

# DESIGNING RESILIENT INSTITUTIONS FOR TRANSBOUNDARY CRISIS MANAGEMENT: A TIME FOR PUBLIC ADMINISTRATION

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Crises and disasters feature high on political and public agendas around the world. Practitioners wrestle with the challenge to provide protection while maintaining legitimacy. They pine for insights that lie at the heart of public administration: designing effective institutions and preserving transparency; enabling and empowering citizens without undermining a coordinated response; balancing long-term risks against short-term needs; bridging the divide between theory and practice, and between the public and private sectors. But in the debates about designing institutions that protect against transboundary threats and critical infrastructure failures, the public administration community is strangely absent. It has parked itself on the sideline, concerning itself with the routine processes of governance. In this article, we argue that the time has come for public administration scholars to incorporate crisis and disaster management into the main research agendas of the field.

## A NEW NORMAL?

In her recent book *The Social Roots of Risk*, Kathleen Tierney (2014, p. 238) proclaims that 'mega-disasters are the new normal'. True or not, both social scientists and practitioners share a sense that the stability and prosperity of Western society are being undermined (OECD 2003, 2011; Cottey 2007; Perrow 2007; Hutter 2010; Goldin and Mariathan 2014). They describe a combination of increased vulnerabilities, new threats, critical infrastructure failures, eroding institutions, political fragmentation and a lack of response capacities. In the face of these observed developments, unrelenting and threatening as they appear, one might wonder how modern society has, so far, managed to survive.

Anxiety about stability, prosperity and a changing threat environment is, of course, not an exclusively contemporary concern. This very journal was established in the early 1920s with the explicit rationale to contribute to knowledge about the future of government and the role of public administration internationally – at a time when political, social and economic systems were in turmoil. In more recent times, the idea of the 'risk society' (Beck 1992) points to a growing concern with large technical systems, the environment and the declining societal trust in expertise and authority.

In that context, a contemporaneous incarnation of how to manage risks can be found in the 'face-off' between High Reliability scholars such as Todd LaPorte and Paul Schulman and organization theorists such as Charles Perrow and Lee Clarke (Rosenthal and Kouzmin 1994). Perrow's (1984) Normal Accident Theory famously predicted that increased complexity and tight coupling would inevitably produce disasters that cannot be controlled by the organizations that create them. High Reliability scholars point out that some organizations have found ways to reliably work with complex technologies and critical infrastructure failures; the implicit promise holds that organizational practices can be reformed to make accidents less likely (LaPorte 1996; Weick and Sutcliffe 2007; Roe and Schulman 2016).

This debate, in turn, is rooted in the controversy that surrounded Aaron Wildavsky's (1988) advocacy of resilience as a much better strategy to overcome crises and disasters

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than an expensive and ultimately ineffective focus on prevention by anticipation and regulation.

These are fascinating debates, and they are still worth studying. They were not staged in the pages of public administration or public management journals, however. In fact, the public administration community – with a few exceptions aside – has been notably silent on the topic of preparing modern society for threats old and new. True, the international public administration community briefly relaxed its focus on routine processes of governance after the 9/11 (and subsequent) terrorist attacks and the Hurricane Katrina disaster, but this shift has not given rise to a new research agenda.

We argue that the time has come for scholars of public administration to pay more extensive and systematic attention to the challenges of building a resilient society. Two trends, in particular, deserve the attention of scholars in public administration and governance.

First, there is the rise of new threat agents. Emerging technologies such as 3D printing, artificial intelligence, and DNA engineering are likely to create unforeseen and even unimaginable threats. Rapid political developments (for example, power shifts in Asia and the Middle East) and the impact of climate change have altered the threat environment. These developments are already affecting national and transnational politics, and therefore present public administration with urgent questions regarding the political and administrative feasibility of governing particular risks (Lodge and Wegrich 2012; Lodge 2013; Light 2016).

Second, it appears that we are seeing more crises and disasters with transboundary characteristics (Ansell *et al.* 2010; Goldin and Mariathan 2014). Transboundary crises revolve around threats that easily cut across geographical and/or policy boundaries (different examples include the ash crisis, the refugee crisis, the financial breakdown and terrorism). By definition, these crises do not fall within the boundaries of a country or the defined bureaucratic boundaries of a policy sector (Hameiri and Jones 2015). Cyber threats exemplify this notion that traditional borders may simply have become irrelevant for some types of crisis.

In recent years, a series of crises and disasters has demonstrated that the political-administrative systems in place are easily outmatched by new and unforeseen threats. Hurricane Katrina, the financial crisis, and terrorist attacks in capital cities have in common that the processes and structures in place did not detect particular threats, and responses were characterized as lacking timeliness and effectiveness. It is always easy to criticize the performance of traditional bureaucracies with the wisdom of hindsight. But the analysis of crisis cases makes clear that administrative actors and political leaders generally find it very hard to deal with the dynamics of crisis and disaster (for case analyses, see Rosenthal *et al.* 1989, 2001; Helsloot *et al.* 2012).

These case descriptions suggest challenges and issues that appear ubiquitous in large-scale crises and disasters. We summarize these issues here in a set of themes that, we argue, should help to shape a crisis research agenda for public administration scholars.

## **TOWARDS A RESEARCH AGENDA: KEY THEMES IN THE STUDY OF CRISIS MANAGEMENT**

### **Prevention, risk management and regulation**

Contemporary societies are characterized by low risk tolerance. Even seemingly minor incidents can invite public indignation and political recrimination, which, in turn, trigger

'knee-jerk responses' that evoke scorn on the part of academics and experts. The contemporary obsession with risk has resulted in a bureaucratic network of risk watchers, crisis flak-catchers, and high-fee advisers whose job is to protect reputations by shuffling blame away (Rothstein *et al.* 2006; Power 2007; Rothstein and Downer 2012). Risk management has become, some say, a 'new religion' (Bernstein 1996).

A literature on risk regulation has spawned in response (Hood and Jones 1996; Rothstein *et al.* 2013), with some important input from public administration scholars (for example, Hood *et al.* 2001). However, overall the field of public administration has paid only limited attention to the issue of 'risk'. This is remarkable, as 'risk' has become central to contemporary governing; see, for example, the public sector reforms that encourage risk-taking by public servants and embrace risk in policy strategies, the continued transatlantic debates about the precautionary principle and new technologies, or the idea of 'risk-based regulation' as a guiding principle for regulatory activities (Black 2010).

This literature tells us that tools of risk management and regulation face severe limitations when it comes to 'known unknowns'; their pay-off is ill understood in cases of 'unknown unknowns' (Clarke 1999). The art of preparing for unknown threats, then, is based on identifying generic capacities that can be applied to a large number of possible events. But even then one can never be sure that available risk tools apply to *all* possible events.

How tools of risk management and regulation help to prepare for recurring crises and disasters, such as hurricanes, earthquakes, technical break-downs and large-scale industrial accidents, critical infrastructure failures, epidemics, or invasive species, remains an important area for further scholarly attention. We do not really know, for example, how organizations in different sectors, individually and collectively, monitor emerging risks and study near misses. Moreover, more needs to be known about how risk management and regulation are coordinated in the context of multilevel governance systems. One challenge is to understand how particular instruments and approaches interact with particular risks and crises. Another challenge is to understand whether and how these instruments and approaches contribute to, or even generate, their own risks and crises (reflecting a variant defined by Wildavsky (1989, p. 62) as 'policy as its own cause').

### Preparing the strategic level

In the past decade or so, Western states have made great strides in professionalizing their emergency services and in establishing formal contingency management structures within civilian bureaucracies across all levels of government. First responders, in particular, now benefit from fairly extensive training programmes that are reasonably well funded.<sup>2</sup> The emergency services have invested in crisis management skills and resources (means of communication, simulations, decision-making training and suchlike) since the start of the twenty-first century. It has since become increasingly evident that problems in the response to crises are found at the strategic rather than the operational level.

We know which important tasks typically await strategic leaders and their crisis teams (Boin *et al.* 2005): they have to detect from faint signals that something out of the ordinary is developing; and they have to collect, share, analyse and disseminate critical information to form a picture of the situation. Based on their situational assessment, they are required to make critical decisions where needed and organize a coordinated response to implement their decisions. All this has to be communicated in a timely and effective manner, with both internal and external stakeholders. In the aftermath of the crisis, strategic leaders have to account for the response and ensure that the right lessons are learned.

We have a fairly good idea which organizational and individual actions are likely to produce an effective fulfilment of these tasks. But given the limited number of observations (there are simply not that many comparable crises and disasters), we have to treat these insights as hypotheses. What we really do not know is how the effective fulfilment of these tasks contributes to a legitimate handling of the crisis. In other words, we do not really know just how important strategic crisis management is, even when performed well. The importance of political leadership (at all levels) during a crisis is often assumed, but it has not been demonstrated beyond doubt.

Then there is the issue of improvisation. Crises stretch institutions to the limit, rendering standard operating procedures inapplicable and severely testing professional norms. Institutions are thus forced to work outside established routines and practices. This, in turn, means that adaptation and improvisation are critical capacities. But what does improvisation entail, exactly? When working outside the rules is effective, we talk about improvisation. When it is not, we speak of deviation (and discuss the importance of human error). We do not know how to teach leaders and organizations how to adapt and improvise in a responsible manner; it might even be argued that such a demand contradicts the basic characteristics of a bureaucracy, which are stability and normalization through classification.

On the positive side, we should note that public administration scholars have done very interesting and relevant work when it comes to the formal and emergent coordination structures that governments use in times of crisis. Kettl's (2003) analysis of the US coordinative structures, anchored in the Department of Homeland Security, helps to clarify the difficulties of crisis coordination in a particular federal system. Other scholars have concentrated on coordination processes in response networks (Comfort 2006; Kapucu 2006; Moynihan 2009). While these studies are valuable and draw on wider theories of inter-organizational (non-)cooperation, they are not systematically linked to the encompassing challenge of designing resilient societies.

### **Required skills and capacities for crisis leadership**

Leadership continues to be a well-covered topic in public administration research (Van Wart 2013; 't Hart 2014). Yet, the research appears to yield few reliable patterns of leadership behaviour and output. It has produced even fewer solid insights when it comes to crisis leaders (but see Janis 1989). We do not know why leaders are seen to be successful in one crisis (Bush after 9/11) and then said to fail in another (Bush after Katrina) (Boin *et al.* 2010). We do not know which (if any) strategies or behaviours affect the effectiveness and legitimacy of crisis and disaster management.

The executive crisis tasks outlined above provide a good starting point for study. With an eye on the very different types of activities, we can envision the required qualities of decision-making groups that support or operate at the political level. For instance, it would make sense to combine analytical skills with skills for communication, decision-making, and networking (see also Lodge and Wegrich 2014). Just by considering the various skills and capacities that are likely needed, it becomes clear that these skills are unlikely to be found in any one individual (formal leader or someone else). This, in turn, has implications for the selection and training of key personnel at the intersection of politics and administration.

As yet, we know precious little about the requirements for effective performance during crisis. We do not really know how individuals cope with crisis conditions. Psychologists have traditionally paid much attention to individual reactions to stress and uncertainty

(but much less to a combination of both). It is, however, much harder to simulate a perception of threat. The combination of threat, urgency and uncertainty is rarely if ever used in laboratory settings, meaning that there is a dearth of reliable data on the reactions of (trained and untrained) crisis responders. Furthermore, it is questionable whether any laboratory setting can resemble a real crisis (but see Kamphuis *et al.* 2011).

It is worth probing how different leadership skills and strategies relate to different types of crisis. There appears to be a clear difference between acute crises (such as a terrorist attack or a natural disaster) and slowly evolving threats, where both the source of crisis and its consequences pose ongoing, changing and interdependent demands on decision-makers (such as in the case of the financial or refugee crises). The nature of crises will likely have an effect on the importance of certain crisis tasks and the required skills of crisis leaders and their teams.

### **The politics of crisis management**

The management of crises and disasters has long been studied in technical-professional terms, as the skilled execution of plans and procedures to bring a situation back to normal. While this perspective is still dominant in the literature on operational disaster management, it is rapidly being replaced by a perspective that emphasizes the political nature of crises and disasters.

In this view, crises are viewed as potential turning points. A crisis is defined as potentially undermining legitimate orders, as institutions, policies and leaders are seen to be failing to perform the core task of protection ('t Hart 1993). A crisis therefore opens up opportunities for change (Kingdon 1984; Cortell and Peterson 1999). But it also fuels so-called blame games that often have a distorting effect on accountability processes after a crisis (Hood 2011; Resodihardjo *et al.* 2016).

We do not know why some leaders or administrations commit to learning processes, whereas others engage in various types of blame games (Hood *et al.* 2016). We need to know more about how institutional memory is being maintained and communicated across fragmented organizational boundaries, especially in an era of public sector cut-backs. We do not know why some leaders seek a quick return to the status quo as it existed before the crisis, whereas others seize on the opportunity to push for renewal and reform. We do not know why some leaders are successful in implementing their chosen strategy, whereas others fail. In other words, the political aftermath of crises and disasters is fertile research ground.

### **Designing resilience**

In response to the perceived increase in the number of large-scale crises and disasters, both practitioners and academics have called for enhanced societal resilience (Aldrich 2012; Stark 2014; Tierney 2014; Duit 2016). Various policy sectors (especially environment and welfare) have embraced the notion of 'resilience'. The proponents of resilience see unlimited potential, as resilient systems are thought to absorb or bounce back from any shock to the system. They find it difficult, however, to define what resilience actually is (a capacity, a process, an outcome?). It is not always clear how resilience differs from either good governance or crisis management.

In a minimal definition, resilience refers to the capacity of a system to quickly resume critical functions that were affected by a shock to the system. Even if we could agree on such a minimal definition (and no such agreement exists in the literature), it would still prompt the question how resilience can be achieved (Comfort *et al.* 2010). The literature

offers little if any feasible guidance when it comes to strategies or capacities that could make societies (or organizations) more resilient. There clearly is a real research opportunity here.

One might argue that societies can only be resilient if they have legitimate institutions. The idea of the institution encompasses the capacity to preserve what is essential and to adapt when necessary (Selznick 1957). Institutions have to reconcile tensions between conservative inclinations and the necessity to be responsive. The underlying question here is whether there is actually a way of 'engineering' resilience, or whether resilience is the result of random or highly contextual adaptations over time.

### **Building transboundary crisis management capacities**

The financial crisis, the refugee flows and the terrorist attacks in Brussels and Paris have recently demonstrated just how hard it is to manage transboundary crises. In fact, it should now be clear that the nation state and its traditional bureaucratic structures are no match for these crises. What is needed, urgently, are transboundary crisis management capacities that allow nation states to collaborate in a timely, effective and legitimate manner. In the absence of such capacities, the benefits of economic integration will pale against perceived risks, and nation states will seek to withdraw from the complex systems that have brought progress to many.

Such questions do not just require advice and suggestions. They also provide for important theoretical insights, whether they are about the informal assumptions underpinning formal institutional arrangements that, under strain, can quickly come undone, the role of accountability, oversight and performance management systems in facilitating and distorting information flows, or about the interaction between different levels of government, changing societal expectations and volatile politics (all of which are under pressure from expenditure cuts).

In recent years, the international community has begun to build these capacities in international organizations such as the World Health Organization, NATO, the UN, and the EU (Stone and Ladi 2015). The EU, especially, has constructed what could be considered the pillars of a transboundary crisis management system (Boin *et al.* 2013). Practitioners have achieved this without much help or interest from public administration scholars, who have conveniently left EU matters in the hands of the specialized community of EU scholars. Again, such a lack of interest is remarkable as 'societal security' has been at the very heart of learned interest, going back to the day of cameralist thinking. Public administration scholars should seek to work with EU scholars and crisis management scholars to discover under what conditions transboundary crisis management capacities emerge, and how such capacities interact with existing institutions, and understandings of political legitimacy, at the national and sub-national levels.<sup>3</sup>

### **A ROLE FOR PUBLIC ADMINISTRATION**

Public administration scholars study the conditions – processes, structures and strategies (or actions) – that affect the quality of governance. It is generally assumed that the quality of governance directly contributes to the quality of living. Crises and disasters have (usually) a deteriorating effect on the quality of living, but also make it harder to maintain the quality of governance (which, in turn, is related to the effectiveness of the response to crises and disasters). All too often, lives depend on the way governments react to crises and disasters. It follows that public administration scholars should study the causes, characteristics and consequences of crises. They should also study how governments

prepare for and deal with these events, which often happens in collaboration with non-state actors.

Yet public administration scholars have not prioritized the study of crisis and disaster management. They prefer to study routine processes of governance. The study of crisis and disaster management remains the province of specialized journals and a niche group of interdisciplinary academics and practitioners. If crises and disasters are indeed becoming an integral part of the 'new normal', the time has come to bring the study of crises and disasters into the mainstream. This symposium aims to provide a step in that direction.

### **This symposium**

This symposium is a result of an open call for papers on the journal's website. All papers that were submitted were peer-reviewed. The following articles provide important comparative and theoretical insights into the study of crisis management.

Why do similar countries facing the same threat respond differently? To answer this question, Erik Baekkeskov (2016) compared the national response to the 2009 Swine Fever pandemic in the Netherlands and Denmark. Baekkeskov interviewed key actors in both countries, thus considering together the policy histories of the critical decision taken in each country about vaccination. Baekkeskov uncovers the critical role of experts in reaching these decisions, which, in turn, evokes important questions about the legitimacy of crisis decision-making processes.

Tom Christensen, Ole Danielsen, Per Lægreid and Lise Rykkja (2016) focus on the key process of coordination during crises. To study the interplay between the necessities of effective coordination and the characteristics of national systems, the authors compared the crisis coordination structures of six countries. They found that countries offer unique solutions to the challenge of combining contradictory organizational principles that, they posit, are required for crisis coordination.

Helena Hermansson (2016) also discusses the intricacies of crisis coordination, this time in the context of Turkey (a disaster-prone country). She describes the evolution of the Turkish response structure, which is marked by centralization. The article further discusses how the hybrid network of response actors accommodates the tension between decentralization and centralization.

Sandra Resodihardjo, Brendan Carroll, Carola van Eijk and Sanne Maris (2016) studied the accountability processes after two dance festival disasters (one in Holland, one in Germany). They observe that local crisis managers (the mayor and police chief) responded differently to the criticism heaped upon them. The authors seek to understand in this article what factors impact the dynamics of these blame games, focusing in particular on institutional context and accountability rituals.

Andreas Duit (2016) criticizes the emerging conception of resilience in the field of public administration. Resilience is a concept taken from ecology studies. Duit shows that the insights of ecology studies cannot simply be transferred to public administration. He identifies three key shortcomings of social-ecological resilience thinking: (1) deterministic systems models; (2) simplified accounts of politics and policy; and (3) a lack of systematic and generalizable empirical studies.

Wout Broekema (2016) explores the relation between politicization and learning after oil spill disasters. Broekema is particularly interested to study how and what the EU has learned from these disasters. He examined to what extent the content of political claims in the mass media, national parliaments and crisis evaluation reports made their way into EU legislation.

Daniel Aldrich (2016) asks why some coastal communities in Japan recovered quickly after the 2011 Fukushima disaster whereas others lagged behind. His research draws on a new dataset of roughly 40 disaster-affected cities, towns and villages. The best predictor of recovery, Aldrich finds, is the number of powerful politicians representing the area in the national government.

Lan Xue and Xiaoli Lu (2016) analyse China's emergency management system, which has been thoroughly renewed since the SARS crisis. The new system has already been tested by various large-scale crises and disasters. The authors discuss the performance of China's new emergency management system with a special focus on the challenges of sense-making. They conclude that the system will need some further tweaking to enhance its crisis management performance.

### **An opportunity to make an impact**

Harold Laswell (1970) famously declared that the goal of policy research was 'knowledge of' and 'knowledge in' the policy process. For the public administration community, much can be gained from greater knowledge of and in crisis management. The call for more 'knowledge of' crisis management points to the need to develop systematic empirical findings and robust theoretical insights that reflect the context of contemporary governance. The call for more 'knowledge in' crisis management points to the need to engage in the world of practice, by 'opening up' processes and institutions of crisis management, by speaking (often unpalatable) truths to power, and by suggesting ways to tame crisis-induced uncertainty that cannot be found through research frameworks developed for 'stable' times.

Public administration researchers have traditionally aimed to make an impact on the community of practitioners. If there ever was both a need and an opportunity, it is now. Practitioners are wrestling with the challenges that new types of crisis impose upon them. Public administration as a field has much to offer. It contains expertise in the areas of information management, inter-agency coordination, institutional design, public-private partnerships, multilevel governance, public leadership and accountability. It harbours specialized knowledge with regard to natural disaster response, risk management regulation and the politics of crisis management. These discussions are all relevant to building a more resilient society, regardless of specific political, administrative or wider social constraints. The opportunity lies in bringing together the many insights that are found in various subfields of public administration research, and developing analytical tools that facilitate enriched understanding of ways for political and administrative actors to move forward in an effective and legitimate manner.

### **NOTES**

<sup>1</sup> We wish to thank Chris Ansell and Sanneke Kuipers for their constructive feedback on an earlier version of this article. We thank Monica O'Connor for her excellent editorial assistance.

<sup>2</sup> This was one of the key findings of the EU-funded Anvil project, which compared the civil protection systems of 22 European countries (Kuipers *et al.* 2015). For more information, see [www.anvil-project.net](http://www.anvil-project.net)

<sup>3</sup> For an example of such a research effort, see the EU-funded Transcrisis project in which the authors of this article participate. For more information, see [www.transcrisis.eu](http://www.transcrisis.eu)

### **REFERENCES**

- Aldrich, D.P. 2012. *Building Resilience: Social Capital in Post-Disaster Recovery*. Chicago, IL: University of Chicago Press.
- Aldrich, D. 2016. 'It's Who You Know: Factors Driving Recovery from Japan's 11 March 2011 Disaster', *Public Administration*, 94, 2, 399–413.

- Ansell, C., R.A. Boin and A. Keller. 2010. 'Managing Transboundary Crises: Identifying Building Blocks of an Effective Response System', *Journal of Contingencies and Crisis Management*, 18, 4, 195–207.
- Baekkeskov, E. 2016. 'Same Threat, Different Responses: Experts Steering Politicians and Stakeholders in 2009 H1N1 Vaccination Policy-Making', *Public Administration*, 94, 2, 299–315.
- Beck, U. 1992. *Risk Society: Towards a New Modernity*. Thousand Oaks, CA: Sage.
- Bernstein, P. 1996. *Against the Gods: The Remarkable Story of Risk*. New York: John Wiley & Sons.
- Black, J. 2010. 'The Role of Risk in Regulatory Processes', in R. Baldwin, M. Cave and M. Lodge (eds), *Oxford Handbook of Regulation*. Oxford: Oxford University Press, pp. 302–48.
- Boin, A., P. 't Hart, A. McConnell and T. Preston. 2010. 'Leadership Style, Crisis Response and Blame Management: The Case of Hurricane Katrina'. *Public Administration*, 88, 3, 706–23.
- Boin, A., M. Ekengren and M. Rhinard. 2013. *The European Union as Crisis Manager: Patterns and Prospects*. Cambridge: Cambridge University Press.
- Boin, R.A., P. 't Hart, E. Stern and B. Sundelius. 2005. *The Politics of Crisis Management: Public Leadership under Pressure*. Cambridge: Cambridge University Press.
- Broekema, W. 2016. 'Crisis-Induced Learning and Issue Politicization in the EU: The Braer, Sea Empress, Erika and Prestige Oil Spill Disasters', *Public Administration*, 94, 2, 381–98.
- Christensen, T., O.A. Danielsen, P. Læg Reid and L.H. Rykkja. 2016. 'Comparing Coordination Structures for Crisis Management in Six Countries', *Public Administration*, 94, 2, 316–32.
- Clarke, L. 1999. *Mission Improbable: Using Fantasy Documents to Tame Disaster*. Chicago, IL: The University of Chicago Press.
- Comfort, L.C. 2006. 'Inter-Organizational Coordination in Extreme Events: The World Trade Center Attacks, September 11, 2001', *Natural Hazards*, 39, 2, 309–27.
- Comfort, L.C., A. Boin and C. Demchak (eds). 2010. *Designing Resilience: Preparing for Extreme Events*. Pittsburgh, PA: Pittsburgh University Press.
- Cortell, A.P. and S. Peterson. 1999. 'Altered States: Explaining Domestic Institutional Change', *British Journal of Political Science*, 29, 1, 177–203.
- Cottey, A. 2007. *Security in the New Europe*. Basingstoke: Palgrave.
- Duit, A. 2016. 'Resilience Thinking: Lessons for Public Administration', *Public Administration*, 94, 2, 364–80.
- Goldin, I. and M. Mariathan. 2014. *The Butterfly Defect: How Globalization Creates Systemic Risks and What to Do About It*. Princeton, NJ: Princeton University Press.
- Hameiri, S. and L. Jones. 2015. *Governing Borderless Threats: Non-Traditional Security and the Politics of State Transformation*. Cambridge: Cambridge University Press.
- Helsloot, I., R.A. Boin, B. Jacobs and L. Comfort (eds). 2012. *Mega-Crises: Understanding the Prospects, Nature and Characteristics and the Effects of Cataclysmic Events*. Springfield, IL: Charles C. Thomas.
- Hermansson, H.M.L. 2016. 'Disaster Management Collaboration in Turkey: Assessing Progress and Challenges of Hybrid Network Governance', *Public Administration*, 94, 2, 333–49.
- Hood, C. 2011. *The Blame Game: Spin, Bureaucracy, and Self-Preservation in Government*. Princeton, NJ: Princeton University Press.
- Hood, C. and D. Jones (eds). 1996. *Accident and Design*. London: UCL Press.
- Hood, C., W. Jennings and P. Copeland. 2016. 'Blame Avoidance in Comparative Perspective', *Public Administration*, 94, 2, 542–62.
- Hood, C., H. Rothstein and R. Baldwin. 2001. *Government of Risk*. Oxford: Oxford University Press.
- Hutter, B.M. (ed.). 2010. *Anticipating Risks and Organising Risk Regulation*. Cambridge: Cambridge University Press.
- Janis, I.L. 1989. *Crucial Decisions: Leadership in Policymaking and Crisis Management*. New York: The Free Press.
- Kamphuis, W., A.W.K. Gaillard and A.L.W. Vogelaar. 2011. 'The Effects of Physical Threat on Team Performance during Complex Task Processing', *Small Group Research*, 42, 6, 700–29.
- Kapucu, N. 2006. 'Interagency Communication Networks during Emergencies: Boundary Spanners in Multiagency Coordination', *American Review of Public Administration*, 36, 2, 207–25.
- Kettl, D.F. 2003. 'Contingent Coordination: Practical and Theoretical Puzzles for Homeland Security', *American Review of Public Administration*, 33, 3, 253–77.
- Kingdon, J.W. 1984. *Agendas, Alternatives and Public Policies*. Boston, MA: Little, Brown.
- Kuipers, S.L., A. Boin, R. Bossong and H. Hegemann. 2015. 'Building Joint Crisis Management Capacity? Comparing Civil Security Systems in 22 European Countries', *Risk, Hazards & Crisis in Public Policy*, 6, 1, 1–21.
- LaPorte, T.R. 1996. 'High Reliability Organizations: Unlikely, Demanding, and at Risk', *Journal of Contingencies and Crisis Management*, 4, 2, 60–71.
- Laswell, H. 1970. 'The Emerging Conception of the Policy Sciences', *Policy Sciences*, 1, 1, 3–14.
- Light, P. 2016. 'Vision + Action = Faithful Execution', *PS: Political Science & Politics*, 49, 1, 5–20.
- Lodge, M. 2013. 'Crisis, Resources and the State: Executive Politics in the Age of the Depleted State', *Political Studies Review*, 11, 3, 378–90.
- Lodge, M. and K. Wegrich. 2012. *Managing Regulation*. Basingstoke: Palgrave.

- Lodge, M. and K. Wegrich. 2014. 'Introduction: Governance Innovation, Administrative Capacities, and Policy Instruments', in M. Lodge and K. Wegrich (eds), *Problem-Solving Capacity of the Modern State*. Oxford: Oxford University Press, pp. 1–22.
- Lu, X. and L. Xue. 2016. 'Managing the Unexpected: Sense-Making in the Chinese Emergency Management System', *Public Administration*, 94, 2, 414–19.
- Moynihán, D.P. 2009. 'The Network Governance of Crisis Response: Case Studies of Incident Command Systems', *Journal of Public Administration Research and Theory*, 19, 4, 895–915.
- OECD. 2003. *Emerging Risks in the 21st Century: An Agenda for Action*. Paris: OECD.
- OECD. 2011. *Future Shocks*. Paris: OECD.
- Perrow, C. 1984. *Normal Accidents: Living with High-Risk Technologies*. New York: Basic Books.
- Perrow, C. 2007. *The Next Catastrophe: Reducing our Vulnerabilities to Natural, Industrial, and Terrorist Disasters*. Princeton, NJ: Princeton University Press.
- Power, M. 2007. *Organized Uncertainty: Designing a World of Risk Management*. Oxford: Oxford University Press.
- Resodihardjo, S.L., B.J. Carroll, C.J.A. Van Eijk and S. Maris. 2016. 'Why Traditional Responses to Blame Games Fail: The Importance of Context, Rituals and Sub-Blame Games in the Face of Raves Gone Wrong', *Public Administration*, 94, 2, 305–63.
- Roe, E. and P.R. Schulman. 2016. *Reliability and Risk: The Challenge of Managing Interconnected Infrastructures*. Stanford, CA: Stanford University Press.
- Rosenthal, U. and A. Kouzmin (eds). 1994. 'Systems, Organizations and the Limits of Safety: A Symposium', *Journal of Contingencies and Crisis Management*, 2, 4, 205–40.
- Rosenthal, U., M. Charles and P. 't Hart (eds). 1989. *Coping with Crises*. Springfield, IL: Charles C. Thomas.
- Rosenthal, U., R.A. Boin and L. Comfort (eds). 2001. *Managing Crises: Threats, Dilemmas, Opportunities*. Springfield, IL: Charles C. Thomas.
- Rothstein, H. and J. Downer. 2012. "'Renewing Defra": Exploring the Emergence of Risk-Based Policymaking in UK Central Government', *Public Administration*, 90, 3, 781–99.
- Rothstein, H., M. Huber and G. Gaskell. 2006. 'A Theory of Risk Colonisation', *Economy & Society*, 35, 1, 91–112.
- Rothstein, H., O. Borraz and M. Huber. 2013. 'Risk and the Limits of Governance', *Regulation & Governance*, 7, 2, 215–35.
- Selznick, P. 1957. *Leadership in Administration: A Sociological Interpretation*. Los Angeles, CA: University of California Press.
- Stark, A. 2014. 'Bureaucratic Values and Resilience: An Exploration of Crisis Management Adaptation', *Public Administration*, 92, 3, 692–706.
- Stone, D. and S. Ladi. 2015. 'Global Public Policy and Transnational Administration', *Public Administration*, 93, 4, 839–55.
- 't Hart, P. 1993. 'Symbols, Rituals and Power: The Lost Dimensions of Crisis Management', *Journal of Contingencies and Crisis Management*, 1, 1, 36–50.
- 't Hart, P. 2013. 'After Fukushima: Reflections on Risk and Institutional Learning in an Era of Mega-Crises', *Public Administration*, 91, 1, 101–13.
- 't Hart, P. 2014. *Understanding Public Leadership*. Basingstoke: Palgrave Macmillan.
- Tierney, K. 2014. *The Social Roots of Risk: Producing Disasters, Promoting Resilience*. Stanford, CA: Stanford University Press.
- Van Wart, M. 2013. 'Administrative Leadership Theory: A Reassessment after 10 Years', *Public Administration*, 91, 3, 521–43.
- Weick, K.E. and K.M. Sutcliffe. 2007. *Managing the Unexpected: Resilient Performance in an Age of Uncertainty*. London: John Wiley & Sons.
- Wildavsky, A. 1988. *Searching for Safety*. New Brunswick, NJ: Transaction Books.
- Wildavsky, A. 1989. *Speaking Truth to Power*. New Brunswick, NJ: Transaction Books.