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editorial

This issue of *risk&regulation* is devoted to the theme of capacity. Capacity – the availability of resources to detect, assess and affect in meaningful ways – is a central theme in contemporary debates about risk and regulation. A turn towards an analysis of 'capacity' underscores not only that all regulatory activity requires discretionary judgement. It also puts the spotlight on questions about the prerequisites for regulatory interventions, and the limitations of regulation.

This edition of *risk&regulation* touches on a number of issues that surround academic debates on capacity. One dimension of any capacity-related debate concerns the rise of new technologies and their impact on the knowledge and expertise required to regulate such technologies. Alex Griffiths and Meghan Leaver discuss the use of social media as a means of assessing quality among health providers. Irina Brass and colleagues, as well as Michael Haba, note how new information technologies trigger demands for tricky regulatory trade-offs, especially as failures might have severe implications for multiple transnational infrastructures.

Another dimension relates to the capacity required for the deployment of such new technologies in regulation. The article by Jacob Reilley and Tobias Scheytt, members of the international QUAD (quantification, administrative capacity and democracy) project team, highlights the evolution of quantification in the German health sector and associated consequences and possibilities for administrative capacities. Similarly, the rise and use of 'behavioural insights' raises questions about how these techniques are incorporated into the everyday life of bureaucracy, as reflected in the joint work by the OECD and **carr** involving Faisal Naru, Filippo Cavassini and Martin Lodge.

A third dimension relates to questions concerning the exercise of regulatory authority. Suzanne McCarthy highlights how a regime based on self-regulation faces existential challenges when established understandings regarding political advertising are coming under pressure. The need to develop regulatory capacity is also a central theme in the joint work between **carr** and RAND Europe on the development of infrastructure regulation in Brazil. The findings of this work, funded by the UK Foreign Office's Prosperity Fund, are outlined by Chris van Stolk, Daniel Schweppenstedde, Julia Batistella-Machado and Martin Lodge. The exercise of authority cannot be merely understood as formal acts. Rebecca Elliott highlights how emotional responses to calculations of risk with regards to natural hazards should feature more extensively in debates about risk.

Finally, there is the question of the limits of capacity. As outlined by Max Weber, the exercise of authority pre-supposes the acceptance by affected populations. Debates about the legitimacy and future shape of the European Union fundamentally affect the ways in which transboundary risks are governed. Lydie Cabane and Martin Lodge, by drawing on their Horizon2020-funded TransCrisis work, note how critical member state engagement is for effective EU governance and how some contemporary dynamics do not bode well for effective and legitimate transboundary crisis management. Bridget Hutter explores limits of capacity when it comes to debates regarding failure.

Questions about how to enhance capacity will always remain a highly contested terrain, raising queries as to who should be provided with resources to exercise authority over other parties (and who should pay for them). It also raises the question whether (regulatory) 'capacity' should be desired at all – after all, for some the spectre of capacity-rich regulators is associated with red tape and over-zealotry. For others, the lack of capacity is an indicator of regulatory capture.

Debates about developing and maintaining capacity are also central to the management of research units, such as **carr**. Contributions in this issue highlight that it is not just important to have in-house capacity to develop and contribute to leading-edge research in risk and regulation. In addition, it is essential to build on and enjoy linkages with other 'external' parties. We are grateful to all our contributors for supporting **carr** in such generous ways. Without this support, it would be impossible to continue **carr**'s role as a leading international venue for debates in risk and regulation. We hope you enjoy this issue of *risk&regulation*. **Martin Lodge & Andrea Mennicken**

Capacity in regulation

Martin Lodge and **Andrea Mennicken** explore why a turn to issues of regulatory capacity is of mounting importance

Regulatory debates are often dominated by questions about appropriate techniques and approaches. Without claiming to be 'behaviourally informed' or being 'risk-based', no regulatory proposal is likely to make it from the drawing board to the messy world at the front level. Debates have also focused on institutional architectures, namely, whether jurisdictional boundaries are 'fit for purpose' in view of changing business and consumer markets.

Both of these debates are, of course, important. However, what is often left behind are questions about regulatory capacity. Yet, such capacity related debates are of mounting significance, especially as regulators increasingly realize that formal statutory provisions offer only limited insight into questions of perceived agency 'performance'. The old orthodoxy that regulatory 'independence' is essential for high performance has come under criticism as regulators with similar statutory powers have been shown to perform rather differently. Most importantly, perceived independence is related to perceived regulatory capacity, and therefore reputation, rather than formal statutory provisions.

How then does a capacity-related concern change the parameters for debates about regulation – in general and with respect to particular domains? One key shift is that it focuses debates on underlying pre-requisites for particular interventions to work. These resources relate not only to questions about financing – both in terms of level and stability, but also to organizational firepower (e.g. in terms of technical skills and sheer numbers of staff) and the ability to access, process and disseminate relevant information.

Secondly, attention is drawn to different types of capacities that regulatory regimes need to develop – and to the interplay across these different types. For regulatory regimes – institutional arrangements that formally and informally link state and non-state organizations together in the production of regulatory effects – to perform, a range of different capacities need to be present. Building on the work from Lodge, together with **carr** research associate Kai Wegrich (Lodge and Wegrich 2014), we can distinguish four different types of regulatory capacity:

- Analytical capacity: the ability to diagnose trends, to understand developments and forecast future developments
- Delivery capacity: the capacity to organize regulatory processes
- Oversight capacity: the ability to conduct effective monitoring and enforcement
- Coordination capacity: the capacity to bring together dispersed stakeholders and other agencies in decision-making.

There are distinct ways to think about regulatory capacity when conceptualized in this way. One is to reflect on organizational dynamics and resources. The above typology asks regulatory organizations to consider what kind of capacities they have, what 'deficits' might exist and what kind of capacity prerequisites need to be in place to ensure effective regulatory interventions at organizational level. Another way is to consider these capacities at the level of the individual, working for the regulatory organization. No individual is likely to be 'best in world' across all four capacities, so it raises questions about the kind of competencies that regulatory agencies ought to attract and how they wish to reward them.

A final, third, way of considering capacities is to consider their distribution at the regime level, namely across dispersed sets of regulatory actors involved in information gathering, standard setting and behaviour modification. These generic regulatory activities often involve different, overlapping sets of actors, across levels of government, and across state and non-state boundaries. In view of the reality of dispersed regulatory governance, identifying what capacities exist across organizations, and how to assemble them remains a central challenge.

Furthermore, a concern with capacity asks us to take note of potential impediments for capacity building. One is political uncertainty; another concerns legal uncertainties; a third relates to uncertainties with regards to the available funding to develop the above named capacities; and a fourth, final one to organizational and system-wide attention barriers (e.g. through intra and interorganizational silo building). Especially in the literature on development and regulation, such potential impediments to regulatory capacity have been widely diagnosed. The traditional answer to these challenges has been to rely on 'low capacity' devices (such as non-discretionary long-term contracts). However, such low capacity devices have hardly provided a satisfactory answer to questions of system-wide regulatory development and stability. Moreover, low capacity devices, such as non-discretionary contracts, often lack flexibility and are inadequate for the building of competent adjustment capacity, for example in view of continuous demands for 'updating' and renegotiation, the need to address new trends that were unforeseen, as well as changes in societal demands and funding (as also noted in this issue's article on Brazil and the importance of 'disciplined discretion').

Regulatory capacity is only likely to evolve in relatively stable political and legal climates (see here also the recent challenges posed to regulation by the uncertainties accompanying Brexit). It is highly unlikely that capacity-rich regulation can exist where any regulatory decision can be undermined by direct appeals to political masters, or frustrated by long-term haggling in the court system. Likewise, transboundary issues pose particular challenges for regulation and the development of regulatory capacity. As this issue's article on transboundary crisis management in the EU highlights, regulatory capacity in this context is critically dependent on multiple actors devoting resources and motivation to particular activities. In such a system, where one unit's failure may have systemic repercussions in other jurisdictions, questions about how to develop coordination capacity become even more problematic and salient, and they raise questions about the roles and relevance of 'national sovereignty' in public administration.

Finally, there is the question about legitimacy. What capacities (regulatory powers) are 'acceptable' in the eye of political, industry and public opinion? After all, limiting regulatory capacity might be exactly what is required given complaints about red tape, risk-averse bureaucrats and the need to support individual enterprise. Similarly, in an age of depleted public budgets and spending reductions for public services, advocating a reform agenda for 'capacity-rich' regulation might also appear problematic.

So what should be done about regulatory capacity? One possibility would be to rely on individual ad hoc adjustments of regulation. Such, largely reactive responses would focus on those areas where public salience is most interested, but it would not consider the long-term and would also not offer a thorough consideration of the kind of future (e.g. analytical) capacities that might be required for the continued support of regulatory frameworks (see here also the articles in this issue on the regulation of new information technologies). Another recipe would be to rely on an overall framework for capacity enrichment. Such a central initiative would face the inherent reluctance of different regulatory actors to be 'organized' by an inevitably control-interested central government department. It would also most likely lead to an emphasis on broad themes over bespoke capacity requirements (i.e., concrete regulatory action guiding); and it would likely lack interest in transboundary questions, particularly in those of a transnational nature. Finally, there is the option to rely less on formal centralization and more on informal cooperation, exchange and mutual learning. Here, questions such as peer review learning and the need to build and maintain collaborative linkages across organizations would be central. However, such initiatives need active nurturing and resources, including financial resources from the centre (i.e. government), and they usually fossilize quickly in those areas deemed 'irrelevant' to the central mission of individual organizations and ministries.

In sum, debating capacity in regulation is of fundamental importance. It raises questions about the kind of state we are living in; it puts the spotlight on organizations' attempts at developing their reputation for capacity, and it emphasizes the importance of considering underlying prerequisites before succumbing to the hype of modern high intelligence regulatory approaches.

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Predicting inspection outcomes using 'patient voice'

Alex Griffiths and **Meghan Leaver** explore the online world to identify good and bad care

Regulators, it seems, are always being asked to do more with less. Politicians and regulators alike have frequently asserted that this will be possible by 'making better use of data' to target resources effectively. As regulators' risk models come under greater scrutiny however, there is a growing realization of their limitations; the aggregation of administrative data, for example waiting times, mortality rates, and staff turnover in the English National Health Service (NHS), has systematically failed to identify poorly performing Hospital Trusts (Francis, 2013; Griffiths et al., 2016). With the demands on regulators, or the constraints on their budgets, unlikely to go away anytime soon, what can regulators do?

Research conducted at **carr** in cooperation with the LSE's Department of Psychological and Behavioural Science provides one possible solution. Following recommendations by the 2013 Francis Inquiry that patient voice be better monitored in the NHS to avoid a repeat of the scandal at Mid Staffs, we sought to investigate whether the vast amount of disparate feedback posted online could help identify good and bad care, and help regulators prioritize their interventions. It can.

Over the past year we have gathered more than 1.5 million tweets, Facebook posts and comments posted on dedicated patient feedback websites directly concerning NHS hospitals and the Trusts that they comprise. By automatically identifying, classifying and scoring relevant information on a universal scale, and then combining those pieces of information, we have been able to form a 'collective judgement' for each hospital on any given date. There is a strong, statistically significant relationship between the collective judgement on the start date of inspections by the Care Quality Commission (CQC) and the ratings awarded at the end of those inspections. This is true for both individual NHS hospitals and the larger 'Trust' groupings to which they belong.

A key question at this point is how can data generated by people with no clinical expertise produce a meaningful judgement that matches that of the large number of professional inspectors, onsite analysts, 'experts by experience' and clinicians that constitute a CQC inspection team? The answer to that question, oddly, comes from the 1906 West of England Fat Stock and Poultry Exhibition. There, the statistician Francis Galton came across a competition to guess the butchered weight of a live ox. There were 800 competitors, most of whom were not experts in cattle or butchery, submitting their guesses on numbered cards. With the competition over and the weight of the butchered ox determined as 1,198 lbs, Galton borrowed the 800 entry slips to analyse the guesses. Much to his surprise, the average of those guesses was 1,197 lbs, essentially perfect.

What Galton had stumbled upon was what is now referred to as the 'Wisdom of Crowds'. The phenomenon means that, under the right circumstances, groups can be remarkably insightful. This can be the case even if the majority of people within a group are not especially well informed or rational (Surowiecki, 2004). Whilst we as individuals seldom have all the necessary facts to make an accurate assessment, and are subject to numerous heuristics and biases, when our individual assessments are aggregated in the right way, our collective assessment is often highly accurate.

Although the theory behind identifying poor quality care with patient feedback is simple, the practicalities are not. Whilst Galton had a manageable number of entry slips, all featuring an estimate that related solely to the competition he was interested in on a specific date, we faced the equivalent of an unknown but vast number of entry slips, only some of which contain relevant information, relating to hundreds of competitions over a number of years. There have, therefore, been a number of practical challenges to overcome.

The first challenge has been accessing, updating and storing the data with each source presenting its own unique problems. The second challenge lay in sorting the relevant from the irrelevant comments. The majority of tweets mentioning hospitals relate not to quality of care they provide, but to recruitment, public information and self-promotion. One in every 1,500 tweets concerns cake. After a significant investment of time and expertise and the use of sufficiently equipped hardware, we developed an algorithm which identifies with 95.9% accuracy whether a tweet concerns one of four aspects of care quality, or does not concern the quality of care at all. Without this advanced automation, it would not be possible to consistently and economically identify the relevant patient feedback, and hence derive a meaningful collective judgement on the quality of care.

The third challenge has been how to extract meaning from the data. Continuing with the Twitter example, we knew which tweets related to specific aspects of the quality of care at a given hospital or Trust, but not whether it was positive or negative, or to what extent. Again, due to the ever growing volume of data, this scoring cannot realistically be done by humans. A second algorithm was therefore developed to read and score the data from disparate sources on the same scale. Only then, with the relevant comments identified and scored on a unified scale, could the weighted, moving average of their sentiment be calculated to derive a 'collective judgement' on the quality of care at each hospital on any given date.

What, then, does the successful, automated use of patient voice mean for regulators? The key message is that, under the right circumstances, high volume, third party data can succeed where traditional administrative data has proved ineffective and help to target limited resource. Furthermore, it may allow regulators to not only better target their resources towards individual regulatees, but focus more precisely on specific areas of concern within those regulatees. Whereas administrative data tends to be reported at the level of overarching hospital trust, university or energy supplier for example – large, diverse groupings which can contain significant internal variation in quality – 'crowds' may be willing and able to target activity at a more granular level such as hospital, academic department or business area. Moreover, without the ability to trigger inspections ourselves we are unable to test the potential of declining collective judgements to identify and prevent problems before they become more serious, and reacting quickly to collective judgement may also serve to prevent, rather than simply identify, poor performance. The use of high volume, third party data may therefore have significant benefits for overburdened regulators.

The findings also raise a number of secondary questions for regulators and their own capacities. Firstly, as ever increasing volumes of decentralized information become available, effective risk monitoring and resource prioritization may require fewer analysts pouring over spreadsheets, but a smaller number of more highly skilled data scientists instead. Secondly, if regulators fail to set the trend in this area, they may face being delegitimized by private sector organizations stealing a march on the effective identification of regulatory risks. Thirdly, when 'service users' can, as a whole, successfully identify poor care, even in a field as complex as acute healthcare, regulators may face a tougher challenge convincing others of their value.

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Regulatory crisis

Bridget Hutter and **Sally Lloyd-Bostock** explore how disasters, crises and regulation interrelate

Disasters and crises can undoubtedly have major regulatory impact, in both the immediate and the longer term, especially in a world where regulators have become useful targets of blame when things go wrong. But the interrelationships are extremely complicated. By no means do all disasters become crises for regulators responsible for the area in which a disaster occurs. Not all disasters lead to regulatory challenge let alone reform. Furthermore, agendas and interpretations shift as disasters unfold, and regulators themselves become players shaping the trajectory of a wider crisis or disaster. Interpreting and responding to disasters and crises is fluid, embedded in social environments, and open to multiple influences, some not readily visible. 'Regulatory crisis' provides a conceptual tool for interrogating these interrelationships. Looking at regulatory crisis as a phenomenon in its own right we can ask what leads to the construction of a risk event as critical for regulation? We can start to disentangle the variety of factors and processes which determine how major crises and disasters may or may not challenge and reshape regulation and the role played by regulation and regulatory agencies in disaster scenarios.

In our book, *Regulatory Crisis: negotiating the consequences of risk, disasters and crises,* a detailed examination of selected cases helps us to examine some of the factors that contribute to, and shape, regulatory crises following major risk events. Case histories illustrate the varied forms such crises can take, but also highlight characteristics that are shared across very different cases and regulatory contexts. They show how features of a regulatory organization, its relationships with other organizations, and the broader environments within which it operates, can combine to create a crisis for regulators. Close analysis challenges some current ideas about risk and disaster. It reveals that failure to manage risks may not be central or even necessary for a regulatory crisis to emerge from a disaster, and that the impacts for the regulator can take on a life detached from the precipitating disaster. Competition to control interpretations and narratives has growing influence as time goes on, and this is reflected in formal sense making. The eventual impacts of disasters on regulation can be very loosely connected to the original risk event, with potential implications for learning from risk events.

The case of Dr Shipman illustrates some of these points. Shipman was a UK general practitioner who murdered a large number of patients in his care between 1974 when he entered practice and 1998 when he was finally exposed. The case became a regulatory crisis for the General Medical Council (GMC). Once Shipman was exposed the spotlight was quickly turned onto the GMC as the regulator of the medical profession with responsibility for ensuring that doctors registered to practice were fit to do so. However, failure to ensure that Shipman was 'fit to practise' does not emerge as the main reason for the regulatory crisis for the GMC. Rather, the case became a focusing event for a long-standing 'crisis by ignorance' as the GMC failed to satisfy persistent calls for adaptation. The GMC had increasingly been criticized as over-protective of doctors and had been operating in a climate of growing dissatisfaction for some years. Extensive reforms had been proposed but progress on them was perceived to be slow. 'Use' of the crisis to forward a reform agenda put into circulation a narrative blaming the GMC. Indeed, the eventual Shipman Inquiry exonerated the GMC from blame – but nonetheless criticized the GMC strongly and at length.

The eruption of the Icelandic volcano Eyjafjallajökull in April 2010 illustrates the role of regulation itself in the genesis and course of a regulatory crisis, and the way in which international regulatory networks can tie the hands of a national regulator such as the UK Civil Aviation Authority (CAA). The prescriptions of regulation had enormous consequences for the aviation industry, leading to closures of airspace across the UK and most of Europe, with huge and mounting economic impact. The harm was financial rather than physical. The Eyjafjallajökull eruption had contaminated some of busiest airspace in the world during a peak holiday period, and the ash cloud was predicted to linger. Diverting around it (the response envisaged by international aviation regulation) was not an option. The crisis was fuelled by interest group activity and the production pressure to resume flying became extremely high. This meant recasting the risk as the regulators' precautionary stance rather than as a safety issue. The event tested the existing regulatory approach to breaking point and gave rise to a second-order crisis – a crisis of regulation. But we also see how the regulatory crisis was minimized by the response of the regulator and how blaming of a regulator can fizzle out. The CAA became the target of direct and vigorous blame in the media, but the case illustrates how blaming is used as a tool to promote particular interests, dropping out of use when pursuit of those interests dies down. Skilful handling of the crisis by the regulator was also evident. Senior members of the CAA with a background in aircraft engineering were actively coordinating and working with others they had identified as interested parties to explore the possibilities for agreement on a less precautionary response. They managed their public profile and relationships with government, avoiding long-term fallout, containing the crisis, and eventually restoring their legitimacy.

Our cases underline the importance of regulators being flexible and responsive and remaining sensitive to their environments. Contemporary societies nourish expectations that regulatory authorities should be able to anticipate and control risks and have in place plans should they fail. The cases show how malleable these expectations are. The way they play out in a particular case depends on the particular regulatory climate and the vulnerability of regulators to reputational damage and blame. We also need to understand how chance and opportunism play a role in crisis trajectories, especially in long-lasting crises. The relationship between regulation and governments can be crucial. For example, the financial crisis of 2007 and the BSE crisis highlight the vulnerability of regulators following a change of government. Governments have the power to give and to take away. They can create and abolish regulatory agencies and change their resources. Disasters can become opportunities for governments to initiate change for political reasons. Conversely, the 7/7 London bombings illustrate how a regulatory crisis can lead to government protection of the regulator (in this case MI5) and to increased resources.

Rationales for reform might lead us to question how well adapted regulatory regimes are to controlling risks. The construction of a risk event as critical for regulation implies a disruption beyond the sensibilities of existing regulation – a disruption that reveals the limits of regulatory anticipation and management. Through the lens of disasters we can learn more about risk regulation, and the boundaries of regulation and risk management.

This article is based on Bridget Hutter and Sally Lloyd-Bostock's book *Regulatory Crisis: negotiating the consequences of risk, disasters and crises,* Cambridge University Press, May 2017.

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Regulating IoT: enabling or disabling the capacity of the Internet of Things?

Irina Brass, **Leonie Tanczer**, **Madeline Carr** and **Jason Blackstock** consider privacy and security challenges

The Internet of Things (IoT) is the technology buzzword of the day. The number of network-connected devices has now exceeded the world population, and recent market research estimates that 8.4 billion connected 'things' will be in use in 2017 (Gartner, 2017). IoT technologies add an online identity to objects that have traditionally had only a physical identity – from fridges, to cars to power plants – enabling these objects to be virtually sensed, analysed and even actuated.

Governments around the world realize the socio-economic potential of IoT, and are eagerly exploring how their economies might harness the benefits from live data flows and customization across sectors as diverse as healthcare, manufacturing, infrastructure management and utilities (OECD, 2016). In 2015, the UK Government set its aspiration to become 'a world leader in the development and implementation of the Internet of Things' (Government Office for Science, 2014: 6). However, it also acknowledged that IoT raises unique challenges to data protection and the security of information systems and networks. These concerns are hardly unique to the UK. Connected 'things' are being manufactured and traded around the world. In most cases today, devices are built with extremely limited security specifications designed into their hardware or software, raising significant concerns about the security of rapidly expanding IoT networks.

Below we explore the regulatory approaches emerging in the EU and US in response to the security and privacy challenges of IoT. We find that the preference has, thus far at least, been for light touch regulation, though American and European approaches might soon diverge. Regardless, in order to effectively manage risks and enable societal and economic benefits, we argue governments like the UK need to develop new institutional coordination models that can enable a broad 'culture of security' for IoT across public and private sectors alike.

Responses to the privacy and security challenges of IoT

Limited security specifications in IoT devices signal a market failure that could require regulatory intervention. Manufacturers have limited economic incentives to include adequate security specifications in their IoT devices, as these can bring up costs and reduce the battery life of their products. In a recent example in 2016, IoT devices located around the world were used as launch platforms for DDoS attacks against two established Domain Name Servers – OVH and Dyn – resulting in a temporary interruption of their services. The devices were compromised by overriding easily guessable passwords set by their manufacturers (Imperva, 2016).

In the EU and the US, the response to such vulnerabilities has been to promote the principle of 'security by design' (EC, 2014) for manufacturers of IoT devices and, gradually, to extend this principle to 'security by default' (US Department of Homeland Security, 2016) and 'data protection by design and by default' (EU, 2016) for the wider management of data, information systems and networks.

There are, however, a number of challenges to implementing these principles. Firstly, they refer to a wide array of existing and emerging standards in cybersecurity and data protection, ranging from technical specifications for encryption at device level to cybersecurity risk management at the organizational level. Thus, at the moment, the landscape for privacy and security standards that apply to IoT is increasingly complex, and the market has so far indicated limited convergence towards a core set of standards to support these principles. Secondly, given the wide application of IoT, standards are being developed within, rather than across, sectoral verticals. Moreover, at the moment, these principles are non-binding in both the EU and the US, highlighting the 'light touch' regulatory approach to IoT that makes compliance with a responsible level of security and data protection difficult to ensure.

There are indications, though, that the regulatory pathways for IoT in the EU and the US might soon diverge. In the EU, the General Data Protection Regulation (2016/679), which will apply from 2018, makes 'data protection by design and by default' a mandatory requirement. Given that guidelines for applying these principles have not yet been formulated, it is not clear whether their ambit will be large enough to encompass the security by design challenges of IoT. If guidelines for data protection by design and by default are not formulated to encompass the principle of 'security by design,' then it might take longer for the EU to pass new legislation for an IoT certification scheme, as recently signalled by the European Commission (EurActiv, 2016).

In the US, there are indications that the regulatory approach to IoT will remain light touch. The Federal Trade Commission and the Department for Homeland Security have already promoted a number of non-binding guidelines and best practices for securing IoT, making reference to the framework standards designed by the National Institute of Standards and Technology (NIST). The NIST (2016) standards point towards a more systemic, end-to-end approach to securing IoT as part of the wider management of cybersecurity risk in critical infrastructure. The emphasis is currently on 'engineering trust' in cyber physical systems rather than developing separate rules for data protection and for the security of information systems and networks.

Pathways to governing IoT

The divergence of pathways for regulating IoT in the EU and US could

slow down the global adoption of core standards for data protection and security of IoT. In the interim, however, both approaches require governments to consider the wider institutional challenges for enabling IoT to develop in a secure and trustworthy manner. Security or data protection by design have such a large ambit that they cannot rely solely on top down measures for regulating IoT. Governments must search deeper in their policy toolbox to enable the institutional capacity of private and public entities to coordinate and respond in an adaptive manner to rapidly evolving security and privacy challenges.

Thus, governments must consider their wider 'orchestration' and 'mobilization' role in order to 'activate networks for public problem solving' (Salamon, 2002: 16–17). Such tools can rely on training programmes in data minimization and information and network security that do not target only providers of government contracts, but also small and medium size organizations who cannot easily cover the costs of implementing and upgrading cybersecurity measures to tackle the unique risks of IoT. In addition, governments can simplify information sharing mechanisms between private enterprises and government agencies concerned with the security of interconnected cyber and physical infrastructures. Governments can use positive incentives to promote the wider adoption of information assurance schemes in the private sector and, in turn, these measures can allow the insurance market to better assess exposure and model cybersecurity risks.

All these measures point to significant changes in the governance of risk and cultures of security currently in place across private and public sectors. The UK government has already indicated its preference for 'a flexible and proportionate model for regulation in domains affected by the Internet of Things', signalling a concern that strong IoT regulation could disable its capacity for growth (Government Office for Science, 2014: 10). Given its exit from the EU, the UK government might have a greater opportunity to consider alternative policy and regulatory designs to achieve its vision for IoT.

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Black swan in the Cloud

'To regulate and to protect', **Michael Haba** discusses the challenges of regulating cloud-based critical infrastructures

Late modernity is said to be fascinated with risk. By permeating our society, risk has found its way into our daily lives – affecting our thinking and/or decision-making. In this 'risk society', regulators are tasked with the anticipation and control of risks, and risk-based regulation has become the bread and butter of any regulator. However, such regulation will not and cannot result in the anticipation and management of all risks, because of a number of issues – one of them is the frequent focus on the known and available while a blind eye is being turned to the unknown and unpredictable. So what if a 'black swan', a highly unpredictable and rare event, but one with a high impact, appears?

State and non-state actors have paid increasing lip service to the importance of protecting critical infrastructures, that is systems and networks that make up the infrastructure of today's society, such as banking and finance, energy, water or telecommunications. One typical justification for more intrusive regulation is rooted in the understanding that both security and reliability of critical infrastructures are regarded as public goods that would be under-supplied in the absence of any kind of state intervention. However, this raises the issue as to what should be considered a critical infrastructure. The increasing significance and widespread use of new technologies including (but not limited to) The Internet of Things (the internet working of a variety of connected devices) and Cloud Computing (on demand access to shared computing resources and data) have renewed regulatory interest in information infrastructure and its protection from cyber risks.

Over the past few years, cyber-related incidents have enjoyed considerable attention, ranging from security breaches to email systems (such as Yahoo), the hacking and releasing of politically salient information (such as the release of the Clinton campaign emails) to attacks on banking systems (such as Central Bank of Bangladesh, and more recently Tesco Bank and Lloyds Bank in the United Kingdom). According to professionals in the field such as computer scientist W. Daniel Hillis or former US cyber security advisor Richard Clare, modern society has already become over-dependent on information technology. Consequently, legislators and regulators worldwide have started to treat information infrastructures in the same way as more traditional ones, such as water and energy. The contemporary challenge is to develop laws and regulations to prescribe what ought to be considered as critical and how operational risks that emerge from these critical systems should be adequately addressed and managed.

Risky Cloud business?

While regulators try to anticipate and manage risks, business people are located at the other end of the spectrum: Many of them are natural risk-takers, because taking high risks usually involves the prospect of high profits. Yet, introducing a new product in a market is a risky venture. For example, to build, operate, and maintain information infrastructure that is fit for the purpose of Cloud Computing, namely a relatively global infrastructure that enables a convenient and on-demand provisioning of shared computing resources to multiple customers, is currently both a knowledge-intensive and costly (usually) private enterprise involving both substantial investment in technology and human capital. It follows that the market for providing global information infrastructures has very high entry barriers. It is therefore not surprising that only a few large multinational corporations operate in this market.

Having made these investments, it is imperative for these corporations to fill this infrastructure to capacity as quickly as possible. In order to do so, they will seek to attract large industrial or institutional customers from the public or private sector, including ministries of defence, other ministerial departments, regulatory agencies, local governments, universities, health services, and large industries such as the automotive industry, utility companies or banks.

However, such a business approach leads to a situation where a small number of providers are responsible for the operation of a ubiquitous service on which societies critically depend. But the regulatory concern does not stop there.

Cloud Computing may give rise to systemic, if not existential crisis due to its inherent complexity. This complexity increases the risk of system-wide failures which in turn can trigger cascading failures across critical infrastructures: Firstly, Cloud Computing is based on virtualization technology, that is the process of transforming physical hardware resources into a pool of virtual resources that can be shared by many clients. As a technology, virtualization is brought to life on the basis of complex interactions between a plethora of technical components that have been rigidly designed and involve issues concerning resource, performance, and security management such as scaling of system and network resources, task scheduling, fault and security isolation, as well as data confidentiality and integrity management. Being a tightly coupled and interactive large-scale system, Cloud Computing is thus intrinsically vulnerable to disruption.

Secondly, cumulative dangers exist because of inter-sector dependencies, particularly in cases where the large institutional customers of Cloud Computing service providers are themselves providers of critical infrastructures and to a significant extent relying on Cloud Computing to operate their critical infrastructure services.

It follows that a disruption of the upstream Cloud Computing infrastructure is likely to cause a disruption of the downstream critical infrastructure, in the worst case bringing about a multi-sector infrastructure collapse. At its worst, this could constitute a catastrophic event.

Is the Cloud a black swan?

Are we therefore dealing with a risk of a black swan event that is worth watching out for? Should we worry about a highly concentrated global market for large-scale Cloud Computing services for providers of international, national and local critical infrastructures? Some will argue that the probability of the occurrence of such a catastrophic event is too remote. Others will point to the 'failure of collective imagination' that is said to have been at play during the financial crisis of 2007–8. They would therefore advocate some form of intervention in view of potentially unpredictable consequences of conditions in which complexity meets interdependence. The financial sector has explicitly addressed issues associated with the built-up of systemic risks. Yet, other regulatory spaces are still to follow suit.

Given the uncertainties involved, regulators and regulated critical infrastructure service providers would be highly imprudent to turn a blind eye to Cloud Computing as an emerging new technology that needs to be far better understood in terms of its risks and potentially systemic effects. Resorting to methods of trial and error seems to be the least feasible option. Instead, approaches of risk mitigation might take the route of highly prescriptive standards applying to critical infrastructure providers when it comes to questions of availability, disaster recovery, and business continuity. The important question here has to be whether or not the high expectations created in elaborate plans and reported 'readiness' will be dashed when a black swan appears in the Cloud.

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Governing through quantification: developing a calculative infrastructure for controlling quality in German hospitals

Jacob Reilley and **Tobias Scheytt** discuss the rise of quality indicators

Think of an assembly line at a car manufacturer that has no end-of-line quality control. Nobody checks whether the wheels are tightened, whether there's fluid in the brake system, or whether the fuel line is attached to the motor and not the radiator. You might be nervous getting into a car that was produced on that assembly line. A rather similar situation, however, existed in the German hospital system until the 1990s. Of course, since the beginning of modern medicine, doctors in Germany paid much attention to the treatment quality of their patients. But on an organizational level, and even more on a sector-wide level, managers and regulators had no comparative figures at hand, no information besides some mortality statistics and other rather rudimentary information on the quality of service. Up to that time, neither providers nor health insurers attempted to measure quality, and quality was not seen as a key object of public management.

Today the German health sector is permeated with quality indicators, elaborate costing systems, and quality management tools, which make use of routine data and standardized numerical information to evaluate and control quality differences in hospitals. Quality is now at the centre of regulatory reforms, which aim to create the 'hospital of the future' (Roeder et al., 2015) by linking output measurements of quality to reimbursement schemes for operational costs. Sector-wide initiatives to find a suitable country-wide hospital structure for quality control utilize quantitative quality indicators to identify out- and under-performers among hospitals. Overall, within the last two decades, we have witnessed a gradually increasing propensity to operationalize quality in quantitative terms for the purpose of more effective governance. While such developments may seem quite in line with trends of new public management, Germany represents a special case for how governments have developed such calculative infrastructures.

The most striking institutional specificity of Germany's healthcare sector is its partial regulatory autonomy. The sector is self-governed by nation-wide associations of doctors, hospitals, health insurers and patient associations, which have a significant influence on the definition of regulatory frameworks. Instead of a 'regulating state' that can produce a straightforward regime based on oversight, Germany's healthcare sector is thus largely based on mutuality, deliberation, and expertise, but increasingly also competition. The institutional actors are legally required to cooperate with one another towards a common goal of improving quality in hospitals, but do so according to their own, local understandings, measurement tools and interests. Thus, stakeholders in the arena of contemporary healthcare quality debates do not always agree on the meaning of quality, or how to best operationalize it. As a result, rather than a centrally driven approach to evaluating and controlling quality (as for example in the UK), in Germany we see the gradual emergence of a sector-wide flexible calculative infrastructure for healthcare governance – made up from an assembly of methods for collecting quantified information, analysing data, creating standards, and monitoring for accountability.

Key to the establishment of such a flexible infrastructure is the definition and operationalization of a 'boundary object' (Star and Griesemer 1989). A boundary object can be used to explain how institutional and organizational actors coordinate towards a vague but common goal in absence of clear consensus (ibid). In the German healthcare system, a 'visionary boundary object' (Briers and Chua 2001: 242) is the vague notion of improved quality, coupled with an idealized notion of the hospital as a 'complete' or 'rational' organization (Brunsson and Sahlin-Andersson 2000). The basic idea here is that a 'complete' hospital can provide the best quality when it can set goals for itself, respond to market incentives, manage internal processes through clear hierarchical orders, and rely on organizational processes to improve quality, rather than profession norms (ibid). This form of a hospital represents an idealized policy goal for the sector as a whole and enjoys a high degree of legitimacy among all actors involved.

Yet, when we look closer, we see that the notions of 'improved quality' and 'the good (complete) hospital' are unknown in local contexts until customized and tailored to specific practices and settings. Here, we see how quantification plays a key role in operationalizing quality and understandings of the 'complete' hospital through formalized quality management systems, including indicator sets (Power 2015). Actors in German healthcare can mould these instruments to their own specific requirements and motives with regard to improving quality and realizing the 'complete' hospital; they do so according to their own views, which are influenced by their respective regulatory responsibilities in the field. As this process has perpetuated for the past two decades or so, the result is the layering of slightly different, only partly converging notions of quality. The boundary object (vague ideas about 'the good hospital') thus helps to gradually establish a sector-wide quality agenda, but also supports actors at the diverse levels of the healthcare system in keeping their specific interpretive schemes alive (Lindberg and Czarniawska 2006).

The way in which the regulatory regime surrounding quality has developed over time has implications for the sector's understanding of both quality and hospitals. Indeed, an emerging calculative infrastructure can change the ways in which knowledge about quality is collected, disciplined, and coordinated (Star 2010). Through the operationalization of visionary boundary objects, the idea of the 'good hospital' is not merely reflected in numerical form, but it is constructed by and through practices of quantification. For example, quality has gone from a professionally defined concept to one which has been established as something measurable in terms of results and impact. Now in various quantified forms, quality has been deemed controllable by actors external to the profession, and been both lauded and abhorred as the foundation of a self-sustaining quality control regime. The hospital, once beheld as a place of negotiated order and professional self-regulation, is now addressed as an actor capable of enacting sector-wide change through rationalized and managerial approaches to evaluating and controlling quality.

We believe it is important to highlight the ways in which quantification lies at the heart of such changes to public management approaches. We also find it crucial to develop a deeper understanding of the effects of quantification on its objects of governance. The implementation of sector-wide instruments of quantification, such as quality indicators, does not occur overnight, but is the result of long fought and arduous processes. In Germany, we have an example of governance by numbers 'in the making'. The end-of-line quality control is still emerging and so patients can only feel slightly more secure. The calculative infrastructure will be further refined as actors continue to negotiate on the basis of both evidence-based standards for quality and economic demands for efficiency and effectiveness, and whether the outcome is for good or worse remains to be seen.

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EU to the rescue no more?

Lydie Cabane and **Martin Lodge** reflect on contemporary challenges to EU crisis management regimes

EU member states are said to have largely lost their national economic boundary control. Contaminated food from one member state can cause death in another member state, competition over regulatory standards can create systemic risks as the financial crisis has highlighted, and asymmetric economic fortunes can lead to migration.

The European Union is traditionally at the heart of dealing with transboundary policy problems. Whether the EU governance can effectively deal with these varying types of transboundary crisis has been a long-standing preoccupation. Traditionally, these debates have sought to explain differences in governance regime by pointing to the type of policy such as 'barrier eliminating' (negative) vs new policy-creating (positive) integration, the type of regulatory standards (market-making, market-correcting) or the diversity of member state administrative traditions.

Over the past decade, however, different factors have emerged on the political landscape. These factors are likely to have fundamental effects on the ways in which EU governance operates. One central trend is the re-nationalization of electoral politics. Even before the Brexit referendum, the EU was no longer seen as a solution, but as an electoral issue to be campaigned against. The other factor concerns financial depletion of national administrations in the aftermath of the financial and sovereign debt crises. At the same time, the EU has set up more or less visible transboundary crisis management systems to deal with potential threats to its existence and challenges to market integration.

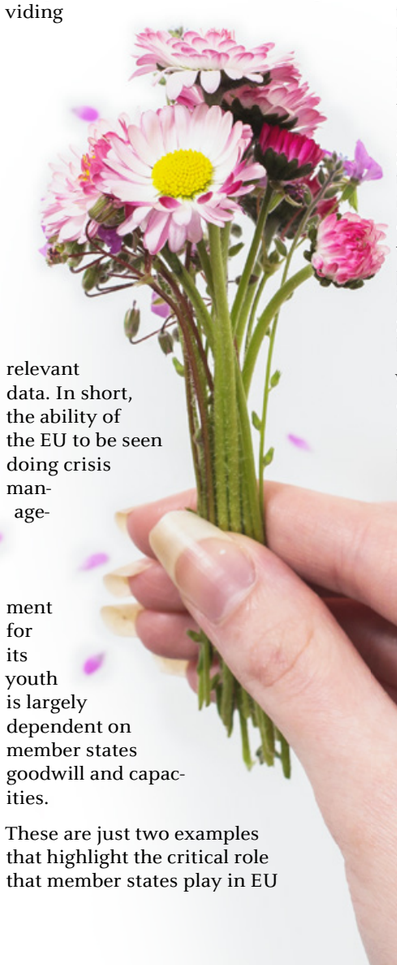
So how do these factors affect the EU crisis management arrangements? Firstly, whatever the exact nature of regime, any policy requires systems for setting and updating its standards or goals. Secondly, policies need mechanisms for information gathering so as to detect the emergence of risks and the compliance of member states. Thirdly, policies need mechanisms to change the behaviour of member states so as to ensure compliance. We are arguably observing challenges to EU governance across all these three regime components. Partly, this makes the study of EU governance at this time particularly interesting. However, for those interested in effective crisis management, these dynamics are more problematic.

Take the regime for invasive alien species as an example. This is a risk that affects all member states at one level representing a cost of €12.5 billion per year to the EU. At another level, which species are regarded as invasive and are having an effect on local ecological systems varies across member states, given their climate, state of ecological diversity and trade connections. However, all states face similar challenges as changing temperatures mean that species spread into new territories and trade integration means that invasions are increasingly likely. It follows that member states need not just to agree which plants and animals represent invasive alien species, but they also need to commit to tackle species, even if their presence is largely a threat to other states' ecology rather than their own. One recent example is the Asian hornet which 'landed' in France and has caused considerable debate about (the lack of) effective management strategies, especially with bee-keepers whose hives were affected, and with neighbouring countries complaining about the failure to contain the invasion early on.

Invasive alien species represent a relatively new policy domain. The EU recently passed Regulation 1143/2014 to tackle this transboundary problem. At the heart of the regime is a list of invasive species which attracted considerable debate among interested parties (such as plant export firms, environmental NGOs and the fur industry), inter-institutional conflict between the European Commission and the European Parliament, and debate about the quality of risk assessment that summarized scientific knowledge about particular species. The second pillar is the commitment by member states to establish systems to monitor species and take actions, when required. While it might be too early to tell whether the second pillar is functioning, it is presently not clear to what extent member states are committed to creating and maintaining such systems in view of resource depletion. The first pillar, the list, is arguably also under threat. Updating of the list requires risk assessments and it is not apparent whether the European Commission and the member states have sufficient resources to conduct these. There is therefore a distinct risk of fossilization and increasing irrelevance of this particular EU regime.

The UK plays a unique role in this context. It was central to the development of the EU regime and claims to have one of the most advanced risk assessment and management systems in place. At the same time, Brexit raises essential questions: does the UK want to adopt its own list which will require considerable negotiation with the EU, or does it want to continue shadowing the EU that may be less enthusiastic about this topic, as one of its central promoters is heading to the departure lounge rather than the negotiation table?

We can find similar dynamics also in other regimes that are associated with different EU decision-making procedures. Take, for example, the case of youth unemployment. The promotion of the so-called Youth Guarantee was seen as a noteworthy policy development in the aftermath of the financial crisis. It was promoted by member states (especially Germany and France) and by the European Commission, and it, somewhat uniquely, combined traditional elements of benchmarking and peer review (as part of the 'European semester') with substantial financial commitments (totalling €12 billion). There are, unsurprisingly, debates about the level of solidarity, funding commitments and the choice of policy tools. Member states, such as Spain, with devolved competence for such youth schemes, had problems in coordinating and dispensing monies. Member states with the highest youth unemployment figures (above 40%) were also those whose administrative capacities were the most affected by the financial and debt crisis. Local administrations were faced with the problem of identifying potential recipients of such schemes, especially in those member states whose youth unemployment figures were reaching historically high levels (Italy, Greece and Spain). Others (UK) considered this kind of active labour market policy to be ill-suited to their own local conditions and did not implement the Youth Guarantee. Beyond the problem of administering such schemes, there was also the concern with the use of indicators. For some, data gathering and comparing exercises offered scope for comparison and learning. For others, these exercises were largely decoupled from the real political decision-making on particular issues, especially as it was not clear how much effort member states actually placed in providing relevant data. In short, the ability of the EU to be seen doing crisis management for its youth is largely dependent on member states goodwill and capacities.



These are just two examples that highlight the critical role that member states play in EU governance. Member states are central to the updating of regimes, they are central to the reporting of the information that informs decision-making, and they are central to ensuring that policies are put into action. Their actions (or rather lack of) can have considerable effects on other member states and the EU. It highlights the highly fragile nature of EU governance since it depends on the motivation and the capacity of member states to contribute to standard setting, information gathering and behaviour modification. Motivation to contribute to the existence of these regimes is not just shaped by domestic partisan interests and orientations, it is also affected by the wider commitment towards supporting the EU as a legitimate source for addressing transboundary crisis management issues. Not unrelated, however, are questions about capacity. It is not clear whether administrative systems are in place that support the effective organizing of EU multi-level governance regimes, given limited resources and the limited legitimacy attributed to the EU.

While it may be too early to write an epitaph to EU governance as legitimate source for crisis management, it is important to realize that the foundations for effective EU crisis management are cracking at the seams.

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The TransCrisis project (full name: *Enhancing the EU's Transboundary Crisis Management Capacities: Strategies for Multi-Level Leadership*) is a three-year project funded by the European Union under the Horizon2020 programme. **carr** is the co-ordination partner in this network of eight organizations. Other partners involve: Crisisplan (Arjen Boin), the University of Utrecht (Femke van Esch), Central European University (Nick Sitter), Institut Barcelona d'Estudis Internacionals (IBEI, Jacint Jordana), University of Catania (Fluvio Attina), University of Stockholm (Mark Rhinard) and ThinkTank Europa (Maja Rasmussen). More information can be found at the project website: www.transcrisis.eu

Giving behavioural insights a nudge

Filippo Cavassini, **Martin Lodge** and **Faisal Naru** reflect on international experience with behavioural insights in policy

To say that 'behavioural insights' are the flavour of the day in the world of regulation and policy is an unfair understatement. The *Nudge* book by Richard Thaler and Cass Sunstein (2008) has enjoyed widespread currency. In the UK and elsewhere, regulators and policymakers are required to justify their decisions by referring to behavioural insights; units within and outside government are promoting behavioural insights and international conferences offer opportunities to exchange findings and to network. The underlying ideas supporting behavioural insights are far from new; they are about considering the biases of human behaviour when developing policy. It is about evidence-based policymaking – with real evidence. However, beyond the reporting of policy initiatives and the development of policy recommendations, we know less about the actual utilization and diffusion of behavioural insights in government.

What, then, is the use of behavioural insights among regulators and other government actors? Where and when are these interventions deployed? Who is leading and spearheading the use of behavioural insights? What can we learn from these applied examples? These questions were at the heart of joint work between the OECD and **carr**, also including ideas42 and the European Nudging Network (TEN). At the heart of this exercise was a survey distributed widely across OECD members and networks of regulators and discussions, such as during **carr**'s Regulators' Forum (a venue for exchange between regulatory bodies). This exercise resulted in 129 examples or case studies from 60 organizations in 23 different countries and from multi-national organizations (such as the World Bank and European Commission).

So what does the survey tell us?

› Among the reported cases, there was a clear dominance of individual transactions in the market place by enhancing consumer protection and choice. In other words, the interventions were about encouraging particular options rather than others. These interventions mostly occurred in financial services, telecommunications or energy. Other examples were about reducing administrative error in completing paperwork.

› Behavioural insights were part of broader organizational and government-wide reform agendas, supported by the leadership of particular organizations.

› The institutional arrangements supporting behavioural insights could be broadly distinguished by three types: those relying on a diffused model (where existing units were promoting behavioural insights), a central steering model (with a specialist unit at the centre of government), or a project model (with behavioural insights being organized on a project and initiative basis), with a fair degree of co-existence of these models within individual governments.

› There was limited information about the actual cost of putting behavioural insights into practice. On the one hand, therefore, a lack of resources did not seem to feature among our respondents. At the same time, there was also little information on the actual cost of behavioural insights initiatives. Where respondents answered, they mostly suggested that behavioural insights had been applied at little, if any cost. This might have been explained by organizations using existing budgetary lines.

› There was also not much evidence that ethical concerns had largely featured in the application of behavioural insights. There seems to have been a reliance on existing ethical guidelines.

› Among methodologies, randomized control trials featured among the most tried and tested methods, usually drawing on earlier studies. (There was limited information on sample sizes.)

Apart from such resource-intensive methods, there was also a reliance on low cost devices, such as the use of desk-based literature reviews.

Of course, surveys are notoriously problematic tools to glean an in-depth understanding of what organizations actually do. Response rates are relatively low (in our context, it is impossible to say what the total universe of respondents might have been). It is not clear who is filling in these surveys and to what extent these respondents have full access to the information required. There is a bias towards reporting only things that worked rather than those that did not, or where no activities had originally taken place (for potentially very good reasons). There might also be a bias towards reporting completed work rather than ongoing 'leading edge' activities. Nevertheless, conducting surveys as part of the OECD network does give surveys a higher profile and salience and they therefore give us a reliable insight on what is being done, allowing us to probe further into these patterns.

So what should be the next steps? Behavioural insights in government are relatively new and have gone beyond the flavour of the day. To take further roots, they need good data, methods and replication, they need further transparency (also about interventions that did not work), and they need to show to have long term rather than mere one-off effects.

Beyond those immediate issues, three particular aspects can be highlighted.

One is that behavioural insights should not just come at the end, once the policy is in place. Decision-makers should be confronted with behavioural insights-type thinking right from the start (where appropriate). Equally, there should be a general awareness of the ways in which decision-making biases might influence decision-makers themselves.

The second concern is the need for theoretical openness. There was much emphasis on 'what works'. We need however theories to explain the world. There needs to be awareness of the theoretical assumptions that underpin the research that seeks to offer behaviourally informed evidence. Different theoretical models about human decision-making can lead to very different policy implications.

The third, related point is about the boundaries of behavioural insights. As noted, the survey revealed a dominance of transactional interventions relating to consumption patterns, customer choices or administrative interactions. It is an open question whether behavioural insights can be moved beyond the 'well intentioned, poorly resourced' individual towards other sets of actors that may be more ill-intentioned and well resourced. There is also a need to reflect more carefully about political decision-making (Lodge and Wegrich 2016). Existing models are limited in their assumptions about knee-jerking politicians, siloed-up organizations and risk-averse bureaucrats. As a result, thinking about the organizational behaviour of public and private organizations should receive more attention. The OECD (2016) for instance has been working on how to nurture a 'culture of independence' in regulatory agencies and protect from undue influence. This is an area where behavioural experiments could be used to test what would support a cultural change in an organization.

Behavioural insights are certainly in the coming of age period. It is essential to systematically build on existing insights, develop understanding of weaknesses and limitations, and promote reflective practice in the worlds of research and practice.

This article reflects on the OECD's recent report on 'Behavioural Insights and Public Policy' which draws on joint research by the OECD and **carr**. More information is available here:

www.oecd.org/gov/regulatory-policy/behavioural-insights.htm

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Regulating political advertising in the UK– truth or consequences?

Suzanne McCarthy considers the regulatory challenges of entering the heat of politics

The recent Brexit referendum resulted in not just a vote for the UK to leave the EU but also ignited a debate about whether political advertising should be regulated. Incendiary statements by the different sides – the £350 million given every week to the EU would be re-directed to the NHS; Turkey was going to be allowed to join the EU within the next few years; and UK families would be £4,300 a year worse off if Britain left the EU – were hurdled constantly into the arguments by Leave and Remain campaigners. Both sides vehemently attacked such statements as misleading and inaccurate. Unsurprisingly, petitions calling on the government to ban misleading political advertisements attracted thousands of signatures[1] and groups and political figures have spoken about the need for regulation of political advertising.

The political world and advertising are not strangers as the relationship between Saatchi & Saatchi, the well-known advertising agency, and Margaret Thatcher demonstrated. Her policies may have won her three elections, but it was advertising that got them noticed.[2]

For the purposes of this article, political advertising is classified as advertisements published in whatever medium whose function is to influence voters in elections or referendums to vote for a particular candidate, party or for a particular position.

Certain questions need to be considered when deciding whether to regulate a specific subject area:

- Whether regulation is feasible and appropriate given the subject matter;
- What type of regulation should this be – self-regulation, co-regulation or statutory;
- Who is going to pay for the regulation, i.e. government or the industry or sector involved;
- What powers and sanctions the regulator will have; and
- How and to whom will the regulator be accountable.

Regulating political advertising in the UK and elsewhere

Advertising in the UK is regulated by an independent self-regulator, the Advertising Standards Authority (ASA). Applying the Advertising Codes (the Codes, which are written by the advertising industry), it considers whether advertisements have breached the Codes by failing to be 'decent, honest and truthful', in other words, not misleading, harmful or offensive. The ASA receives no government funding, and the funding it gets from industry comes by way of an arm's length arrangement to avoid the ASA being compromised. The Electoral Commission, a statutory body, regulates elections and party and election finance (Political Parties, Elections and Referendums Act 2000).

Different rules apply in the UK to broadcast and non-broadcast political advertisements. Broadcast political advertising is banned on TV and radio, and the regulation of party political broadcasts is the responsibility of OFCOM, another statutory regulator. But political parties are given airtime to transmit political broadcasts.Political advertisements in non-broadcast media are not regulated by the ASA being specifically exempted by the Code.[3] Notwithstanding this, the ASA received 350 complaints from the public about Brexit campaign advertising. There have been attempts to get political parties to establish a code of practice,[4] but as no consensus could be reached, this proposal was stillborn.

Other countries also find regulating political advertising problematic. Australia has introduced no legal requirement for the content of political advertising to be factually correct. The Canadian Code of Advertising, like the UK's, does not control political advertising. While various US state legislatures have attempted to enact truth in political advertising laws, these have been blocked by the Supreme Court's interpretation of the Constitution's First Amendment guaranteeing freedom of speech.

Arguments for and against regulation

It is argued that if political advertisements are of questionable truthfulness, they diminish confidence both in the political system and in advertisements generally and for that reason their regulation should be encouraged. Further, as the ASA already deals with advertisements on Government policy, such as the Home Office's poster encouraging illegal immigrations to make themselves known or risk arrest, and on subjects with political overtones like London airport expansion,[5] it would be but a small step for it to determine political advertisements. However, commercial advertising is distinctly different both as who gains from it, such as company shareholders, and the advertiser's objective is not party political power but political influence.

Reasons given against regulation fall into two categories – principle and pragmatism. One argument is that regulation of political advertising might be contrary to the Human Rights Act 1998 being a constraint on freedom of political speech. Further, it is maintained that it would be unacceptable for a body like the ASA to insert itself into the democratic process of an election or a referendum. It is argued that a free press is sufficient to ensure that voters are able to make intelligent decisions. It is also claimed that electors have the power at subsequent elections to punish those who have misled them. That statement is not, however, true for those referendums such as the one on Brexit which are not argued along neat party lines. In those one-off situations, voters do not get a subsequent chance to exercise their franchise.

There are also practical arguments. Once the official starter button is pressed elections and referendums have short time frames. Unless very expensive fast-track processes were used to deal with any complaint, it is unlikely that it would be resolved before voting took place. This would be particularly the case if the advertisement complained about was published just before voting opened. It would be little solace for those voters swayed by that advertisement to find out that they were duped after the event. There is also the issue of sanctions. There is certainly merit in a respected regulator publishing a ruling which is placed on the public record stating that an advertiser has got it wrong, but what about persistent offenders? What would be a sufficient sanction – docking a percentage of the votes; losing one or more MPs? The answer is not straightforward, and nor is the question who should have the authority to impose the sanction. Should the regulator determining the complaint have that authority – which would place it firmly in the political arena – or should this be passed to another body? Passing it onto politicians would undoubtedly bring the possibility of serious and dangerous conflicts of interest.

More importantly and fundamentally, any complaint investigation would require the cooperation of the political parties. The evidence of previous failed attempts to get them to agree to a code, makes this seem very unlikely especially during the heat of a political campaign. Further, it has to be expected that at least some of the investigatory costs would be sought from Government, and as such opens up questions of unwanted intervention especially if the regulator was an independent, self-regulator like the ASA.

Conclusion

Political advertising can be truthful, but ensuring it is truthful is not straightforward. Regulating political advertising takes its regulator into the heart and heat of the political game. While intellectually there may be a case for regulating political advertising, the practical problems of doing so make it unlikely that such regulation will be introduced in the UK any time soon.

Suzanne McCarthy is member of the **carr** advisory board. She sits on various boards, including the Advertising Standards Authority, the Fundraising Regulator and the Architects Registration Board.

1 One petition, which attracted over 78,000 signatures, read, 'The general population of the UK are tired of listening to outright lies and misrepresentation from the political elite in order to gain votes. With a more honest representation of facts our democracy would hand power back to the people it governs.' The Government responded by referring to the seven principles of public life which apply to those who hold public office including people who are elected or appointed to public office, nationally and locally. Another called for the creation of an independent regulatory body 'to ensure truth in political advertising'.

2 One of the most famous Saatchi & Saatchi political posters (1979) showed a dole queue snaking out from an employment office and disappearing into the distance. The title read, 'Labour isn't working', and underneath, in smaller type, 'Britain's better off with the Tories'.

3 Rule 7.1. This was not, however, always the case. Until 1999 non-broadcast political advertising was subject to the Code to some extent such as on the basis of offensiveness. The Conservative Party's 1996 campaign showing Tony Blair with 'demon eyes' was determined by the ASA to have caused offence and in breach of the Code.

4 Neill Committee on Standards in Public Life, October 1998, recommendation 96. In 2003 the Electoral Commission conducted a consultation on the regulation of electoral advertising, but concluded that the ASA should not be responsible for such advertising and did not itself establish a code. The Committee also observed that political parties spent large sums of money on advertising and this led to the Committee's proposals to limit election expenditure by parties (recommendations 94 to 97), which is something also used by other countries as an indirect way of controlling political advertising.

5 ASA ruling, Home Office, dated 9 October 2013; ASA ruling Back Heathrow t/a Back Heathrow 20 April 2016; ASA ruling Heathrow 4 February 2015; ASA ruling Gatwick Airport Ltd t/a Gatwick Airport 12 August 2015; ASA ruling Gatwick Airport Ltd 26 August 2015; ASA ruling Gatwick Airport 4 March 2015

Conflicted calculation: emotion and natural hazard risk

Rebecca Elliott discusses the emotional contours of risk

Tina choked up as she explained that her home in Broad Channel, Queens, had been 'remapped' into a higher risk flood zone on New York City's recently updated flood maps. As a result, her flood insurance would become so expensive that she might not be able to keep the house unless she found the money to elevate it. Faced with this new, two-part calculation of risk and its price, she was torn. On the one hand, she knew the risk was worse: 'Living on the water, we saw the change.' On the other, she couldn't bear the thought that the neighbourhood where she had lived her whole life and raised her children might be too risky and too expensive for her and her family to stay. And if she elevated her home now, would it be enough when the flood maps were updated next?

Zygmunt Baumann (1991) told us that ambivalence is an irrepressible feature of modern life. Our 'drives to order' – expressed in our preoccupation with design, management, engineering, and calculation – paradoxically seem to generate opacity, confusion, and helplessness, increasingly borne as an individual problem. Ulrich Beck (1994: 12) took up this idea, connecting it to a characterization of the emotional tenor of risk society, in which we are alienated, anxious, 'living and acting in uncertainty'. The more we do to represent environmental and other dangers as risk, as a way to exert control over them, the less secure we feel.

In my research, these broad characterizations provide a provocation to examine the emotional experience of living at risk empirically. I focus on New York City at a moment when residents like Tina, along with public officials and civil society actors, confronted a new landscape of risk and its price, calculated and represented on maps used to set the price of flood insurance. What are the emotional contours of risk and why might they matter for how we understand human experiences of natural hazard risk in particular?

I share this interest with a number of researchers who recognize that risk is a problem of feeling. Coming largely out of various subfields of psychology, these studies complicate theories of cognitive reasoning, showing that negative and positive feelings, whether conscious or unconscious, provide affective heuristics – 'mental shortcuts' that shape how people identify and respond to risk. This intervention has been applied to some research on natural hazard risks, like flooding, that has demonstrated the relevance of emotion. For instance, the work of Tim Harries (2008, 2012) on flood risk in the UK has shown that feelings of anxiety and insecurity can overwhelm material and financial considerations when deciding whether to undertake protective action. In the context of flood and other natural hazard risks, emotion is generally conceptualized as a problem of individual decision-making under risk, helping to explain the persistent puzzle of why many people who face such risks do not take steps to avoid or mitigate them.

My research builds a sociological approach to the question that engages a set of interrelated blind spots in this existing literature, revealed through my interviews and ethnographic observation in New York City. The first is that emotion remains confined to individual experiences and sensitivities, without being robustly connected to the social processes that structure how that risk is experienced – processes named but not empirically scrutinized by Baumann and Beck. In New York City, the relevant social process is calculation (of flood risk and its price), which elicits a set of shared dilemmas related to felt tensions between attachment to place, fairness, security, and resilience. In drawing boundaries around risk zones, the flood maps group people together who all have to come to terms with new calculations of risk and its price. The second shortcoming of earlier studies is that the only individuals who seem to matter are the homeowners at risk, typified as 'emotional' in contrast to 'analytical' or 'rational' experts. Yet the representation of and response to risk is a collective enterprise that implicates many different actors who, significantly, *interact* with each other: engineers, local administrators, elected officials, lawyers, and insurance professionals, in the case of flood risk. As Deborah Lupton (2013: 638) notes, emotions are 'not simply or only personal, individualised experiences but may also be shared between people, circulating between bodies'. I found that through interaction with each other and with the non-human 'risk artefact' (Power 2016) of the flood map, these expert actors became emotionally involved in the dilemmas of New York City homeowners like Tina, leading them to perceive and articulate larger public policy contradictions in the risk management of flood.

Thirdly, the focus on explaining decision-making presumes both that a decision can be made and that the relevant decision is whether or not to protect against risk, which is itself often taken for granted as objectively real. But risks are constructed realities and the emotions they generate are bound up with their construction. Whether people feel anxiety, confusion, loss – or conversely, clarity and confidence to act – depends on, for instance, whether risks are defined as individual or shared, how 'near' or 'far' expected harms are anticipated to be, and how risks are communicated visually and/or economized insurantially. Risk representations, like flood maps and insurance premiums, require people to contemplate uncertain physical, financial, and social futures, potentially generating responses addressed not to the risk itself, but instead to its construction. In New York City, the new maps and insurance prices were 'scarier than another storm', in the words of one Rockaway, Queens homeowner. Residents who had and had not undertaken protection banded together to fight the flood maps, their interest in protecting property values co-mingling with an emotional imperative to defend their homes and communities.

Taken together, I describe the findings in New York City as evidence of what I call 'conflicted calculation'. Facing new calculations of flood risk and its price, New Yorkers – those subject to them and those enforcing them – felt pulled in different directions, discomforted by the available options, and uncertain about how to interpret and respond to the representation of risk provided in the maps. I argue that this concept has a broader heuristic value too, helping us to better understand the relationship between emotion and natural hazard risk and its significance. It recovers the social processes and mechanisms that connect modern political and cultural commitments to risk management – Baumann's drives to order – with feeling states experienced on the ground. 'Conflicted calculation' also helps to observe more clearly the challenges facing communities coming to terms with their own vulnerability, as risk technologies and rationales impose new definitions and demands on treasured places.

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Regulating infrastructures in the tropics

Debates about regulatory governance of logistics infrastructure need a focus on regulatory capacity argue **Martin Lodge**, **Chris van Stolk**, **Daniel Schweppenstedde** and **Julia Batistella-Machado**

Infrastructures are at the heart of social and economic life. How, then, when faced by depleted public finances, can states promote the development of infrastructures? This is a question that is relevant for both OECD and non-OECD states. How to design regulatory regimes to support the development of infrastructures is at the forefront of international debates, especially as experiences over the past few decades have often ended up in disappointment and acrimony and as new state-backed investors, especially from China, have come to play an increasingly prominent role.

So how can regulation contribute to the development of infrastructures? The orthodox answer to this question has been to emphasize 'credible commitment'. Given the threat of potential administrative expropriation once an investment in these fixed assets has been made, investors seek assurances that make any such attempt at expropriation costly to national governments. This recipe – based on the seminal work by Bruno Spiller and Brian Levy (1994) – builds on what has come to be known as the 'time inconsistency' problem. In other words, commitments made today are not necessarily secure, as preferences change. Regulation therefore needs to address the demands of investors seeking assurances that their investment is 'safe', and the legitimate concerns of democratically elected governments.

Brazil represents a paradigmatic case for the study of regulatory recipes. The theme of credible commitment has been prominent in Brazil in the area of logistics infrastructures (ports, roads, rail and airports). While ownership and industry dynamics vary somewhat, what combines all of these sectors is the lack of investment, the presence of bottlenecks impeding development, unsatisfactory regulatory experiences and political contestation over questions of ownership, in addition to differences across different states. Furthermore, the initiatives of various administrations to attract investment and infrastructure expansion have had, at best, moderate effects. Long-term concessions were signed, either with very limited performance-related oversight (roads) or were prone to more generous renegotiations (airports). In rail, it was producers who developed infrastructure to transport their own freight.

The political volatility surrounding Operation Carwash (Operação Lava Jato) since 2014 has added further questions about long-term stability, especially as industry parties with long-standing interests in the logistics infrastructure sector are also deeply involved in the 'car wash' scandal that has gripped Brazil (and has increasingly affected other Latin American countries). To attract investment and develop infrastructure, the current interim administration launched another major initiative, called PPI (Programme for Investment Partnerships). The PPI was established as a priority project of the Presidency. It acted as a Secretariat to organize and prioritize schemes, and it was meant to promote investment into Brazilian logistics infrastructures. Further measures were taken to make concessions more credible by establishing 'hard-nosed' terms for concession renegotiation. In addition, legislative proposals are going through the parliamentary process to enhance regulatory agency governance, especially in terms of agency leadership and decision-making.

Capacity deficits

In this context, questions about 'credible commitment' and other orthodox recipes for attracting 'new investors' and 'competition' offer limited insight. Instead, one should focus more extensively on the underlying deficits in regulatory capacity (Lodge 2014):

› **Analytical capacity deficit:** there was a distinct lack of strategic overview in the Brazilian contest. There was little deliberation of inter-modal considerations, project proposals were said to represent administrative and political convenience rather than strategic rationales, and there was also no examination of wider regional development concerns.

› **Co-ordination capacity deficit:** there was a distinct problem of multi-organizational sub-optimization within a highly fragmented administrative landscape consisting of the Presidency (Casa Civil), cross-cutting ministries (Finance and Planning), sectoral ministries and regulatory agencies. Responsibilities and role understandings remained contested with most participants identifying sectoral ministries as the 'weak link'. In addition, there were concerns about the legitimacy and accountability of regulatory agencies on the one hand, and past micro-management by the presidential centre on the other.

› **Oversight capacity deficit:** there was a general enforcement problem in Brazilian regulation in that regulators were usually unable to enforce sanctions in timely ways. In addition, the resources of regulators were limited, so that their actual performance measurement remained ad hoc (and similarly patchy was the overall learning across different government agencies). These limits were partly caused by initial concession contracts, and partly a result of unpredictable budgetary allocations. In contrast, the national audit office, the TCU, became increasingly dominant and acted as a quasi meta-regulator. This, in turn, increased risk aversion in the sector and also biased attention towards the TCU's (anticipated) concerns.

› **Delivery capacity deficit:** there was little faith in the durability of concession arrangements over time. Concession holders had limited incentives to fulfil the requirements of their concessions, and regulators (and ministries) were said to lack the capacity to manage processes of renego-

tiation in view of strong political and industry interests.

Questions about how to improve the landscape of regulatory governance are therefore central to strengthening the development of logistics infrastructures that might actually add to sustainable social and economic development more generally. But what would the ingredients of such a capacity enhancing strategy look like?

Towards 'disciplined discretion'

One proposal for the development of concessions is to rely on 'special purpose vehicles'. Given agreed legal frameworks, these vehicles include high prestige project-specific organizations to support the actual delivery of a concession. Such vehicles come with the advantage of not requiring major institutional re-arrangements, but they do include the disadvantage of not supporting more long-term capacity building. Nor would they address the overall strategic and analytical deficits.

Another proposal would be to establish a new organization to develop long-term infrastructure plans and thereby establish clearer role understandings between long-term strategy, political priorities (Presidency), sectoral interests (ministries) and contractual development and oversight (regulatory agencies). In a context that already suffers from a hyper-complexity of governmental organizations, adding complexity seems unlikely to be a viable option, regardless of the inherent danger that any organization tasked with the long-term will quickly be sidelined by the political priorities of the day.

A third proposal involves 'coordination protocols'. Accordingly, protocols (memorandums of understandings) would be established that provided regulatory agencies with legitimate scope in concession design and oversight. Such a device would possibly reduce the scope for presidential and ministry-level scepticism, and it would also allow regulators to play a more confident role in developing and maintaining their capacity in analysis and oversight. It would, however, without support from the very top, run the risk of gridlock. It would also require additional measures to enhance the capacity of sectoral ministries.

More generally, what could be done in terms of enhancing the overall capacity within the Brazilian executive when it comes to regulation and logistics infrastructures? Considerable individual capacity exists, but organizational capacities are, at best, patchy. Believing that formal codification will address future challenges is problematic – as with all things in life, regulation does not last forever. It is therefore important to foster 'disciplined discretion' – a commitment to be predictable when exercising direction responsibly.

A number of ways of developing such capacity for disciplined direction exist:

› One is to take procedural instruments seriously. This means not just complying with the required competition of Regulatory Impact Assessments (RIA), but also ensuring that there are internal processes in place that encourage meaningful quality-checking.

› Another is to set better incentives so that concession holders can no longer rely on a well entrenched 'gambling culture' that their ambitious bids can easily be renegotiated on more benevolent terms. It also involves more extensive benchmarking of concession performance.

› A third capacity building measure is to enhance engagement by moving beyond traditional (stale) consultation processes, and to directly engage stakeholders with concessions. Such processes might be troubled by adversarial relationships, or the lack of stakeholders where concession holders are the sole users of the infrastructure. Nevertheless, there would be scope for learning and using external resources to support regulators.

› A final capacity enhancing measure would be to support challenge functions that would force proposals to be carefully examined, allow learning across projects, and also reduce the predictability of regulatory oversight activities vis-à-vis their regulatees.

None of these proposals promise an easy and quick 'win' for Brazil. However, it is by investing in these processes of regulatory governance that capacity can be enhanced. It has long been argued that the regulation of infrastructures requires both commitment (to attract long-term investment) and flexibility (to deal with changes over time). These two goals of commitment and flexibility are often seen to be in opposition to each other. However, by investing in regulatory capacity, it is possible to support 'disciplined discretion' in regulation and therefore produce sustainable social and economic development.

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carr news

carr news

We welcome Louise Newton-Clare as the new project manager for the TransCrisis and QUAD projects. Louise was the first ever centre manager of **carr**, so welcome home!

Alex Giffiths has successfully completed his PhD – congratulations!

Similarly, congratulations to our research associate Flavia Donadelli and our former research students Jürgen Braunstein and Izabela Correa for completing their PhDs.

We also welcome Rebecca Elliott (Department of Sociology, LSE) and Lukas Löhlein (Institute of Management Accounting and Control, WHU Otto Beisheim School of Management) as new **carr** research associates.

carr is partner in a successful British Academy Newton Fund grant application. The grant will allow Mauricio Dussage Laguna from CIDE in Mexico to develop stronger research ties in regulation between CIDE and **carr**.

carr was mentioned in the Cabinet Office's *Regulatory Futures Review* as a potential host to support the building of professional communities of regulators.

carr publications

States of crisis
O. Borraz and L. Cabane (2017) in P. Le Galès and D. King (ed.), *Reconfiguring European States in Crisis*, Oxford: Oxford University Press, pp. 394–412.

Designing resilient institutions for transboundary crisis management
A. Boin and M. Lodge (2016), *Public Administration* 94 (2): 289–98.

A risk regulation perspective on regulatory excellence
B. Hutter (2016) in C. Coglianese (ed.), *Achieving Regulatory Excellence,* Washington DC: Brookings Institution Press.

carr seat

Introducing Riskwork – with Michael Power (October 2016)

Brexit and Regulation – with Anand Menon (January 2017)

carr events

We celebrated two book launches – Michael Power introduced his edited volume *Riskwork* in November 2016. Sebastian Eyre and Michael Pollitt launched their collection on *Competition and Regulation in Electricity Markets* in December.

As part of the ESRC-funded 'Regulation in Crisis?' seminar series, **carr** organized in cooperation with the French IFRIS-funded seminar series 'The Shaping and Government of Crises' an international workshop on 'Quantification in Crisis' at the LSE in December.

The TransCrisis consortium met at the Central European University in Budapest for its six-monthly consortium meeting in April 2017. The theme of this meeting was 'backsliding', one of the key themes underpinning the work of the consortium. The TransCrisis consortium also met for a joint workshop with a fellow Horizon2020-funded project, ENLIGHTEN, at the Copenhagen Business School in November 2016.

The QUAD group met for its international consortium meeting at the University of Leiden in February 2017.

carr activities

Jeremy Brice, together with **Andrew Donaldson** and **Jane Midgley**, delivered a knowledge exchange workshop for representatives of government and the food industry on the anticipation and management of crises and emergencies within the food system in November 2016. In February 2017, Jeremy delivered a research seminar at Keble College, Oxford, on the topic of 'Strategic Ignorance and Crises of Trust: Risk, knowledge and the government of food supply chains in the shadow of the horsemeat affair'. In March 2017, Jeremy presented research findings from the research project 'Making Provisions: anticipating food emergencies and assembling the food system' to an audience of policymakers at the Understanding the Challenges of the Food System end of programme workshop, organized by the ESRC and the Food Standards Agency.

Alex Griffiths presented his research at the King's College London 'Big Data' day.

Bridget Hutter presented at a workshop of the Proportionate and Adaptive Governance of Innovative Technologies (PAGIT) Project as part of Responsible Research and Innovation (RRI), organized by the Innogen Institute, University of Edinburgh, in March 2017. She also visited the Chinese University Hong Kong under their Distinguished Scholar Scheme in March 2017.

Martin Lodge delivered a paper at a workshop at the University of Oslo on 'Blindspots and Achilles' Heels in Executive Politics' in November 2016. As part of the Prosperity Fund project on the regulation of logistics infrastructures, he presented at workshops in Brasilia in December 2016 and in March 2017.

Andrea Mennicken presented a paper entitled 'Quantifying and Valuing Life at the Margins: ratings and rankings in healthcare and correctional services' at the workshop 'From Prices to Prizes and Vice Versa' at the University of Bologna in January 2017. She also presented a paper on 'Economizing Failure, Democratizing Failure: designing a failure regime for NHS hospitals' (co-authored with Liisa Kurunmäki and Peter Miller) at the **carr** workshop 'Quantification in Crisis' at the LSE in December 2016.

Mike Power chaired a Solvency II wire & **carr** roundtable on 'The Governance Trap' involving senior regulators from a number of sectors in November 2016. In the same month, he also gave a talk at the law firm DWF entitled 'Reflections on 10 years as a FTSE 150 NED'. He further spoke at the the Insurance CRO forum hosted by Prudential plc in February 2017, and gave a guest lecture at MaxPo, Sciences Po in Paris, entitled 'Riskwork and Auditwork: reflections on the organizational life of risk management' in March 2017.

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