

The Paradoxes of Risk



2

Two Views of Risk

Risk paradoxes are related to two different ways of viewing risk – the **realist** approach and the **critical** approach. The realist approach assumes risks can be predicted, measured, and managed by experts. It is common in financial, business, regulatory and scientific organizations. It underpins what is considered to be ‘normal’ practice in managing risk – the use of mathematical, scientific methods to calculate and manage risk – and turns unknown, unpredictable hazards into knowable, predictable risks.

In contrast, the critical approach acknowledges that there might be multiple, varied interpretations of what constitutes a risk. It recognizes the uncertain, ambiguous and complex nature of many risks. Accordingly, it may be the best way to deal with novel and systemic risks, with risks that materialize in unexpected ways, or where there is a desire to significantly change how risks are organized in the future.

The two approaches result in opposing or paradoxical actions at each stage in the risk cycle. The risk cycle consists of three modes of organizing risk. The **prospective** mode involves preparing for risk by predicting and assessing harms, hazards and dangers before they arise.

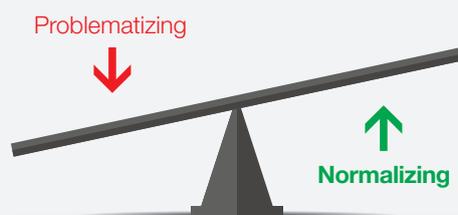
The **real-time** mode involves acting as risks begin to materialize, often unexpectedly and unpredictably. The **retrospective** mode involves investigating incidents where risks have materialized, with the aim of improving how risk will be organized in the future (Figure 1).

An Unbalanced Paradox

The two approaches to risk result in conflicting actions being proposed to organize risk in each of the three modes. However, of these two sets of paradoxical actions, those associated with the realist approach tend to be given greater weight. They are more likely to be taken for granted and are often implemented by default. Even though they might not be the most appropriate way of dealing with the risk in question, they often crowd out the alternative ways of organizing risk associated with the critical approach.

The Paradox of Preparing

When it comes to preventing risk in the **prospective** mode, proponents of the realist approach prepare by *normalizing*. This is the accepted way of organizing risk prospectively – it occurs often without us thinking about it. Normalizing involves the use of well-established techniques, drawn from the scientific discipline of risk analysis, such as enterprise risk management, statistical modeling, ISO SO 31000 and countless others. The aim is to quantify, calculate and measure the risk in order to predict how likely it is to arise, as well as the harm that it will do if it does arise, and then take appropriate risk management measures.



But, experience shows that not all risks can be successfully organized through normalizing, especially when risks are novel and unfamiliar and it is unclear what the hazards are, let alone how to calculate them. In these circumstances, scientific research and mathematical analysis may offer little guidance as to how to manage the risk. This is the case with genetically modified organisms, nanotechnology, endocrine disrupting chemicals, and many other technological risks. The situation is similar with systemic risks where individual risks interact and escalate, causing system-wide damage, as with the Global Financial Crisis. In these situations, information is complex, contingent and contradictory. There are countless permutations, possibilities, feedback loops and complications, which cannot be meaningfully reduced to discrete predictions.

In cases of uncertain and complex risks, normalizing may not be the best way to organize risk, as explained in the following example.

Figure 1:
The Organizational
Risk Cycle



Example 1

The World Health Organization (WHO) points out that we face many uncertain and complex risks in modern society, such as exposure to dangerous chemicals, radiation, hazardous waste and industrial pollutants as well as some everyday products. Sometimes we need to take action before there is unequivocal proof of a harm and before we fully understand how a technology affects individuals. WHO argues that the need for such precautionary action is particularly great in the case of children. There is often less research on children compared to adults as a result of which processes are less well understood. At the same time, the negative impacts on children may be greater because they are still growing and developing. Also, children are more likely to be involuntarily exposed to a greater proportion of the risks because they have little power to avoid them. The fact that a harm has not been scientifically proven does not mean that it does not exist. (Adapted from WHO, 2004.)

The alternative way of organizing risk in this mode is *problematizing*. It involves drawing attention to gaps in our knowledge and challenging expert, scientific knowledge, rather than simply accepting it and taking it for granted. Then, when faced with risks about which knowledge is incomplete or uncertain, preemptive or precautionary action can be taken. Lay knowledge is often useful in addressing risk under these circumstances. Front line workers, technology users, and members of the local community bring additional insights because they are embedded in the real world conditions that give rise to the risk. They are also the individuals most affected by the risk if it does materialize. Consequently,

they may see and understand things that are missed by more distant specialists relying on narrow, de-contextualized, professional expertise. Asbestos and PCBs are two examples where workers were concerned about hazards long before regulators and scientists.

The critical approach to risk recognizes that there are lots of different sources of local knowledge that can supplement and, sometimes, override professional knowledge as indicated in the following example.

Example 2

The International Strategy for Disaster Reduction (ISDR) maintains that indigenous knowledge can help people to prepare for risks associated with a wide range of natural hazards, as well as climate change risks. Indigenous communities use story telling and folklore derived from their ancestral experience to avoid high-risk areas, predict high-risk events, and respond effectively when a risk event does occur. Many of these communities have developed successful lessons and strategies for managing recurring disasters and surviving extreme events that even 'high-tech' instruments are unable to identify. (Adapted from ISDR, 2008.)

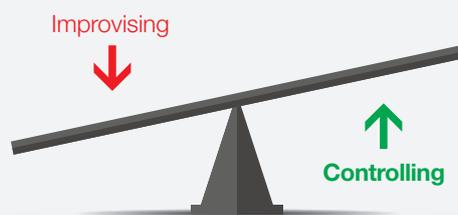
The problem is that organizations wedded to the realist approach tend to ignore local knowledge – seeing it as ‘old wives’ tales’ or dismissing indigenous knowledge as ‘inferior’. Organizations that take the realist approach for granted when preparing for risks may find it difficult to draw on these alternative forms of knowledge to complement professional, expert knowledge, leaving them ill-equipped to deal with uncertain, complex risks.

The Paradox of Acting

In the **real-time** mode, risks are already occurring. It is too late to prepare – individuals have to act. The usual way to respond to risk under these circumstances is to enact institutionalized routines according to a predetermined, centralized command sequence – known as controlling, as in the following example.

Example 3

When SARS hit Toronto, Canada in 2003, the Premier of Ontario declared a provincial health emergency, which triggered specific routines in numerous organizations. He established a Provincial Operations Centre (POC) and a Scientific Advisory Group with political and medical representatives. The POC issued a wide range of directives to hospitals, establishing stringent infection control requirements. Hand washing and symptom screening were instituted for anyone entering a health facility, and staff and visitors were required to wear gloves, gowns and masks. Inside hospitals, infection control procedures were prioritized as physical access to hospitals was restricted, and non-essential workers and visitors were told to stay at home. (Adapted from Basur, 2003.)



But what happens if the risk materializes unexpectedly, in ways not predicted by the protocols and routines? What if it deviates from the expected trajectory or from previous experiences? What if the risk had never been anticipated in the first place? In this situation, controlling practices such as following routines, and top-down commanding may not respond adequately to the immediate demands of the situation. Instead, individuals in the front line may need to rely on intuition, interpret weak signals that provide ambiguous information, and improvise, as in the example below.

Example 4

At an airshow in the UK, things went terribly wrong when a retired pilot and his co-pilot were slowly taxiing down the runway to stop for photographs. Former long-time pilots, the men were not licensed to fly but they were permitted to taxi the plane for the exhibition. By accident the co-pilot hit the throttle sending the 55-ton Victor into the air. As it sped towards a bank of stunned

spectators, the pilot veered the plane away and safely ditched it into a nearby field. The pilot who had not flown a Victor for over 20 years, said 'I was petrified. There wasn't any time to think. Everything was pure instinct. It all happened extremely fast.' He was credited with saving the lives of individuals in the crowd who would have been injured or killed if he had not acted as instinctively and as successfully as he did. (Adapted from The Telegraph, 2009.)

In this case, no one had foreseen the risk that something could go wrong. Luckily, the pilot improvised and the danger was averted. A single individual may find it easy to adapt in the spur of a moment but how does an organization, with all its rules, regulations, hierarchy and bureaucracy, switch from controlling individuals to allowing them to improvise? Controlling and improvising are opposite reactions in a crisis. Improvisation relies on tacit knowledge, intuition and trial and error – and it often means deviating from pre-determined scripts and practiced routines. This can mean that individuals who do improvise may get into trouble for doing so, as shown in Example 5.

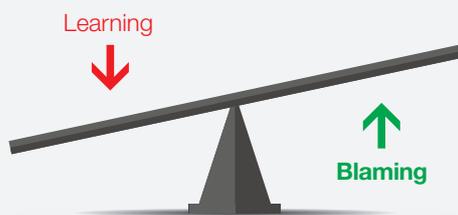
Example 5

In a pipeline accident, a district manager authorized greater discretion for employees at the local site to allow them to respond to local conditions as the incident unfolded. However, he was later blamed for the accident because he failed to use his hierarchical position to tell subordinates exactly what they should do, according to pre-determined plans, scripts and protocols. Subordinates and Board members emphasized the importance of command-and-control – adhering to a clear set of rules and policies. By improvising – and allowing other employees to improvise – the manager was accused of having contributed to the accident. (Adapted from Gephart, 1993.)

The Paradox of Investigating

The **retrospective** mode occurs after a risk has materialized or a crisis has arisen (or been narrowly averted). It involves investigating what happened in order to manage risk more effectively in the future. Inquiries, hearing and reviews are set up after risk incidents to produce an holistic, authoritative, convergent account of

what happened, complete with lessons and recommendations for improving risk assessment and management. These reports are also often designed to reassure diverse stakeholders, to ameliorate anxiety by explaining how and why the negative event occurred, and to attribute responsibility and accountability. To do so, they often involve finding someone to blame.



The paradox between blaming and learning is that the first reinforces the tendency to withhold information that could enhance learning. Anxieties about being blamed make it difficult to recognize, admit and learn from past actions in any significant way. Also, there is often a tendency to blame individuals rather than the system as a whole, and to exonerate senior managers, while censuring their subordinates. As a result, organizations often fail to learn from investigating risk incidents and are prone to repeat the same mistakes over and over again, as in the following example.

Example 6

Research on Australian inquiries into the risks of out-of-home care for children found an inability or unwillingness to recognize child abuse. Even when it was impossible to ignore it, the inquiry reports tended to individualize the problem and blame the victim. This served the interests of the government and non-government institutions that provided child welfare services, but did little to protect the children who were at significant risk of abuse when entrusted into 'care'. The result was that all these inquiries achieved little, which is something the most recent inquiry – the Royal Commission into Institutional Responses to Child Sexual Abuse – is hoping not to repeat. (Adapted from Swain, 2014.)

Organizations wedded to the realist approach to risk are prone to prioritize blame – often because they cannot believe that their realist approach to dealing with risk, which is based on studying, measuring, predicting and planning, could possibly be at fault. If there was a problem, it must be 'human error.' The critical approach, in contrast, may be more attuned to learning – it is willing to undertake a more fundamental critique to ascertain the underlying causes of a risk incident, to imagine alternative, radical solutions, and to experiment with uncertain outcomes, as in the following example.

Example 7

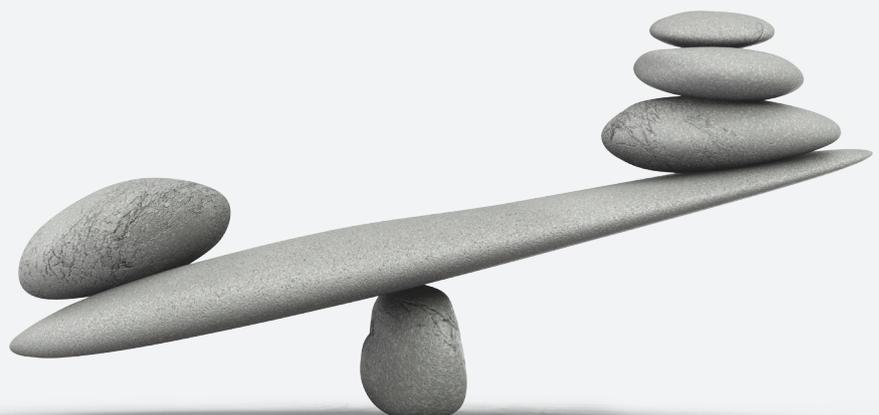
The Port Authority of New York and New Jersey operates extensive transport services including airports, and train and bus terminals. For the Port Authority, the presence of homeless people was just part of the landscape. Then a younger, rowdier element started to pose risks for the public. The Port Authority investigated various incidents and enacted a new risk management strategy, which was to involve the police to move the homeless on. It didn't work. The Port Authority then engaged in more fundamental, critical reflection, trying to understand why the initial solution hadn't worked and to learn how to implement a new way of dealing with the risks. As a result, it realized that a radical new way of dealing with the risks posed by the homeless was needed. So, the Port Authority transformed its approach by making the homeless part of its mission. It set up a Homeless Project Team, financed research into homelessness,

created drop-in centers, and established a single occupancy hotel. By collaborating with a range of other organizations, this 'transportation company' ended up as a provider of services for homeless, as well as an advocate and educator regarding the needs of this marginalized constituency. (From Dutton and Dukerich, 1991.)

Balancing the Paradox

The realist and critical approaches to organizing risk present different sets of practices, each with advantages and disadvantages. While the realist approach may be systematic and provide authoritative action to address some risks events, it is often used where the critical approach might be more effective.

Although balancing two competing practices may seem like an effective way of organizing risk by maximizing the advantages and disadvantages of each, this balance is hard to achieve. In organizing risk, the realist set of practices is likely to dominate. Organizations therefore need to make sure that they have the people and processes in place that provide them with the capacity to problematize as well as normalize, to improvise as well as control, and to learn rather than blame. They also need to be able to recognize when to switch from one set of practices to the other and deploy organizational capabilities to make that switch.



Learning points

Here are six suggestions for improving risk management in your organization by both embracing and re-balancing the paradoxes of risk.

1. Recognize that, despite its dominance, the realist approach to risk is not the only one on which your organization can draw to inform risk management. Consider using a critical approach to shed light on important aspects of risk that are typically overlooked by the realist approach.

2. Embrace the paradox by understanding that *both* the realist and critical approaches are required for effective risk management, even though they often point towards divergent actions. But be sensitive to the fact that this paradox often becomes unbalanced, with the realist approach being taken for granted, and being implemented without consideration of whether it is the most effective way of dealing with risk.

3. Conduct a 'reality check' of the realist approach in your organization. Identify what is considered 'normal' when dealing with risk. What procedures or protocols are enacted automatically and without a great deal of reflection? Does your organization spend a lot of resources measuring and predicting risks? Does your organization immediately resort to predetermined protocols when a risk starts to materialize? When your organization investigates risks, what normally happens – do changes result or is it more a matter of identifying the individuals who are accountable? If so, are you giving the realist approach too much weight?

4. Consider whether you have the necessary processes and protocols in place to deal with risks that are novel and unfamiliar and where it is unclear what the

hazards are, let alone how to calculate them. How would your organization recognize such a risk? How receptive would your risk assessors and managers be to exploring the implications of a risk they can't measure or calculate? Would it go unnoticed? What organizational capabilities do you have in place to problematize such risks? Can you incorporate other forms of knowledge to help your organization 'see' unfamiliar or uncertain risks?

5. Consider how your organization would deal with a risk that materializes unexpectedly, in ways not predicted by existing protocols and routines. What if the risk had never been anticipated in the first place? Would your employees be able to adapt and improvise? What organizational barriers would there be to improvising? How can you cultivate your organization's capability to seek out new sources of risk knowledge, including from so-called non-experts? Can you flatten your organization's risk management hierarchy, providing scope for front-line workers to improvise, and empowering other stakeholders to have a voice on risks that affect them?

6. Be clear about what you are trying to achieve when you investigate risk. Is your organization happy to admit that it has made mistakes? What happens when your organization does identify a mistake – do people learn from it or are people blamed for it? Who gets held accountable – senior managers or front line workers? How can your organization eliminate blaming? Do you have the processes in place to facilitate organizational learning from mistakes? Do you have processes in place to follow up on investigations? How can you create conditions for transformational learning and change?

Acknowledgements

Prepared by Cynthia Hardy, University of Melbourne (chardy@unimelb.edu.au) and Steve Maguire, McGill University (steve.maguire@mcgill.ca).

This research was funded by the Australian Research Council (DP110101764) and the Social Sciences & Humanities Research Council of Canada (435-2014-0256).

For further information and references, please see: "Organizing Risk: Discourse, Power and Riskification" by C. Hardy & S. Maguire, *Academy of Management Review*, 41(1): 80–108, 2016

References

Basrur, S. V. 2003. *Toronto public health's response to the severe acute respiratory syndrome (SARS) outbreak*. Toronto: Board of Health.

Dutton, J. E., & Dukerich, J. M. 1991. Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal*, 34(3): 517-554.

Gee, G. & Stirling, A. 2013. Late lessons from early warnings: improving science and governance under uncertainty and ignorance. pp. 93-120 in *Late lessons from early warnings: science, precaution, innovation, Copenhagen: European Environment Agency*.

Swain, S. 2014. *History of Australian inquiries reviewing institutions providing care for children*, Submission to the Royal Commission into Institutional Responses to Child Sexual Abuse, Australia: www.childabuseroyalcommission.gov.au (accessed December 20, 2015).

World Health Organization. 2004. Dealing with uncertainty – how can the precautionary principle help protect the future of our children? pp. 15-30 in Marco Martuzzi and Joel A. Tickner (eds.) *The precautionary principle: protecting public health, the environment and the future of our children*, World Health Organization.

The Telegraph. 2009. *Retired RAF pilot saves bomber from air show disaster*. <http://www.telegraph.co.uk/news/uknews/6156004/Retired-RAF-pilot-saves-bomber-from-air-show-disaster.html>, September 8, accessed 12.12.2012.