the amount of investment you have to put into future-proofing the state imposes a much starker decision.

Of course, there may be unintended consequences of this risk anticipation. There may be risk aversion, fuelled by concerns about blame attribution. Sometimes measures designed to protect populations from natural disasters can become a source of danger in themselves. They may offer false reassurance, or they might fail, and in so doing, increase vulnerability. A case in point is the system of levees in Louisiana whose failure can cause unexpected and possibly larger flooding than would otherwise have occurred.

These strategies may also reduce the ability of organisations and societies to cope with the unexpected, which is why there is much discussion of resilience—meant to be a more flexible and evolved way of responding to disasters. There may also be value conflicts. The classic example here is of course security. Anybody who has recently visited Heathrow Airport will be aware of the incredible level of security travellers are subject to. They have to allow several hours in order to get through the airport—on a bad day, sometimes even longer. Those security measures are in place, of course, because of the threat of terrorist attacks.

And there are big debates about how worthwhile that security is and whether it may contravene human rights. In fact, at Heathrow's Terminal 5 the plans for security initially put in place were much more stringent than those that now exist because of protests and legal fights about the right to take passengers' fingerprints and photographs, let alone the added time en masse that it takes

everyone to get through the airport. The fact is if that security was removed and something went wrong, you would get a very clear notion of what the blame game would look like.

So there are problems in terms of what we put in place. Security at Heathrow may be a harsh example, but harsh examples are important to get to the bottom of what the issue is. Hence, the important message is to look very long and hard at the evidence you have and how robust it is before formulating policy. And though transnational cases are sometimes very useful, transnational effectiveness varies tremendously. Ultimately you must learn your own lessons from your own disasters; but it can also be very useful to share information. It gives you an idea of what the prerequisites might be for future-proofing the state.

Effectiveness, too, varies. What we do learn from looking at global disasters, however, is that one prerequisite is a stable government and good governance systems. Enforcement, as I have already mentioned, is crucial. Corruption can be a major obstacle, as recent earthquakes in Turkey and China have demonstrated. In Sichuan in 2008 engineering and construction quality were major factors contributing to many thousands of deaths, especially of schoolchildren.

Central–local relations are also key to securing good governance. The central government of any state cannot achieve this on its own. It has to do it in partnership with local communities and local governments and business. Buy-in to the legitimacy of what is being done is crucial, as is the recognition of tacit knowledge, particularly tacit local knowledge.

Brian Wynn (1992), for example, has written a helpful academic paper showing that in the post-Chernobyl meltdown phase the UK authorities paid scant attention to the local tacit knowledge of sheep farmers in the Lake District who thought their sheep were not behaving normally, perhaps because of radiation fallout. The central authorities just didn't think this was possible; the farmers were in fact correct. As Wynn demonstrated, paying attention to local knowledge that may not be highly formal or scientific has actually been found to be rather important.

Increasingly, then, future-proofing the state is a multiparty activity. In the United Kingdom recent coastal and river defence schemes have involved the Department for Environment, Food and Rural Affairs (DEFRA), the relevant environment agency, the regulator, local authorities and the insurance industry. The insurance industry plays an increasingly important role of course, and there are a number of different schemes in which the insurance industry can partner with governments in terms of trying to deal with mitigation measures, incentivising people to invest in mitigation measures and helping facilitate post-disaster recovery. The way these scenarios pan out when the insurance

sector is called upon to act may, however, be very different to those that were previously anticipated. Again, this highlights the need to learn from events that have already happened.

Not wishing to end on a gloomy note, I want to emphasise that there are important benefits to be gained from risk regulation, other measures and the mitigation of natural and other disasters. These benefits can be considerable, but they need to be used strategically. It's crucial in deciding policy options to look at the quality and the accuracy of the information you have about the levels and the location of risks. Where levels of certainty are high then more detailed risk-regulation measures and planning are possible and can be put in place. But where they are not, you may simply be wasting resources and giving false assurance. At a macro level, it is important to understand that we can place far too much faith in our ability to govern the future. We need to keep an eye on our limitations and expectations.

And although the state is an important player in future-proofing, we need a mix. We need to empower different participants in the regulatory process, including national and local governments, and businesses and local communities. If this is achieved, future-proofing of the state will be a cooperative endeavour with an emphasis on governance rather than on government.

## Note

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