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contents

editorial

This issue of *risk&regulation* deals with the role and relevance of emergencies in and for regulation. In recent years, we have become increasingly exposed to, and made aware of, various kinds of emergencies: natural disasters (hurricanes, earthquakes and floods in the North and South), financial system crashes, disease outbreaks, political system breakdowns, migration crises, and much else besides. Governments are declaring 'states of emergency' with an increased frequency, at least so it seems, to deal with the threats posed by terrorism, civil unrest, health epidemics, among others. In the area of banking, the European Central Bank's President Mario Draghi's comment on 'whatever it takes' to save the Euro continues to attract controversy, but also highlights the kind of exceptional circumstances European political systems have found themselves in.

This issue considers implications of such developments for regulation. It assembles articles that explore different understandings of emergencies, emergency powers and emergency regulation across policy sectors and national jurisdictions. The contributions address questions ranging from the problem of defining and detecting (potential) emergencies to issues of accountability and legitimacy.

Whereas there exists a considerable body of literature on civil-military relationships and the impact that 'states of emergency' have on constitutional principles and power, less attention has been paid to the use of emergency powers by civilian authorities, including regulators. How should the exercise of emergency powers by independent regulatory agencies be organized and decided upon? Who should have the power (and legitimacy) to declare and end the exercise of emergency powers? What capacities are required for the exercise of emergency powers? How can the exercise of emergency powers be controlled and held to account?

Bruno Queiroz Cunha, Sergio Collaço and Francisco Gaetani, discuss the difficulty of regulatory 'lesson learning' from disasters focusing on the Brumadinho and Mariana dam collapses in Brazil. Arjen Boin and Martin Lodge consider at a more general level challenges that 'creeping crises' pose for risk and crisis management. Alison Harcourt considers risks and opportunities of FinTech and the challenges that regulators face when dealing with unknowns.

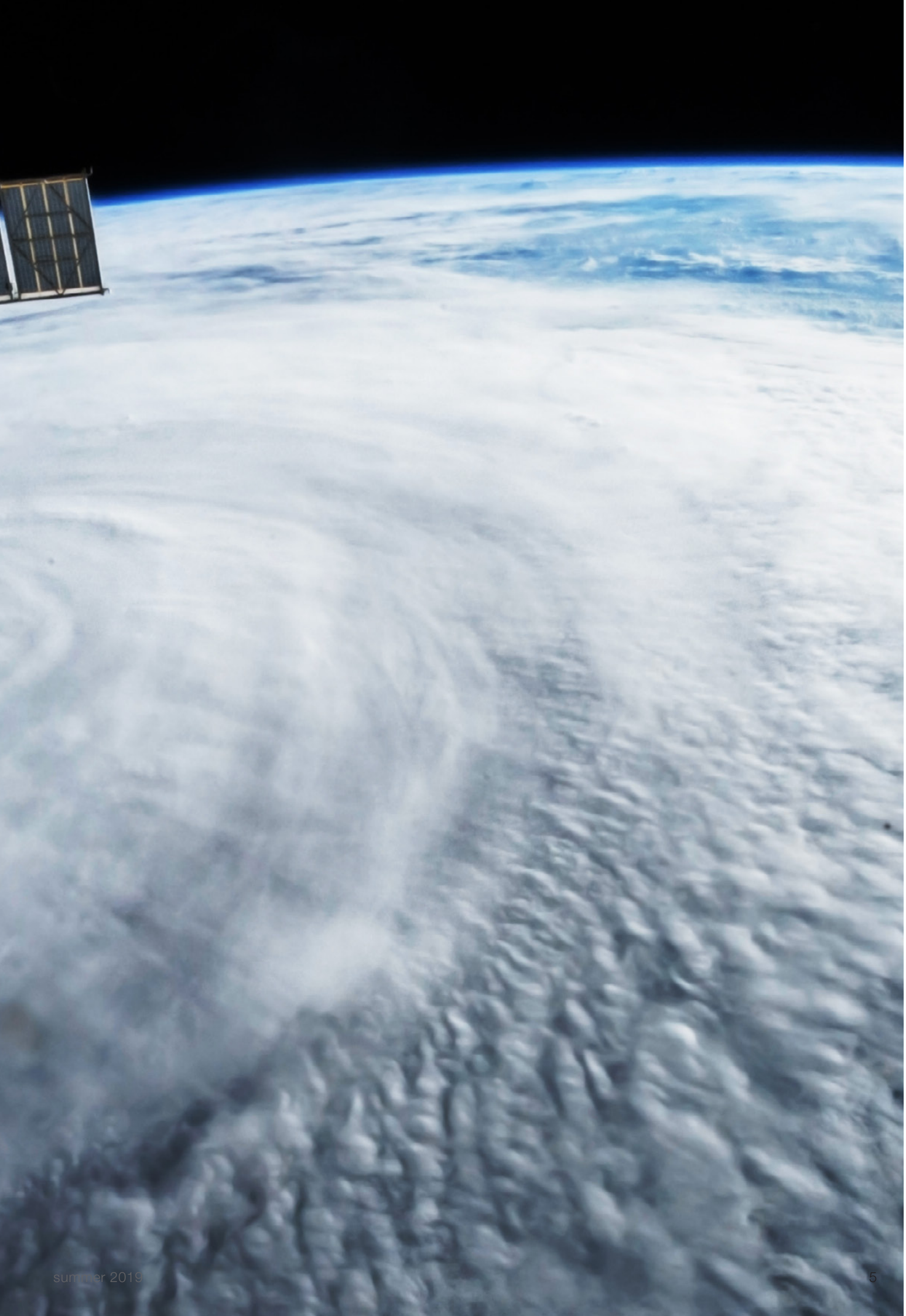
Emergencies need to be understood not only in terms of systemic challenges to functioning existing institutions, including critical infrastructures. Alejandra Elizondo and Mauricio Dussauge-Laguna discuss the institutionalization of a new regulatory body and question whether such capacity building has relied on exceptional circumstances. The article by Jose Bolanos shows that an emergency, such as a terrorist attack or hurricane, is not merely challenging the capacities of regulatory actors to mitigate effects that are seen as a threat to systemic survival; it can also challenge the very foundations on which the authority of these actors is based. Emergencies present exceptional stress-tests for existing regulatory frameworks. They can quickly turn into emergencies for the regulators themselves, as capacities are found wanting, frameworks become contested, and authorities delegitimized.

This applies to novel areas of regulation, such as FinTech or emissions trading schemes, but also morally laden fields of intervention, as the article by Kristian Krieger and Nathalie Schiffino on the role of ethics experts in the regulation of biomedicine demonstrates. Finally, Chase Foster rounds off this issue of *risk&regulation* by critically assessing recent advocacy for technocracy in American government in his review of Cass Sunstein's new book on The cost-benefit revolution.

More generally, these are exceptional times for the practice and study of regulation. Beyond the continued state of emergency that is Brexit, fundamental questions are raised about the efficacy and legitimacy of regulated capitalism in general, and the role of regulation and regulatory institutions more specifically.

carr seeks to offer a venue for leading these debates and we hope that this issue contributes to the international conversation about the future of regulation.

Andrea Mennicken and Martin Lodge




SAND

Regulation of and by emergency

Martin Lodge and Andrea Mennicken consider political and systemic challenges of emergencies for regulation

'Sovereign is he who decides on the exception' – this statement by Carl Schmitt has regained prominence in contemporary debates about the future of democratic governance, regardless of Schmitt's hostility towards liberal democracy and support for the German Nazi regime. The question of the use and legitimacy of powers during states of emergency, 'the governing by exception', has become increasingly relevant in the world of regulation. After all, regulatory bodies are not just powerful actors during 'normal times', but play also significant roles during times of emergency, for instance in relation to the organization and rationing of access to medicine, allocation of energy and water supplies, or management of failing banks.

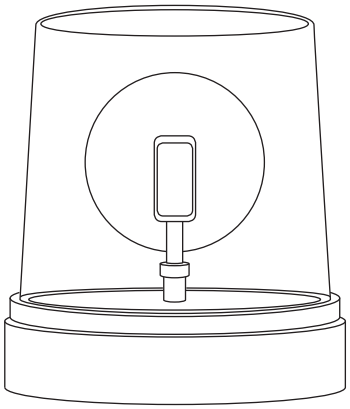
What defines an emergency in the context of regulation? What types of emergency deserve specific regulatory attention? How does a discussion focusing on emergencies differ from regulatory conversations about crises or failure? For one, emergencies need to be understood in terms of systemic challenges to the functioning and legitimacy of existing institutions, and normal, routine ways of life. Further, we need to distinguish between different types of emergency: emergencies can occur on regular, if unpredictable bases (such as hurricanes), or they might come as 'rude surprises' (such as 9/11 as a novel form of terrorism); yet other types of emergency may not at all be event-based, but materialize over time, in unpredictably linear and non-linear ways (such as climate change; see also the article on 'the new twilight zone between crisis and risk management' by Boin and Lodge in this issue). What unites these different phenomena is the systemic threat that they pose to the survival of systems, for instance, essential infrastructures or entire civilizations. In doing so, an emergency is not just challenging the capacities of state (and non-state) regulatory actors to mitigate effects that are seen as a threat to systemic survival (including survival of the state itself); it also challenges the very foundations on which the authority of these actors is based.

It is this existential threat to survival that is often said to justify the use of exceptional forms of authority. In the context of war, the use of exceptional authority is linked to military force and the ability to constrain civil liberties. Such uses, however, are usually checked and legitimized through ex-ante approval and ex-post accountability provisions. Underpinning such commitments is a supposedly shared understanding of the limited and exceptional nature of these 'states of exception'. It is therefore not just the power to decide on the state of exception that is important, the power to end states of exception is equally central to contemporary debates about liberal democratic governance.

These debates are also highly relevant for the world of regulation. After all, regulators are called upon to commit to 'do whatever it takes' to deal with emergency situations, whether these concern pandemics, bank runs or natural disasters. Yet, the governance of such moments of emergency, the regulation (and governance of regulation) of emergencies, is far less frequently discussed. Such discussions relate, firstly, to the inherent redistributional consequences of regulatory decision-making during emergency situations, and the problems these pose. On what justificatory basis should a regulator, for instance, make decisions about the rationing of electricity supplies? Emergencies might require a redirection of regulatory efforts towards different target populations. Take the example of vulnerable populations. New populations might become vulnerable as access to essential services (such as water) becomes restricted during an emergency, whereas those already recognized as 'vulnerable' might be 'protected' by existing emergency provisions relating, for instance, to hospitals and care homes. In contrast, other parts of the population might suddenly become vulnerable – for example, infant formula feeding where access not just to various types of formula, but also drinking water needs to be provided.

Secondly, there are questions of how the use of exceptional authority is granted and held accountable. It might be desirable to establish procedural mechanisms that grant regulatory actors the authority to use exceptional powers, such as restrictions on civil liberties. While such mechanisms might work in the context of military invasions and other security threats, it is less clear whether such mechanisms can be that easily deployed in the context of regulation. An official granting of emergency powers might not just require considerable time, it might also involve significant political conflict and disagreement. Even where political consensus on the need to grant emergency powers to regulators might exist, the actual act of granting these powers might still involve controversy.

At the same time, there is also a need to consider provisions defining how states of emergency and the use of exceptional powers are ended. Normalizing the exception can easily turn into an abuse of these powers. The notion of 'crisisfication' of decision-making draws attention to the biases that occur when decisions are made in a setting of crisis and emergency rooms. It also points to the diagnosed rise in decision-making



undertaken in explicit crisis settings. These settings are characterized by limited information flows (especially from the frontlines), and a sense of immediacy that stands in the way of debate and a long term, broader perspective. A reliance on exceptional powers allows for the continued sidelining of opposition to particular measures. The normalization of a state of emergency with the continued use of exceptional powers might therefore become a convenient political strategy. And it does raise considerable concerns for those interested in constitutional safeguards against discretionary state power.

Emergencies present exceptional stress-tests for existing regulatory frameworks. They can quickly turn into emergencies for the regulators themselves, as capacities are found wanting, frameworks become contested, and authorities delegitimized. After-the-event enquiries into the use and abuse of emergency powers can support some degree of restoration and 'coming together' at regulatory level, yet they might also further deteriorate relationships within society, especially when the use of emergency powers is seen to have had asymmetric effects. Similarly, extensive catalogues of recommendations following an enquiry invite tick-box responses rather than reflective consideration, with complex recommendations being long-grassed in view of more immediate priorities.

Preparing for emergences represents a particular challenge for both regulators and political systems more generally. The financial crisis and the pro-active role of regulators in it, particularly central banks, have been much discussed. In our view, such discussions should not be limited to the world of financial regulation. Regulatory experiences during the financial crisis have highlighted more generally that it is important for regulators to have a good understanding not just of their technical and legal capacities (and the limits thereof), but also a capacity to improvise and use discretion in (self-) disciplined ways. Put differently, regulators need to develop their professional comprehension of what their 'appropriate' position within the wider political system is. This implies the development of an understanding of the political implications of a (potential) reliance on exceptional authority, including constitutional implications. It also requires a broadened understanding of regulators' footprints on wider society during 'normal' and 'exceptional' times.

Likewise, an advanced conversation about emergencies requires a better understanding by the wider political system as to what the role of regulatory institutions during times of (potential) emergency can and should be. Such a conversation, amongst other things, needs to address questions related to the blurred boundaries between democracy and technocracy, and it needs to query the relative balance between professional autonomy and political control. In short, conversations about emergencies should not merely be about anticipatory regulation, and the development of regulatory regimes that can deal with emergency situations; they should equally encompass a far more general debate about the role of regulatory bodies within constitutional liberal democracy.

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The new Twilight Zone between crisis and risk management

Arjen Boin and Martin Lodge discuss the unique challenges for organizing oversight

Traditionally, the worlds of crisis and risk management have been clearly demarcated and neatly separated. The world of risk management is largely one of calculating probabilities of nasty events and assessing the level of impact should these materialize. It's about managing day-to-day activities so as to mitigate the likelihood of adverse events from occurring. The world of crisis management begins where the risk world ends. It handles 'risks come true'– acute events that are described in terms of urgency, threat and uncertainty.

These worlds are governed with very different tools. The world of crisis management is one of urgent decision-making, where a distinct threat has materialized. This is the world of action-packed crisis rooms and the chaos of Ground Zero, where emergency responders do the best they can. This is the world of the well-drilled professional who acts 'mindfully' (as Karl Weick would put it). It is the world of the crisis leader who must take timely and sometimes dramatic decisions. It is the world in which the strategic domain is separated from the world of operations by different professional cultures and perennial information bottlenecks. This is the world in which technologies are often found wanting, where planned efforts to coordinate the response network are undermined by inherent capacity limits.

In contrast, the world of risk management is one of careful assessment, calculation, regulation and monitoring. No immediate threat has been discovered and no urgency exists. But the potential threat has been defined and its paths of emergence are more or less known (or believed to be known). In this world, the day-to-day operation is marked by standard operating procedures governing reporting requirements, inspections and potential interventions aimed at altering behaviours so as to ensure that crisis does not occur. It is a world of monitoring to ensure timely discovery of emerging threats, but also to safeguard the smooth operation of the system in question. This is the world of ensuring inter-agency collaboration on the basis of (usually long-forgotten) memoranda of understandings. There is generally little involvement from organizational leaders.

The borders between these traditional worlds are defined by two key variables: urgency and uncertainty. In the risk world, the level of uncertainty is relatively low; the threat is defined, the chance that it may occur is known. There is no urgency, as the threat has not materialized in this world. In the world of crisis, the opposite is true; the level of uncertainty is high as is the level of urgency. This explains why these worlds have very different modes of governance. In practice, these worlds have been neatly insulated from each other.

Yet, this traditional distinction has become increasingly blurred. The recognition of more and more threats that may impact critical systems soon, or may not, has given rise to expanding definitions of crisis. Particularly relevant in this regard is the current fascination with so-called creeping crises, those slow-moving, hard-to-detect and ever-developing threats that lurk under the radar. Examples include demographic or climate change, the shifting security environment, exotic diseases in far-away countries, economic anomalies, energy challenges, and, of course, Brexit. Think, for example, of engaging with those banks found to be potentially at risk of requiring resolution, or, indeed, universities, hospitals or other care facilities facing potential financial collapse. These threats do not belong in the traditional risk domain, because they are hard to precisely define and consequences cannot be appropriately assessed; they are rejected in the crisis domain, as they have not reached the threshold that must be met to be recognized as a real crisis event.

This is the contemporary, and new, Twilight Zone between risk and crisis land. It is marked by deep uncertainty about both the chance that a threat may materialize and the escalatory trajectory it may follow. In this domain, threats do not develop in a linear or even progressive fashion; apparent improvements in the situation may conceal longer term deepening of the threat(s). This deep uncertainty is accompanied by an absence of immediate urgency, even if the destructive potential of the threat is easy to imagine, including likely accompanying political dynamics.

This Twilight Zone stretches into the risk domain, which has increasingly become focused on crisis, with regulatory regimes emerging to prepare and manage acute events, such as banking resolution regimes. It stretches forward into the crisis domain, which is acutely aware of creeping crises that at any moment may explode onto the societal and political stage. It is a zone that is likely to stretch wider, as our critical systems become more intertwined with other, cross-border systems. This ongoing development grows vulnerabilities to transboundary threats that originate in far-away domains but can easily travel the 'un-bordered' links between systems everywhere.

This new world of blurred risk and crisis management brings distinct challenges that create a need for a new type of organization. This is the world where some threat has been identified,

but where urgency is not, as yet, present. In fact, urgency (i.e. the 'acute crisis') may never arise. The overall system continues to operate as if under normal conditions, which makes it hard to convene special meetings in crisis rooms or initiate monitoring and measures that require scarce resources.

Attention is one of those scarce resources. Organizations are usually 'busy' and devoting specific resources to monitoring requires overcoming objections as to whether certain conditions for taking dedicated measures have been met. Furthermore, attention needs to be maintained, which is a challenge within single organizations, let alone where such efforts require inter-agency cooperation. A related challenge pertains to the source of attention: we don't know much about 'who' is or should be paying attention. This is not the stage during which organizational leaders are easily involved, although the nature of the challenge implies that they should be informed. It may well be politically unwise to ignore the threat, however vague, if only because in hindsight the very mention of the threat will have accountability implications; at the same time, paying attention is akin to developing the crisis potential of the threat (when politicians and agency chiefs pay attention, it must mean that it is important).

Another challenge is to determine when a monitored threat no longer fits the risk domain or when it must be 'promoted' to the crisis domain. When is a threat a manageable risk? When does it become a crisis? When insolvency hits and the shutters literally come down on certain activities, the issue can immediately be forwarded to the crisis domain. In absence of urgency in this twilight domain, there is always a temptation to move a threat back to the risk domain – as there are no established governance structures to deal with this particular type of phenomenon. In other cases, it may be a challenge not to go in outright crisis mode, declaring circumstances to be critical and urgent.

This blurring of the worlds of crisis and risk presents distinct challenges for the worlds of research and practice. We lack a proper mode of governance for this domain. We can point to a number of areas where this new type of crisis management has already started to assume importance, without much recognition of the unique challenges involved. These organizations prepare for 'bail ins or bail outs' or for spare capacities for 'stranded' patients, students or holiday-makers that require concerted action that goes beyond the day-to-day monitoring of organizational activities by one regulator or another. We suspect that these areas are not the only ones that feature this new type of crisis management, but they indicate how different these activities are from the traditional risk and crisis governance modes. Given the centrality of potential threats for social and economic life, it is high time that the unique properties of this Twilight Zone are placed at the centre stage of academic and practitioner attention.

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Regulatory experiments, legitimacy, and emergency

Jose A. Bolanos draws attention to the challenge of determining what an emergency is and finding appropriate ways of response

After high school, I spent three years as a firefighter. Naturally, I was very excited about the opportunity to reflect on my academic work in the context of the study of regulatory emergencies. There is no established definition of a regulatory emergency, but here I define it as an unexpected threat that calls for urgent action by a regulator. Two seemingly disconnected anecdotes from my firefighting experience came to my mind when drafting this article: first, that cats in trees most likely will not constitute an emergency; and, second, that fire engines go much faster once a fire is confirmed. While seemingly disconnected, these anecdotes refer to a joint challenge, namely, that of determining what an emergency is and defining appropriate ways of response. This joint challenge points to a puzzling paradox in dealing with regulatory emergencies. Below I examine this paradox in reference to the case of the Chicago Climate Exchange (CCX), a regulatory experiment that failed.

The CCX, and legitimacy

The CCX was launched in the US in 2003 as the world's first voluntary greenhouse gas emissions reduction and trading system. While private, the CCX aimed to make, monitor and enforce rules in the context of climate change. So, although not a state 'regulator', the CCX sought to guide the activities of others in a way similar to a regulator (indeed, making, monitoring, and enforcing regulations). Therefore, it is possible to think of it as, at least, a regulatory experiment.

Legitimacy is a concept that arises often in the context of regulation. In a way, everyone 'knows' that legitimacy matters. Accurately defining legitimacy, and explaining why, when, and how it matters in different circumstances and to different actors, however, is challenging. It needs to be clear, that thoroughly discussing legitimacy is impossible here, as legitimacy is a multi-faceted concept with many different components. For example, it is possible to speak of input (i.e. participation by relevant stakeholders) and output (i.e. results) mechanisms (Scharpf, 1999), or of pragmatic (i.e. self-interested evaluations), moral (i.e. normative evaluations), and cognitive (i.e. evaluations based on what is expected or comprehensible) mechanisms (Suchman, 1995). Regardless of its many facets, at a general level, legitimacy can be described in terms of approval by audiences, following Suchman's (1995: 574) definition of legitimacy as 'a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'. It is agreed that legitimacy is important for public and private regulators, and I will focus here on its importance for a regulatory experiment like the CCX.

Voluntary regulatory experiments like the CCX cannot enforce rules. This fact differentiates such initiatives from state regulators, because it means that users that do not see a benefit in them will simply not participate, whereas state regulators can impose rules on the said type of users. However, for their services to deliver any benefit, initiatives like the CCX need at least some sort of approval by audiences, or buy-in, i.e. legitimacy, as defined above. What kind of legitimacy, and how much, is an open question and is likely to differ, if we take an experiment like the CCX or a state regulator. But the fact is that both need some means that events that lead to a loss in legitimacy can represent a threat to their existence and hence lead to a regulatory emergency (at least from the perspective of the regulator and its interest in continued survival). The CCX is an interesting case in this context because it faced various legitimacy-losing events that eventually led to its demise.

A series of emergencies, or maybe not

The CCX started as a promising experiment. It supported itself on calls for action in the context of the US's backing away from the Kyoto Protocol, which would have led to the creation of a regulatory framework for carbon trading (as it did in the EU with the Emissions Trading System). Accordingly, the CCX aimed to begin filling in the gap left by the non-signing of the Kyoto Protocol, hoping to deliver emission reductions while catalysing action to help the case for launching a US-specific legally enforceable regulatory framework to compel US actors to engage in emissions trading (a compliance framework). Additionally, the CCX had support from prominent US figures, such as Richard Sandor, a renowned name in finance, and presidential ex-candidate Al Gore. Even Barack Obama allegedly had a part, as he was a board member of the Joyce Foundation, CCX's first financer. Moreover, the CCX launched with impressive performance, certifying over ten million carbon offsets per year between its launch and 2008. Around 2008, however, the market began pricing CCX offsets down, bringing average prices from $4 per offset to less than $1 per offset. Two years later, the CCX exited the market with near-zero scale and almost-negative prices.

While the CCX launched with momentum, the experiment rapidly faced criticism. Leading civil society organizations criticized the programme for being too friendly to industrial interests. In 2006, 18 of them signed a 'boycott' letter. For many

regulators, a boycott from leading civil society organizations would be a nightmare, an emergency, indeed. The CCX, however, was willing to sacrifice legitimacy with this audience for the sake of gaining participants for the programme, typically large businesses with significant emissions. Criticism was, of course, not ideal, but the CCX's management, at that time, was focused on gaining momentum and growth. In other words, the CCX most likely did not see these events as emergencies, and it most certainly did not act with urgency towards them.

Yet, over time the volume and severity of criticism faced by the CCX increased. A particularly troubling event, for example, came in the context of an Oscar ceremony. Acting and directing nominees for the Oscar receive a gift bag. In 2007 a company known as TerraPass decided to include a certificate for CCX offsets in the said bag. However, the offsets in the said bag were traceable to one of the most polluting companies in the US, which set the bed for poignant criticisms. Some companies pay millions of dollars to get a second-long corner-screen spot in the context of the Oscars. The CCX got much more attention for free. Only, in the CCX's case, the publicity was negative. Yet, the debacle did not end the CCX. While the ceremony in question took place in 2007, a member of the CCX's staff noted in an interview with me that the final decision to close operations happened only around 2009. The CCX had continued to justify its course of action with the need for achieving scale as a pre-compliance step.

The CCX's justification strategy lost some power over time. Initial legitimacy-losing events did not seem to have had much impact, but one of the experts I interviewed recalled that the Oscars situation made a dent. Regardless, the CCX managed to survive this event. Up until that point, the CCX's ability to discern between ordinary events (cats in trees) and 'real' emergencies, and its ability to respond with the appropriate level of urgency was at least marginally adequate. The adequacy of the strategy is hardly surprising. The CCX 'had a demonstration effect' (Meckling, 2011: 142) that enabled its livelihood.

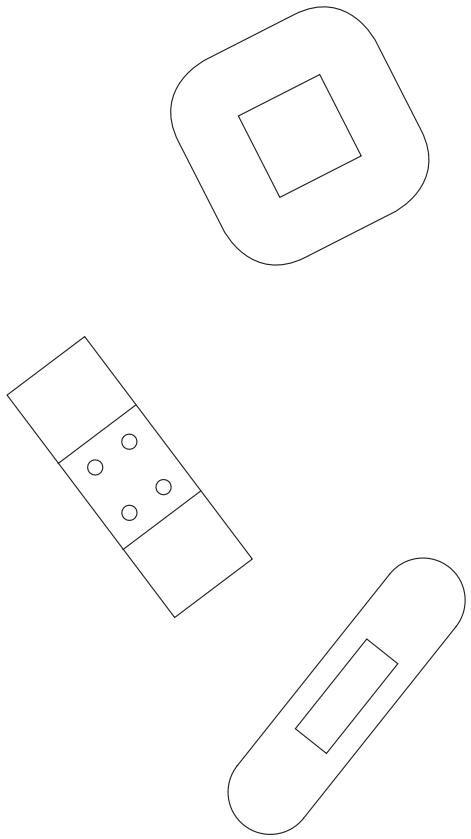
In 2008, however, Republicans gained control of the House of Representatives and the backlash against the idea of a compliance framework increased gradually. Originally, a compliance framework seemed politically feasible. Between 2003 and 2007 the Republican Senator John McCain and the Democrat Senator Joseph Lieberman made three attempts to pass a Climate Stewardship Act in support of such a framework. The three bills were defeated, but the second and third attempts were possible because the matter enjoyed sufficient bipartisan support as to consider trying again. However, a subsequent attempt to pass a climate bill known the Lieberman-Warner Climate Security Act that was introduced in 2007 and voted on in 2008, failed more clearly. This bill was still bipartisan, but McCain distanced himself from it due to the cost to his Presidential bid, which evidenced that commitment by Republicans had waned. By the end, even the support from Republicans who had initially been in favour of carbon trading was nullified by their constituencies. Failure to pass the bills meant that the CCX lost one core component of its justification, the possibility of vindicating its flexibility on being a pre-compliance experiment.

The CCX's exit was no less controversial than its existence. The organization sold to a European company called the Intercontinental Exchange for £395 ($622) million (Grant and Weitzman, 2010) at a profit for investors. Intercontinental Exchange was interested in the CCX's trading infrastructure to use it in the context of the EU's Emissions Trading System, so it subsequently weaned down the US operations. It is debatable whether Intercontinental Exchange could have done anything else, though. A recovery was unlikely to happen given that the CCX had by then lost approval from audiences across civil society (exemplified here with the boycott),and the general public (as with the Oscars). Accordingly, there was no demand for CCX offsets.

Emergencies, risk, and uncertainty

The CCX's history can be summarized as follows. The CCX willingly incurred actions that catalyzed legitimacy-losing events. Its management of these events came down to framing flexibility as a necessary pre-compliance step. Neither of these strategies indicates that the CCX considered initial legitimacy-losing events as emergencies deserving urgent action. In a way, this line of thinking was correct as, initially, the CCX managed to achieve scale, which was its primary goal. However, without the demand for CCX offsets that would have derived from a compliance market, the initiative would have needed demand from elsewhere. This was next to impossible for the CCX, which had enraged most, if not all, environmentalist audiences in the country.

For the CCX, thus, the difference between correctly and incorrectly judging an event as an emergency, and responding to it with appropriate urgency came down to a future contingency. The situation can be explained in the terms of risk; the CCX traded present scale for future risk. So, it is fair to say that it



is critical for regulatory experiments like the CCX to correctly judge the cumulative effects of single legitimacy-losing events. Yet, when the future is unknown, it is hard to move from acknowledging the need for correctly judging single events to actually judging them correctly. It follows that in conditions of uncertainty about future events, all legitimacy-losing events are not necessarily emergencies. It would be hard to overstate the need for further research into this paradox.

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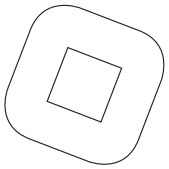

Regulating financial technology

Alison Harcourt considers risks and opportunities of FinTech and the challenges that regulators face

Financial technology (FinTech) is greatly changing the way in which citizens live and work on a day to day basis. Fintech refers to technological solutions for electronic transactions such as blockchains, cryptochains, digital currencies and peer-to-peer online lending. The introduction of cryptocurrencies around the globe, such as Altcoin, Bitcoin, LiteCoin, PeerCoin and Ripple, and the adoption of national e-currencies, such as the Bank of England's RSCoin and the M-Pesa in Kenya, are accelerating FinTech use. The growth in mobile phone use, interfaces such as Alexa and Google Home Fiber Voice and social media platforms ease the payment of online goods and services.

As the world moves towards paperless money and online transactions, London has established itself as a world hub for FinTech. The UK's FinTech was worth £6.6 billion with an annual growth rate of 22 per cent between 2014 and 2016 according to HM Treasury (2018). The greatest bulk of this income is from cryptocurrency transactions and peer-to-peer lending. UK Trade & Investment (UKTI) estimates the highest growth to be in 'peer-to-peer lending, online payments and the data and analytics products (credit reference, capital markets and insurance)' which represent 60 per cent of the market. In its 2018 FinTech strategy, the UK Treasury stated 'the UK market is one of the most attractive markets in Europe based on our analysis of market opportunity, availability of capital and regulatory environment'. With more people working in Fintech in the UK than in New York, Singapore, Hong Kong and Japan combined, the UK market has become an important part of the global economy. In face of these developments, regulatory responses have invariably been characterized as a game of catch-up. At the same time, regulatory responses have also been strategic, involving processes both of regulatory competition and cooperation.

The overall regulatory goal has been to encourage solutions and new market players to FinTech with the support of government measures. The UK has been particularly proactive. This began in the UK when the Financial Conduct Authority (FCA) was looking for innovative ways to move the UK out of the financial crisis and at the same time to reform and regulate a changing financial sector. The FCA established Project Innovate, 'regulatory sandboxes' and its FinTech Initiative. The sandbox schemes waived a series of FCA rules for a small number of FinTech start-ups. This was to create a 'safe space' for company innovation where companies could test new goods, services and delivery mechanisms. The idea was not new but was based on 'Innovation Deals', such as the Green Deal programme of the Netherlands. Such programmes 'do not support "normal" business activities, but would be restricted to innovative initiatives that have only a recent and limited or even no access to the market with the potential of wide applicability' (European Commission, 2016).

The first FCA sandbox in 2016 fostered 24 companies.[1] By 2018, it had reached its fourth cohort with 29 companies.[2] This attracted new start-ups to the UK such as SETL which worked in the retail sector as the first company to use a digital ledger. At the time of writing, the FCA was running 'Tech Sprints', assisting companies to innovate on the regulatory front. In 2018, the FCA was also running Innovate Finance events in conjunction with the Treasury and the Department of International Trade.

The UK sandboxes triggered interest from the European Commission and states around Europe. FinTech sandboxes have begun to emerge in Denmark, Germany, Ireland, Netherlands and Sweden. Globally, this was followed by regulatory sandboxes being set up in Hong Kong, Australia and Singapore.

Other UK-led initiatives have since been noted such as the relaxation and introduction of flexible rules for selected new market entrants and the introduction of self-regulatory trust schemes. These include FinTech developments by the US Federal Reserve Board, US Treasury and Securities and Exchange Commission (SEC) and the incoming US financial law which raises the Dodd-Frank threshold from $50 billion to $250 billion for smaller enterprises and eases restrictions for FinTech (Thomas, 2018). Trust schemes include the European Union's eIDAS Regulation on electronic identification and trust services for electronic transactions in the internal market which came into effect in 2016. In the US, regulatory guidance has accompanied the legality of cryptocurrencies via the Financial Crimes Enforcement (FinCEN) agency and the Internal Revenue Service requirement that intermediaries have to clear with them prior to establishment (IRS, 2018).

In the UK, FinTech was also seized upon for the establishment of new trade relations. Cross national cooperation with the FCA involved, for example, setting up RegTech partnerships with Australia and Singapore in 2017. In 2018, FinTech was a key highlight of UK trade negotiations with India where the two partners aimed to 'deepen bilateral collaboration on FinTech and explore the possibility of a regulatory cooperation agreement' (Joint statement UK-India, 2017) including the establishment of a 'FinTech Bridge' between respective regu-

latory authorities. Indian and African states are of particular interest to the UK given the growth in FinTech. Citizens, particularly in rural areas, have limited access to banks and normally financial transactions are done via post offices and other local intermediaries which incur time and fees (World Bank, 2017). Mobile phones are rapidly alleviating this problem with applications and online bank accounts which increase financial inclusion of citizens in the economy.

FinTech presents many advantages particularly as it substantially lowers the cost for transactions in comparison to fiat money. However, the pace of technological change also presents many challenges. Financial services have for decades been operated by established incumbents (banks and intermediaries) with cultures that often slowed technological adoption and barred entry for new operators. Similarly, technological solutions are developed by the largest tech companies worldwide presenting problems of market concentration, customer lock in and lack of interoperability. Lastly, the need for customer authentication often requires technologies such as device fingerprinting, voice and facial recognition as well as biometric data which is increasingly used to authenticate identity. For example, India has introduced the AADHAR card which has registered biometric data (including iris scans and thumb prints) of over 1.2 billion people. The creation of huge databases presents not only vast opportunities for FinTech on many fronts but also challenges to security and privacy. International payments also encounter cross-border problems of data localization and passporting.

The UK however is clearly acting as policy entrepreneur in steering the future trajectory of FinTech development and how this game at regulatory competition will eventually develop, what trajectories will become critical, and how regulators will be positioning themselves in FinTech represents one of the key regulation research agendas over the coming years.

1 Billion, BitX, Blink Innovation Limited, Bud, Citizens Advice, Epephyte, Govcoin Limited, HSBC, Issufy, Lloyds Banking Group, Nextday Property Limited, Nivaura, Otonomos, Oval, SETL, Tradle, Tramonex and Swave.

2 BlockEx, Capexmove, Chasing Returns, Community First Credit Union, Creativity Software, CreditSCRIPT, Dashly, Ehterisc, Finequia, Fractal, Globacap, Hub85, London Media Exchange, Mettle, Mortgage Kart, Multiply, Natwest, NorthRow, Pluto, Salary Finance, TokenMarket, Tokencard, Universal Tokens, Veridu Labs, World Reserve Trust, Zippen, 1825, 20|30.

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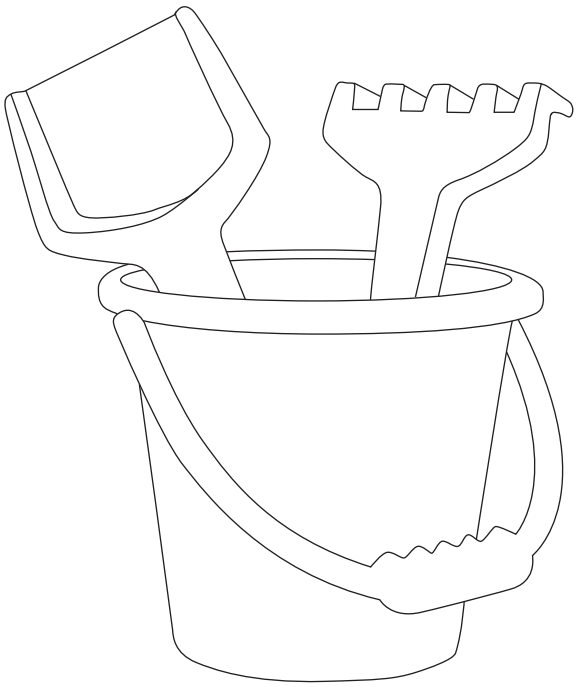

Behavioural interventions and iterative policy-making

Geoffrey Myers reflects on behavioural insights-oriented remedies in economic regulation

The limits of 'homo economicus' and the significance of behavioural biases in consumer decision-making have long been recognized, but recent years have seen a burgeoning of research by both academics and policy-makers. Regulation is no exception with a growing literature and a developing body of experience from testing and evaluating interventions based on behavioural rationales – often called consumer-facing or demand-side remedies (Cavassini et al., 2018).

The range of behavioural biases by consumers are well established. They include: loss aversion, bias towards the present over the future, disproportionate effects of anchors or targets, that different framing can substantially change consumer choices, over-confidence, and limited attention. Such biases can lead consumers to make decisions that do not seem to be in their own best interests or open them up to exploitation by suppliers. These biases are also increasingly at the heart of regulatory interest; after all, there is a tendency of economic regulators to focus on creating conditions for informed consumer choice, enabling individuals to partake in markets (see also Lodge and Mennicken, 2018).

In this vein, a recent **carr** workshop focused on the design of regulatory interventions; if we assume that consumer harm based on behavioural biases has been established, what are the opportunities and regulatory failure risks associated with consumer-facing remedies? Workshop participants were drawn from a range of regulators, academic disciplines and industry, who shared their respective experiences and perspectives in sectors as diverse as energy, financial services, online hotel booking, and telecommunications.

Opportunities arising from the behavioural insights agenda build on the potential to empower consumers through the three 'A's: access to relevant and useful information, which allows them meaningfully to assess their options, and then make well-informed decisions to act. The pivotal key to the success of these remedies is achieving the desired demand-side responses by consumers. In turn, this can be reinforced by supply-side responses by providers, especially if they compete against each other to gain the business of more informed and engaged consumers. This, in turn, can lead to a virtuous cycle.

But how can regulators identify the most effective consumer-facing remedies? Best practice involves empirical testing of proposed remedies, such as through consumer research, 'laboratory' experiments, field trials (randomized control trials) or natural experiments (UKCN, 2018). Such techniques have been used extensively in some regulated sectors, such as financial and energy markets.

Workshop participants emphasized the importance of an evidence-based approach – not opining from an ivory tower how consumers could or 'should' behave, but instead gaining insights from real-world testing to identify which approaches are best suited to gain consumers' attention and engagement. Results of empirical testing are often unpredictable because consumer behaviour can be very context specific, so that it can be unreliable to read across the past experience in one market to predict the effect in another.

Remedies based on providing better or more accessible information to 'nudge' consumers often have a positive but modest impact. But, in some circumstances, they can be more effective if they are well designed. A good example is that of a recent trial by Ofgem in the context of encouraging greater consumer switching. Energy markets have been the subject of much investigation by academics and regulators, with the adoption over time of a range of consumer-facing remedies and ongoing experimentation to stimulate greater consumer engagement in terms of consumer choice in the marketplace. The evidence suggests slowly rising rates of consumer switching in the sector. However, more than half of energy consumers still remain on expensive default (or 'standard variable') tariffs despite large savings being available by moving to a fixed-term tariff, e.g. typically £300 per year.

Ofgem conducted one trial with 55,000 customers of a large supplier who had been on standard variable tariffs for three years or more. The remedy being tested included sending three letters to set out the offer of a single collective switch tariff, with helpline support available both online and via telephone. In the trial the remedy had a clear and substantial impact on behaviour in terms of increasing consumer switching rates to 22.4% compared to only 2.6% in the control group that did not receive letters (Ofgem, 2018). The greatest impact in this trial was from using letters (which in an increasingly online world were seen as novel) and the supplier's branding (which had a larger effect than the letters that used the branding of the regulator).

The workshop also discussed how regulatory failure can arise due to ineffectiveness or unintended consequences. First, there can be a lack of demand-side response, such as a small change in consumer behaviour (e.g. another Ofgem trial with a single letter offering three cheaper tariffs from other suppliers

only increased switching from 1% to 1.5% for one supplied with an Ofgem-branded letter (although the average across three suppliers and trial variants was higher at 2.9%) (Ofgem, 2017). Or there is the risk of a fading impact over time since switching once does not guarantee future consumer engagement.

Second, there is a risk that remedies can even have the opposite to the intended effect. For example, disclosure of broker commissions on cheaper mortgages led participants in an experiment in the USA to increase their take-up of mortgages that had no such disclosure even though they were more expensive. Similarly, well-intentioned remedies to protect consumers can inadvertently limit competition, such as improved rights and information about doorstep selling potentially creating undue over-confidence, thereby reducing consumer search and competition (Fletcher, 2016).

Third, there can be offsetting demand-side responses. An example is a field trial conducted by the Financial Conduct Authority (FCA) about consumer-facing remedies to encourage larger credit card debt payments than the contractual minimum. On one measure, the remedy superficially appeared to be successful as it led to a large increase in the use of direct debits for automatic fixed payments at levels chosen by the consumer (up from 29% to 50% of credit cards). However, this increase in automatic payments was matched by an offsetting decline in irregular manual payments, leading to no overall effect on consumers' debt (FCA 2018). This experience emphasizes the importance of casting the net broadly when seeking to measure success.

Fourth, there can be offsetting supply-side responses by suppliers that can find creative ways to evade or bypass the remedy, or they can react to one price being pushed down by increasing another – this is often called a 'waterbed effect'. Supply-side responses are harder to test empirically in advance but there is well-established empirical evidence and theoretical models suggesting how they can arise, e.g. the 'ripoff externalities' analysed in Armstrong (2015). Their relevance is also recognized by regulators, such as the Competition and Markets Authority (CMA) which recently noted that remedies to address the so-called 'loyalty penalty' of higher prices to longstanding customers can lead to a waterbed effect. Declines in these higher prices can reduce the incentive and ability of suppliers to offer low upfront prices to attract new customers. As a result, these upfront prices may rise, and the overall strength of competition could be weakened (CMA 2018).

The range of possible positive and negative effects suggests that a desirable approach for regulators is 'iterative policy-making': after identifying consumer harm arising from behavioural biases, to conduct careful research, tests or trials into effective interventions, which can then be implemented, monitored and evaluated, leading to refinement in the light of evidence of their practical success or failure.

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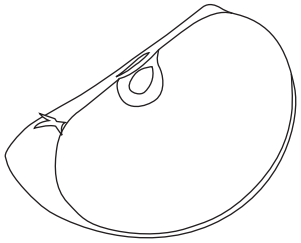

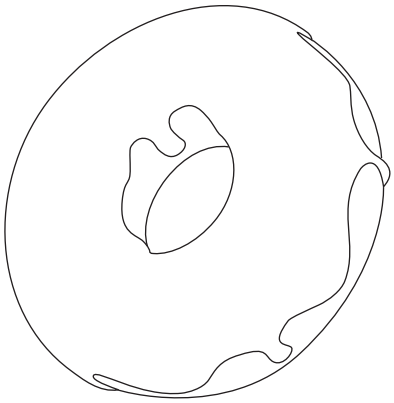

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From designer babies to surrogate mothers: The role of ethics experts in regulating biomedicine

In the wake of the scandal over gene-edited babies in China, Kristian Krieger and Nathalie Schiffino discuss what role official ethics advisory bodies can and should play in regulating biomedicine

Governments and scientists struggle to develop suitable regulatory responses to the rapid advances in biomedical research and technologies. Biomedical advances, in particular interventions into the human reproductive processes, such as human cloning, stem cell research, and post-mortem insemination, raise complex ethical questions.

Two recent headlines underline the challenge. In November 2018, Jiankui He, professor of biophysics at the University of Shenzhen, announced the birth of twins, known by their pseudonyms Lulu and Nana, whose DNA was edited to increase their resistance against being infected with their father's HIV. The response to this news were swift and condemning, especially by scientists working in this field, calling the experiments undertaken irresponsible, unethical, and even monstrous. Critics point to the violation of numerous international and Chinese ethical guidelines by He, including questions about the medical necessity of the intervention, the consent by the parents, and the veil of secrecy under which the experiments were conducted.

A few months earlier, in summer 2018, French President Emmanuel Macron called for a public debate on medically assisted reproduction. While being in favour of such assistance in general, Macron excluded surrogacy, i.e. carrying out a baby for someone else, from his favourable assessment. Macron's ambivalent position highlights value conflicts, here the right to a family or children versus respect for the dignity of the female body, often encountered when governing biomedicine.

As professional self-regulation shows its limits and policy-makers are compelled to get involved in these policy areas characterized by high technical complexity and value ambiguity, recent decades have seen the proliferation of ethical policy advisory bodies set up by governments. Ethical advisory bodies often bring together eminent experts and practitioners from the technical fields in question – along with lawyers, social scientists, philosophers, and experts from other disciplines.

But can ethical expertise really aid political decision-making given that different viewpoints can claim equal credibility? What legitimates such expertise given that it results in unelected experts influencing how decision-makers address societal value questions and conflicts? To better assess the actual role and influence of such bodies, we take a closer look at Belgium's Advisory Committee on Bioethics (BACB) and its work on assisted reproductive technologies (ARTs).

Biomedicine and its regulation in Belgium

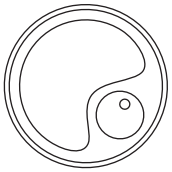
Belgium's medical services are among the leading providers of ART treatments in Europe. The country has one of the highest per capita numbers of treatment cycles and has become a major recipient country of patients from other countries seeking treatment.

This leading position of Belgium's providers of ART has been facilitated by the state's permissive regulatory stance towards the treatments. In fact, for a long time, governments in Belgium relied on self-regulation by the medical professions. However, between 2003 and 2009, the Belgian government introduced a comprehensive regulatory framework, covering a broad range of issues such as reproductive cloning, use of embryos for research, post-mortem dissemination, and gamete donations. Intriguingly, even though Belgium had its fair share of controversy over reproduction (as a constitutional crisis over liberalising the abortion law in the 1990s showed), the debate and adoption of the regulatory framework concerned with ART remained publicly largely uncontested.

Ethical expertise in Belgium's biomedicine regulation

As the legislation was discussed, policy-makers were able to draw on opinions by Belgium's Advisory Council on Bioethics (BACB – Comité consultatif de Bioéthique de Belgique). The BACB was set up as an advisory body to the government and parliament as early as 1993. It has, since then, produced more than 70 opinions, 22 of which were concerned with ART issues, and it established itself as the leading expert body in bioethics in Belgium.

The proliferation of opinions – in most cases following the request of Belgium's policy-makers – demonstrates that ethical expertise exists and is in fact systematically sought by governments. The opinions themselves provide statistical, juridical, and ethical arguments and facts before delivering concrete recommendations to policy-makers. What is notable is that



BACB opinions, including those directly related to ART legislation, include different options and viewpoints within a single opinion.

This diversity of viewpoints represented in the opinions affects the BACB's impact on policy-making. Direct influence on legislation is limited and selective, necessarily weighting some viewpoints and options over others. A case in point is surrogacy motherhood. Several attempts have been made to regulate the practice but to no avail. The corresponding opinion by the BACB is complex, reflecting divergent perspectives on several aspects of surrogacy motherhood, such as the relationship and contract between the surrogate mother and the parents or managing potential risks of commercial exploitation. Opinions including diverse positions fail to provide policy-makers with clear-cut guidance to aid decision-making.

While the ethics experts' direct influence is thus limited, it is important to take into account other pathways through which experts can play an important role in developing policies. Different positions found within the opinions are frequently used by Belgium's parliamentarians to clarify their own positions in debates, anticipate conflicts, and develop compromises. In other words, the diversity in views allows Belgian parliamentarians to use expertise strategically in the policy-making process. Moreover, being composed of ethical and legal experts, as well as medical practitioners, the BACB acts as a relay between practitioners and legislators in developing and implementing regulation. Notably, the BACB promoted the idea of requiring 'conventions' (a form of contract) as a prerequisite for treatments. Specifically, conventions define terms of an agreement between the treatment supplying centre and the patient, for instance, about the destination of the frozen gametes or the rights and duties of the parties linked by surrogacy motherhood. Conventions have been in use by ART centres in Belgium – the BACB's promotion ensured that the practice received recognition as a legal and procedural concept at the federal level.

Influence and embeddedness of ethics bodies

The specific pattern of influence of Belgium's ethics council is interesting for a number of reasons. The limited direct influence mitigates concerns about the undue influence of unelected experts on questions about life and death. Ethics councils – even if they concentrate knowledge-based authority – remain advisory bodies, not decision-making bodies. This purely advisory role is also reflected in the fact that President Macron launched a public debate even though the French equivalent to the BACB, the Comité Consultatif National d'Ethique, had provided its opinions already.

The indirect forms of influence, in particular the politico-strategic use of BACB opinions by Belgium's policy-makers, tell us another story. Belgium's political system is characterized by deeply institutionalized cleavages, most notably the one between secular and faith-based pillars. This leads to political strategies among the groups and parties associated with the different pillars to avoid inter-pillar conflicts and seek political compromises.

The form the BACB has taken, its interventions, and the pattern of influence, echo the specific needs and constraints of this system. The experts gathered in this body are chosen to represent the secular and religious pillars of Belgian society. By reflecting different positions within opinions (in contrast to, for example, the French council which delivers consensus opinions), they enable a well-reasoned debate with a view to facilitate cross-pillar compromises among politicians. Moreover, conceptual and procedural innovations by the council's experts, as in the case of conventions, can often be accommodated more easily than singular positions in contested fields such as biomedical regulation.

Outlook

As biomedicine advances ever more rapidly and medical self-regulation struggles to keep up, governments need to engage with complex morality policies where technical complexity meets value debates. Faced with these challenges, governments turn to ethics experts. These experts can provide important insights by revealing and clarifying value conflicts and possible arguments. In spite of the scientific and ethical authority of experts, fears of an 'expertocracy' seem unwarranted as the case of the BACB shows that advisory bodies are embedded and thus institutionally constrained in Belgium's

political systems. However, this context dependence of the role of experts also points to the need to analyse how expert bodies work in other countries and to what extent they assume there a more entrepreneurial and influential role.

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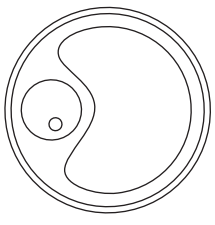
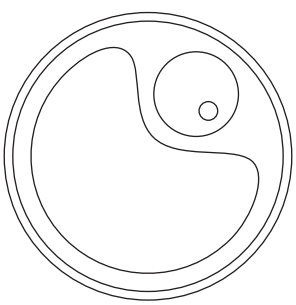




Steering regulatory agencies through their infancy

Alejandra Elizondo and **Mauricio I. Dussauge-Laguna**
consider the experience of Mexico's ASEA

The early days of the life of a regulatory agency are often seen as critical for its future standing and reputation. Statutory frameworks are being fought over, the role understandings are being developed, agency leaders are carefully selected to be in tune with the political zeitgeist, and staff with particular expertise are being recruited. There is consensus that these moments do matter for subsequent agency life. However, empirically we know rather little about how regulatory agencies develop their identity in their early infancy days.

In our research, we were allowed to investigate the early years of a new regulatory agency in the Mexican energy sector, the Agency for Industrial Safety and Environmental Protection (ASEA).[1] Our research suggests that ASEA succeeded in establishing itself as a professional and well regarded regulatory agency, both nationally and internationally. At the same time, however, the agency continued to face critical challenges in terms of structural and operational features, such as institutional and regulatory instrument design, inter-organizational coordination and internal capacity building. Taken together, the insights gleaned from the study of ASEA are important for those interested in the formative years of young institutions.

The background for the creation of this new agency was the Mexican Energy Reform of 2013. As part of a comprehensive reform programme under the presidency of Enrique Peña Nieto (2012–2018), the hydrocarbons and electricity markets were liberalized; the legal status and corporate governance of state-owned enterprises (Petróleos Mexicanos, PEMEX, and Comisión Federal de Electricidad, CFE) changed; and the regulatory framework was significantly transformed. Modifications to the regulatory landscape included the change in constitutional status of two existing regulatory agencies, the National Hydrocarbons Commission (Comisión Nacional de Hidrocarburos, CNH) and the Energy Regulatory Commission (Comisión Reguladora de Energía, CRE). These agencies' scope was expanded to include more markets and regulated entities. This jurisdictional expansion went hand in hand with considerable staff expansion.

Finally, these reforms also brought about the creation of a new regulatory agency: the Agency for Industrial Safety and Environmental Protection (ASEA). It was created to design and apply regulations and norms related to the industrial safety and environmental protection for all oil and gas-related activities. ASEA is internationally unique in its jurisdiction covering both industrial safety and environmental protection throughout the whole value chain of the oil and gas sector.

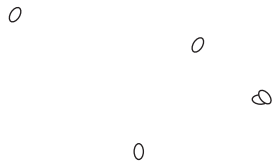
For ASEA this meant that it had to create a whole new strategy that covered both activities, each of which involve very different elements and risks (e.g. petrol stations in contrast to deep water exploration platforms). ASEA's current task is to identify and regulate risk activities. Its regulatory strategy demands protection of citizens and the environment, but also a profound understanding of potential benefits for and from the industry.

Two contrasting points of departure shaped ASEA's strategy. Environmental protection, in contrast to industrial safety, was in a more advanced state given international treaty commitments (especially the North American Free Trade Agreement, NAFTA). Despite the presence of regulatory standards with regard to the environment for over 20 years, these standards were developed by a highly fragmented set of regulatory bodies, at the regional and local level. For ASEA this presented the challenge of bringing together the existing norms and directives. In contrast, there was no formal industrial safety framework for oil and gas-related activities. Instead, the sector relied on self-regulation by the state-owned monopoly, Pemex. Private companies could only enter the market if they worked for Pemex.

The institutional landscape also represented a further challenge. ASEA was put under the remit of the Ministry of Environment (Secretaría de Medio Ambiente y Recursos Naturales, SEMARNAT) as a counterweight to energy sector actors within the government. It was established as a semi-autonomous agency. These two features are in clear contrast to the other two regulators, CNH and CRE, which by law have a ministerial status providing them with broader resources and a higher level of autonomy. ASEA's legal status not only constrains its margin for manoeuver regarding day-to-day activities (e.g. hiring personnel or acquiring IT services), but also limits the agency's political status compared to its regulatory counterparts (CNH and CRE).

Regulatory instruments and strategies

Given this complex institutional setting, how, then did this young agency steer itself through its infancy? Apart from acquiring competencies to address technical issues and assess potential impacts on the industry, increased energy demand and new technologies encouraging the growth in shared energy infrastructure between Mexico and the United States (e.g. transboundary pipelines and related infrastructure), as well as a growth in energy trade (mainly in natural gas), created demand for harmonized regulatory frameworks.



ASEA's response to these challenges was to launch a strategy based on regulatory risk management. The emphasis in terms of approach was on management- and performance-based regulatory regimes so as to ensure, on the one hand, an adequate level of oversight to encourage safety, and, on the other hand, flexibility to encourage compliance by the highly diverse industry. In doing so, ASEA set aside existing prescriptive rules. During our research, this process of moving away from a prescriptive rules-based approach was still ongoing. The issuance of norms (Normas Oficiales Mexicanas, NOMs) remained rather prescriptive, as these norms indicated on a detailed micro level, the steps each firm needed to follow. At the same time, instruments such as directives proved to be more flexible and closer to the agency's ambition to focus on broader guidelines. One key example for the latter was the introduction of the so-called System for Safety and the Environment, designed by each regulated entity following only general procedures to establish goals, activities, and a monitoring system.

ASEA was further exposed to numerous wicked issues. One of them was fracking. ASEA's position towards fracking remained undecided, reflecting wider controversies about emissions, water usage and pollution, as well as about production techniques. Another issue was methane. While there is consensus about the contribution of methane to climate change, the regulation of methane is characterized by uncertainty. Identifying sources for methane emissions has proven highly complex. Only few countries have attempted to tackle methane through regulation. Despite this uncertainty, ASEA did adopt a highly ambitious target, namely mandating all natural gas-related companies to establish a certain baseline and to reduce methane emissions by 80 per cent by 2025.

Institutional capacities and constraints

ASEA devoted considerable attention to strengthening its regulatory capacities, especially in terms of staffing. This involved innovative recruitment efforts to attract recent graduates from different academic fields (economics, law, environmental sciences, for example). It also included recruitment of recently retired experts from the industry itself (especially from Pemex). The combination of young public servants and industry veterans proved highly successful, particularly in areas such as the implementation of regulatory inspections or the development of new regulatory standards. The acquisition of greater analytical capacity was further supported by extensive training and development activities. Organizational 'culture' related exercises suggested that ASEA was a desirable employer.

Nevertheless, ASEA, as with so many other regulators, faced significant challenges in terms of staff retention. In contrast to the other constitutionally autonomous agencies, ASEA's legal status meant that its salary levels and career progression plans were regulated by the federal public administration's civil service laws. This meant that ASEA faced a challenge to recruit and retain staff, not just vis-à-vis the regulated industry but also other regulators. The salary cuts that were instituted by the incoming presidential administration are likely to further accentuate this problem.

ASEA also paid considerable attention to inter-organizational coordination. Despite its constitutionally 'junior' status, ASEA succeeded in creating a joint coordination scheme in partnership with the two other agencies, CNH and CRE. Regular meetings were held to consider areas of potential under- and overlap and to exchange information. The joint working also extended to merging procedures and inspections. Indeed, the efforts of coordinating inter-agency activities received official praise from the OECD. Whether, however, these mechanisms will survive in the future is somewhat questionable. The presidential rotation brought with it a considerable amount of staff turnover. As coordination among agencies was largely about good personal relationships, there was the risk that these activities would receive less attention in view of the new leadership of the different agencies. In other words, institutional commitments to work together were highly dependent on the political commitment by the agencies and the Ministry of Environment.

Conclusion

What general lessons can we draw from research into the early years of ASEA? On the one hand, ASEA is a surprising success story. In a very short time, ASEA succeeded in positioning itself as a highly relevant and well regarded regulatory agency. On the other hand, the presidential turnover also revealed the weak institutional foundations of this success story. ASEA's institutional status, the complex world of highly prescriptive and broader principles-based regulation, and the need to maintain regulatory capacities proved highly challenging. Only time will tell whether ASEA's success during its infancy will give rise to successful adolescence, or whether the critical junctures of presidential transitions proved vital for determining the fate of this young agency.

1 The research was enabled by ASEA's then Executive Director, Carlos de Regules. We put together a group of scholars from various Mexican and international institutions, to research ASEA's regulatory conditions, its progress and limitations, and we put together a book (available, in Spanish: *https://www.researchgate.net/publication/328964109_ASEA_Una_nueva_institucion_del_Estado_mexicano*). The contributors to this volume are Ángel de la Vega (Universidad Nacional Autónoma de México, UNAM); José Alberto Hernández Ibarzábal (Australian National University); Juan Carlos Belausteguigoitia and Pedro Liedo (Instituto Tecnológico Autónomo de México, ITAM); Luis Everdy Mejía (Hertie School of Governance); Guillermo Morales and Anna Pietikainen (Organization for Economic Co-operation and Development, OECD); Martin Lodge (LSE); and María del Carmen Pardo, José Roldán Xopa, Ricardo Massa, Alberto Casas, and José Manuel Heredia (Centro de Investigación y Docencia Económicas, CIDE).

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The limits of learning from disasters

Francisco Gaetani, Bruno Queiroz Cunha and Sergio Henrique Collaço de Carvalho consider implications of recent disasters in Brazil

Fundamental tensions between demands for maximizing economic development and concerns about the mitigation of environmental impacts are central to all commodity-dependent economies. Brazil is no different. Any politics of risk management in this context is shaped by the wider politics surrounding natural resource extraction. The two recent dam collapses highlight the regulatory challenges that confront a country such as Brazil. Moreover, if 'lesson learning' is supposed to be one objective in the aftermath of such tragedies, Brazil, at least at this particular point in time, is ill-suited for learning lessons for the future.

But let's focus on the cases first. The 2015 partial collapse of the dam in the city of Mariana in the state of Minas Gerais turned out to be one of the biggest environmental Brazilian disasters in modern times. Fourteen people died. Three years later, Brumadinho, a small rural town in the same state, witnessed another dam collapse involving a much higher toll in human lives (at the time of writing, at least 206, with over hundred individuals still missing). The dam collapsed at the worst possible moment, namely lunchtime. Staff were having lunch in the administrative building, situated just under the dam. While toxic, the sludge was deemed less environmentally problematic than was the case in the earlier dam collapse.

Minas Gerais – the state in which both of these dam collapses happened – is one of the richest states in Brazil. Its population size is similar to that of Chile and it is economically dependent on the mining industry (the name of the state is derived from its long history of natural resource extraction). The state has – at least until the opening of the Amazon to resource extraction – been the most important site for mineral extraction in Brazil. Following a long history of diamond and gold exploration, iron extraction remains prominent. Iron is also the core business of Vale (previously Vale do Rio Doce), one of the largest global mining companies in the world.

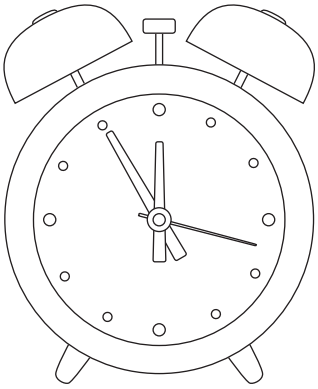
There are hundreds of dams containing toxic sludge resulting from mining activities. Most of these are over three decades old and were constructed at a time when environmental concerns enjoyed limited attention. In both the Mariana and Brumadinho cases, environmental and extraction licences were deemed to be complied with and we can assume that some kind of inspection activity must have taken place before the dams' collapse. Following the disaster in Mariana, for instance, the government required all other dams to be inspected. At the same time, the political influence of the whole minerals industry onto the world of politics played out in full. We don't yet know the full story about the Brumadinho tragedy, for example, whether warning signs had been ignored or not communicated by the inspectors, or whether reports might even have been fabricated.

A proper inspection regime perhaps could have avoided the tragic loss of life. At this point, however, this is difficult to establish, as the continued tragedy of, and controversy about, the Brumadinho dam collapse are likely to stand in the way of sustained lesson learning.

The blame game has focused on Vale. The company's president and three directors were nudged into their resignation by the public prosecutors and the federal police. The stock market bounced back in delight when hearing the news. The resignations may have been good news for Vale's shareholders, but focusing on Vale alone hides the much broader structural problems underlying the regulation of dam safety in Brazil. The focus on Vale moved attention away from the roles and responsibilities of other actors involved, such as other companies, namely Samarco, a joint venture of Vale and BHP Billington, and the de facto operator of the Mariana dam, or BHP Billington itself. Similarly, responsibility is also shared with poorly resourced public servants, Minas Gerais' environmental council, or the German safety certification provider (Tüv Süd, and its recently acquired Brazilian unit).

This 'many hands problem' is further aggravated by the complexity of mining regulation. Mining activities are managed via an environmental licence issued and controlled at the state level (some are supervised at the federal level). Yet, minerals, oil and water are federal properties and concessions to extract these natural resources are issued at the federal level.

Regulatory complexity exists also because of organizational change. At the time of writing, the federal government is creating a National Mining Regulatory Agency to replace an earlier institution dedicated to the granting of concessions. This initiative to create an agency originated before the Mariana disaster, but received impetus as a result of it. The Agency has been approved by Congress, but was not yet fully operational when this article was written. Given this context, this young Agency will have plenty on its agenda; most of all, it will have to confront those vested interests that have benefitted most from the rather lax regulatory regime of the past. In addition, this Agency will have to navigate the complexity of Brazil's multi-layered political and regulatory system.



There is also an issue about compensation and recovery. Following the Mariana disaster, Samarco (and its controlling companies, Vale and BHP Billington) established the Renova Foundation to support the recovery of the affected Rio Doce region. The Brumadinho death toll is much higher and it is questionable whether corporate interests have the will and the financial muscle to cover these additional costs (at current estimates, about US$1bn). More broadly, are the Brazilian executive and judicial systems in a position, and at what speed, to establish a compensatory sum that in any way reflects the tragedies involved in these dam collapses?

The Mariana and Brumadinho disasters have received plentiful international coverage. The scale of the tragedy transcends Minas Gerais because it also highlights the challenges involved for all jurisdictions with mineral resource dependency. Regulation is at the heart of these challenges. Mining is inherently a dirty business, and it required decades to develop environmental regulation to make its impact somewhat more palatable. Maintaining a reputation as a 'good' and 'responsible' company is a challenge for even the most successful global companies.

Nowadays the regulation of mining also extends into the post-extraction stage: what is supposed to happen when the mining operation ceases exploration? The further challenge for risk management is that the present deals with the inheritance of the past when concessions and regimes were established under very different political and social circumstances. How to renegotiate these past commitments given changing expectations in view of considerable cost implications for business is highly problematic.

The problems of such a renegotiation are further accentuated by the fact that the present Bolsonaro administration declared that it intentionally loosened environmental licence conditions to accelerate mining activities in Indigenous Reserves. The Brumadinho disaster has put the brakes on these early declarations. However, the current task of enforcing environmental licensing has been worsened by the sacking of a large majority of regional directors of the responsible federal environmental regulatory agency, IBAMA.

Given the political economy of Brazil, it is likely that the government, market pressures, the courts and prosecutors will somehow find a way to ensure that Vale can economically afford the inevitable compensation payments. However, there is little hope for 'lessons learnt'. There are hundreds of similar dams in areas of mineral exploration. Brazil has been struck with two disasters in very short succession; however, the risks associated with the country's appetite for natural resource exploitation continue to remain unsurmountable.

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All authors are writing in a personal capacity.

Technocratic democracy and the politics of cost-benefit analysis

Chase Foster critically assesses recent advocacy for technocracy in American government

Amidst the background of the Trump presidency, and its frequent disregard for economic and scientific expertise, 2018 might seem a surprising time to publish a book celebrating the advance of technocracy in the American government. Yet Cass Sunstein, the prolific law professor and occasional policy-maker, has done exactly this. In his new book, *The cost-benefit revolution*, he argues that science and economics are now at the centre of regulatory policy-making (Sunstein 2018). From highway safety to climate change, obesity to consumer protection, the institutionalization of requirements for scientific evidence and rigorous economic analysis has, according to Sunstein, 'revolutionized' policy-making, leading to regulatory rules that are increasingly oriented towards maximizing aggregate welfare.

Sunstein draws from his expertise in the fields of economics and law, and extensive experience working in government, including three years at helm of the Office of Information and Regulatory Affairs (OIRA), the agency responsible for reviewing agency regulatory impact assessments, to make a persuasive case that cost-benefit analysis (CBA) should be a central decision rule in regulatory policy. Within his 'technocratic conception of democracy' (Sunstein 2018, p. xi), the public has delegated the vast majority of policy-making decisions to insulated bureaucrats, who use science, economic theory, behavioural research, policy experiments, and cost-benefit analysis to devise policies that maximize social welfare. While acknowledging the difficulties of measuring welfare and ascertaining the prospective effects of policies, and noting that such an approach may sometimes run against the concerns of distributional justice, Sunstein nevertheless holds that strict cost-benefit analysis requirements lead to better public policies.

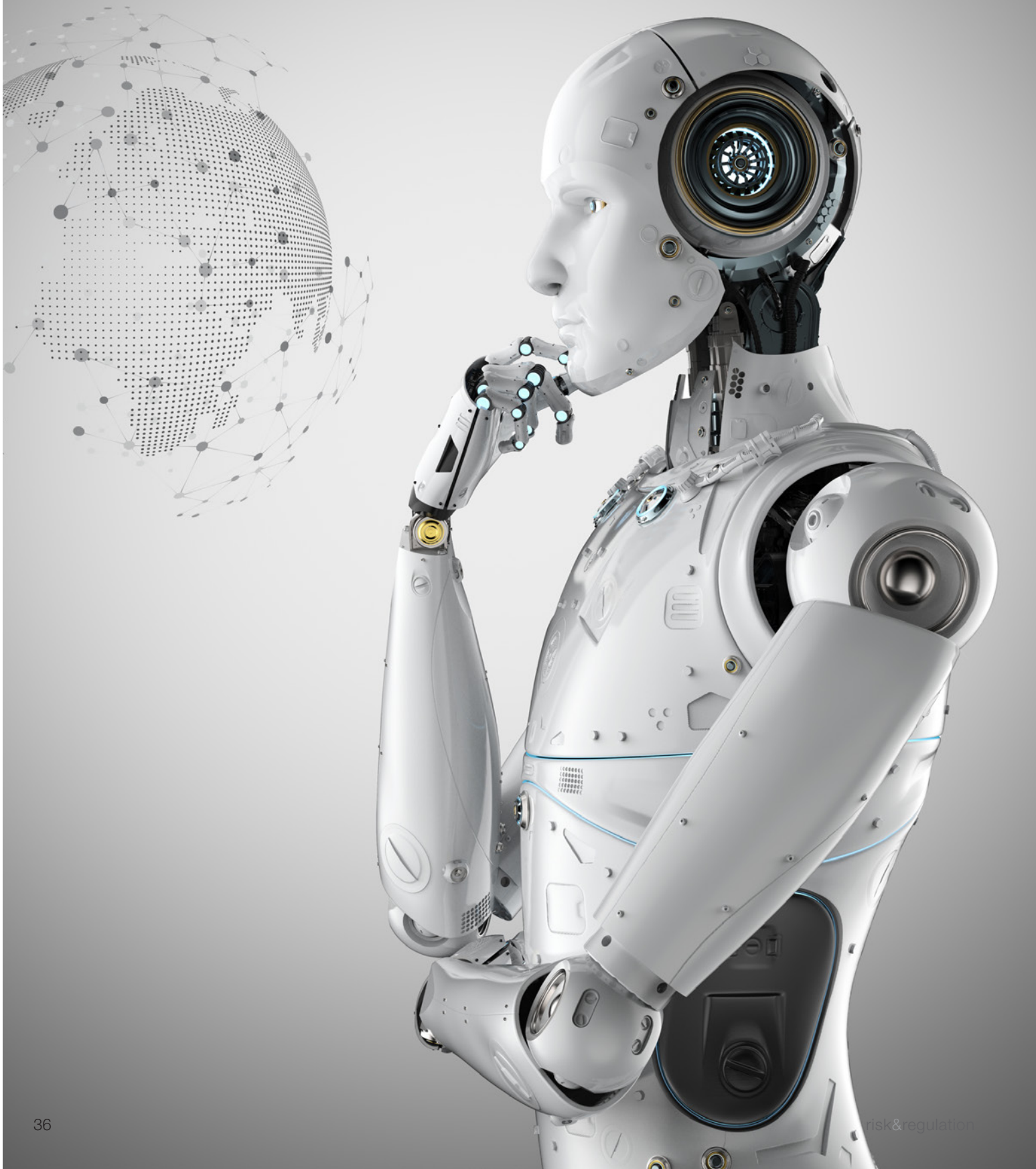
While the book offers much insight into many of the theoretical foundations and contemporary debates about CBA, it downplays the political role of regulatory review, while ignoring the ways that cost-benefit methodology itself is affected by politics. Not only have quantitative scholars identified strong empirical evidence that industry lobbying shapes regulatory impact assessments (Haeder and Yackee, 2015), but most observers agree that political control remains the central purpose and function of OIRA, which is housed in the White House (Posner, 2002). The institution's political function has only become more evident during the Trump administration. For instance, a 2017 executive order significantly expanded OIRA's powers to block new agency rules, requiring agencies to eliminate two rules for every new one enacted, while also mandating that the net costs of any new rule be zero, regardless of the benefits. Yet even amidst these developments, Sunstein presents regulatory review as a mostly apolitical exercise that is as constraining on the White House as it is on agencies.

Similarly, he portrays cost-benefit analysis as an apolitical technology. While Sunstein is right to note that the methodology is not inherently biased toward either regulation or deregulation and that it has been used to justify policies supported by Democrats and Republicans alike, this does not mean CBA is impervious to politics. Like any technology, the concepts and categories of CBA can be shaped by institutional actors and vested interests, including through advocacy, research funding, and model inputs and assumptions.

Take the social cost of carbon (SCC), the federal government's official estimate of the economic costs of a marginal increase in greenhouse gas emissions. The result of a working group involving more than a dozen agencies, the SCC is often hailed as an achievement of neutral, technocratic government. Yet, because it was developed during the Obama administration and used to support a flurry of rule-making to place limits on greenhouse gas emissions, the SCC was seen by most Republicans as a politically motivated endeavour (Wall Street Journal, 2013). And sure enough, as soon as Trump became President, he disbanded the Interagency Working Group on Social Cost of Greenhouse Gases, and withdrew from official policy the social cost of carbon (White House, 2017). Soon thereafter, the new administration established a revised SCC of just $1 to $6 – equal to less than a tenth of the Obama administration's estimate of $10 to $85.

Notably, these changes were made, not by throwing out any of the climate change models, but by making two changes to model specifications. Specifically, the administration employed a higher discount rate, and considered only domestic effects. Given that the effects of climate change are global, intergenerational and potentially irreversible, utilizing a high discount rate and focusing only on domestic effects is widely seen as inappropriate. But these choices are well within OIRA's rules, reflecting the discount rates and domestic focus of most other CBAs. That such a dramatic revision could be achieved while staying within the bounds of institutionalized practice, suggests that CBA methodology contains ample room to pursue a variety of political ends.

Indeed, there is little evidence from the current administration that Sunstein's 'cost-benefit revolution' has limited the



broader politicization of regulatory policy. Certainly, it has not yet prevented the Trump administration from eliminating scores of rules deemed to be net beneficial by earlier cost-benefit analysis tests. Within the sphere of environmental protection, more than 47 rules have been eliminated over the last past two years, and legal processes have been initiated to reverse 31 additional rules, including several that are estimated to produce tens of billions of benefits (New York Times, 2018). While Congress initiated more than a dozen of these revisions, and some attempts may yet be prevented by the courts, so far at least, cost-benefit analysis has not proved a particularly constraining force on the White House.

Sunstein is, of course, critical of these developments, calling the 'one in, two out' rule a 'gimmick', and warning the Trump administration that if it uses its review power to stranglehold agencies, this would result in a 'terrible stain' on OIRA's integrity (Sunstein, 2018: 211). Yet even though these developments would seem to directly challenge his thesis –illustrating the blatantly political use of regulatory review – he does not spend much time discussing their implications for the cost-benefit revolution.

The most extensive acknowledgment of the incomplete institutionalization of technocracy can be found in his suggestions for reform. To guard against politicization, he calls on Congress to establish a formally independent OIRA-like agency armed with even more extensive powers of review. Additionally, Sunstein advocates an increased role for courts, to adjudicate the quality of regulatory impact assessments, and overturn rules where the economic benefits do not justify the costs.

Many of these ideas are interesting and, in a different time, potentially workable. Yet in a moment where the political zeitgeist is hardly technocratic, it is unlikely that Congress would establish an independent super regulator with the power to block as well as force agency action. A better way to minimize politicization and ensure that policy is based on good evidence and sound judgment, may be to transform OIRA into an advisory body, and give agencies more autonomy in conducting analyses, as is currently the case for independent regulatory agencies such as the US Federal Reserve. Subject to less political control by the White House, agencies would be better able to fulfill their statutory mandates, and less vulnerable to bald politicization by a reckless presidential administration.

While Sunstein's book goes against the current political moods, this does not make it any less timely. His careful elucidation of the rationale and mechanics of CBA helps us better understand an important dimension of policy-making in the contemporary regulatory state. Even for those who disagree with some of his conclusions, his advocacy for a strong version of technocracy will be thought provoking, prompting consideration of what government at its best would look like. As we wrestle with how to balance democracy and technocracy in an age of political populism, Sunstein's book identifies some of the normative, empirical, and institutional questions most at stake.

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Chase Foster is a **carr** research associate and a Fellow in Public Policy and Administration in the Department of Government at the LSE.

carr *news*

carr news

We welcome **Andrei Guter-Sandu** who has joined as research officer for the QUAD project. Andrei joined us from City University London.

carr publications

Assembling calculative infrastructures
Liisa Kurunmäki, Andrea Mennicken and Peter Miller (2019), in Martin Kornberger et al. (eds), *Thinking Infrastructures*. Research in the Sociology of Organizations, vol. 62, Emerald Publishing, pp. 17–42.

Infrastructures of traceability
Michael Power (2019), in Martin Kornberger et al. (eds) *Thinking Infrastructures*. Research in the Sociology of Organizations, vol. 62, Emerald Publishing, pp. 115–30.

Introduction: *thinking infrastructures*
Geoffrey C. Bowker, Julia Elyachar, Martin Kornberger, Andrea Mennicken, Peter Miller, Joanne Randa Nucho, Neil Pollock (2019), in Martin Kornberger et al. (eds), Thinking Infrastructures. Research in the Sociology of Organizations, vol. 62, Emerald Publishing, pp. 1–16.

What's New with Numbers? Sociological Approaches to the Study of Quantification
Andrea Mennicken and Wendy N. Espeland, Annual Review of Sociology, vol. 45, *https://doi.org/10.1146/annurev-soc-073117-041343*

Modelling the Microfoundations of the Audit Society: organizations and the logic of the audit trail
Michael Power (in press), Academy of Management Review, *https://journals.aom.org/doi/10.5465/amr.2017.0212*

Thinking Infrastructures
Martin Kornberger, Geoffrey C. Bowker, Julia Elyachar, Andrea Mennicken, Peter Miller, Joanne Randa Nucho, Neil Pollock (2019) (eds). Research in the Sociology of Organizations, vol. 62, Emerald Publishing.

carr discussion paper

Investing in implementation
Jacob Kringen, **carr** discussion paper 86.

carr seat

Information cultures in food safety regulation
Jeremy Brice

carr events

Information-based regulatory alternatives: a longitudinal study of the food hygiene scheme
Panos Panagiotis (Queen Mary University of London) and Frances Bowen (UEA)

Rethinking gaming: the ethical work of optimization in web search engines
Malte Ziewitz (Cornell University)

As part of its Regulators' Forum, **carr** held three seminars with a range of regulators, on Brexit, on emergencies, and on ethical considerations in regulatory decision-making.

The Higher Education Roundtable met to discuss the experience of devolved higher education governance on the British Isles, including also the Republic of Ireland. Speakers included David Lott (Universities Scotland) and Tom Boland (Education Consultant, formerly Chief Executive of the Higher Education Authority, HEA, Dublin).

Together with LSE's Department of Economics and the Spinoza Foundation, **carr** hosted two author workshops to discuss recent highly influential book publications. In November, we welcomed **Paul Tucker**, former Deputy Governor of the Bank of England, to discuss select themes from his recent volume on Unelected Power. Discussants during that workshop included Ed Richards (Flint Global), Paul Kelly (LSE) and Ethan Ilzetzki (LSE). In March, we invited **Colin Mayer** (University of Oxford) to discuss his recent book Prosperity.

carr has joined up with City University's Centre for Competition and Regulatory Policy to organize biannual roundtables on competition regulation. The first roundtable, in March 2018, dealt with the theme of 'Financial & Financing Structures of Infrastructure Networks: Should Regulators be Active in Regulating These and, If so, How Far?'.

The **QUAD** project is in its final year. To discuss the project's emerging research findings, the project teams from Hamburg, Bielefeld, Leiden and Paris met in London in February.

carr activities

Bridget Hutter delivered a keynote address entitled 'The many shapes of Regulatory Crisis: competing narratives, competing interests and the importance of embracing chaos' at the 2nd AGORAS conference on 'Lessons learned? Studying learning devices and processes in relation to technological accidents' in Paris in December. She also visited the ETH Risk Center in Zurich and presented a paper on 'Risk regulation is a risky business: negotiating the consequences of risk, disasters and crises'.

Martin Lodge visited CIDE (Mexico) as part of the British Academy Newton Fund-funded research project with Mauricio Dussauge-Laguna. As part of the research activities, he also presented to a joint seminar with Conamer, Mexico's better regulation agency. Lodge also visited the Centre for International Law, National University Singapore, to pursue joint research interests with **carr** research associate Damian Chalmers, in particular in relation to the embedding of economic institutions. Lodge also presented on the first joint Centre for Competition and Regulation/**carr** roundtable at City University on the theme of regulatory interventions into financial structures.

Andrea Mennicken talked about 'Seeing like a regulator: interactions between IFRS and prudential standards' at a workshop organized by the Bank of England on 'What could (or should) central banks learn from political scientists?' in January. With Lodge, she presented QUAD project results to the Regulatory Scrutiny Board of the European Commission at their Quantification and Better Regulation Workshop in Brussels in December.

Mennicken also presented findings from the QUAD project at a workshop on 'Ratings and organizations' at the University of Hagen, Germany, in March. Mennicken discussed the QUAD project further at Bielefeld University in a workshop on 'Quantifying Higher Education: Origins, Production, Consequences' in March. Here, she presented a paper on 'Governing through value: higher education, quantification and the asset rationale', co-authored with QUAD project partner Fabian Muniesa from Mines ParisTech.

Mike Power provided a keynote address to the New Institutionalism in Organization Theory Workshop at Uppsala University in March on the theme of 'Traceability as an institutionalizing process'.

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