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Innovation and Responsibility¹

Richard Owen

As I write it is late April. Spring this year is warm, anxious, sunny and uncertain. It is unusually quiet in our village. The constant ebb and flow of commuter traffic has stopped: it has been like this for weeks since the lock down. There is much less pollution, the skies are bluer than normal. There is a path near our small, terraced house which goes down to an old wood covered in a sea of bluebells. We are allowed one walk outside a day, not to be taken near others. This path, like all others now, is measured strictly in units of two meters. But the path is rarely busy, so I can follow it down to the wood.

Standing in this sea of blue, it is hard not to reflect on the duality of nature, on its ability to be both deadly and sublime. Today the death toll is almost eight hundred. I feel powerless, calm, vulnerable. In a week or two this wood will have changed, the blue will be gone. But nothing will have changed. The crisis will not have passed. We will still be confined and isolated. The feeling that each next step will be taken in an ocean of uncertainty will remain.

Not all crises cause change. About seventeen years ago I survived a category four hurricane. Hurricanes of this magnitude are extremely dangerous. We were living in Bermuda at the time and had two very young children. The islands took a direct hit. Bermuda is tiny, the remains of a long - extinct volcano, isolated in the vastness of the Atlantic Ocean about 600 miles from the nearest landmass and with only a fragile coral reef for protection. Our children were thankfully too young to understand what nature was about to unleash. The emergency radio station went dead two hours into the storm and there was no contact with the outside world. The night that followed was terrifying. I remember most stepping outside the morning after the hurricane passed. It was warm, sunny and eerily calm. We would have no power or water for a month. But deep inside me that morning was a feeling of certainty that things *would* return to normal. And slowly they did, in fact surprisingly quickly given the devastation that had been wreaked by the storm. In a week or two the fallen trees had been cleared. I went back to work. We had a street party with our neighbours when they finally reconnected our electricity. It had been dark and stormy, but the crisis had passed and, months later, seemingly little of consequence had changed.

But this crisis feels different. It feels as if things of consequence will happen, that we are on the brink of change. That some things will vanish and new things will take their place. Everywhere there is talk of us entering a 'new normal'. But what will that 'new normal' be?

Crisis, legitimacy and change

The future is contingent, uncertain and unpredictable. We may be able to accurately predict the tides, or predict the path of a hurricane, but can we really predict how our lives might change after this pandemic? When we were hit by the hurricane in Bermuda I was working as a scientist evaluating the impact of pollutants on coral reefs, hoping to do something - however small - to help protect our fragile planet. But as time went on I came to realise that more scientific knowledge in itself does not necessarily catalyse action and change, important though that knowledge is. I did a PhD related to climate change, so I guess I should have worked that out a long time ago. I began to ask questions about what *does* cause change in organisations and institutions, how that change happens, and what drives or hinders it. A journey that would leave me washed up on the shores of innovation and organisational studies. There is no way I could have predicted that.

¹ In: Parker, M (ed) (2020) Life After COVID-19. The other side of crisis. Bristol: Bristol University Press

It turns out that organisational theory has lots to say about crisis and change. It tells us that during periods of relative stability change happens, but it is often slower, more incremental, more insidious. Vested interests push back at major disruption to the status quo. There are tweaks slightly to the right or left. Then a crisis happens. Just look at history, whether one thinks of the 1986 explosion at the Chernobyl nuclear power plant or the global financial crash of 2008. Crises of this scale and magnitude create sudden shocks that puncture the fragile equilibrium, jolting organisations and throwing existing institutional arrangements up into the air. The pieces do not necessarily fall back into place. The place itself can change beneath the pieces. Things vanish, and new things take their place.

Crises can create critical juncture moments, serving as trigger events to which organisations and institutions¹ may choose, or be forced, to respond. But why is that? The clue lies in the concept of *legitimacy*, which is intimately bound up with concepts of organisational and institutional change. There are lots of ways of defining legitimacy, but at its heart I suggest it can be thought of as the degree to which there is cultural or societal support for something. Organisations and institutions that have the luxury of complete legitimacy are those which are beyond question (about for example what they are, what they do and what they stand for). The completely legitimate organisation or institution doesn't need to change. Why would it? If it isn't broken don't try to fix it.

Crises break things. The act of breaking starts with questions. Questions that relate to the performance, or efficiency of current organisations and institutions, or their purposes, or the values that underpin them, or a combination of all these. In the UK, where I am writing, these include: why could we end up having the largest death toll in Europe? Should Governments and their public health agencies have been better prepared? Should they have heeded the lessons learned from previous pandemics, such as H1N1 ten years ago? And other reports since? Were they slow to lock down? Why was there insufficient personal protective equipment for front line health workers? And for care workers? Why were care homes forgotten about? Why was there so little capacity for testing for the virus and why did it take so long for front line staff to get access to testing? Why was the National Health Service left so under resourced for so long?

Perhaps if you live in South Korea, or Germany, some of these questions may have less relevance: perhaps the legitimacy of your institutions feels, well if not unquestionable, then at least on firmer ground. But in the UK, a country where trust in government, and science and expertise, was already on very shaky ground before the pandemic struck, things are different. We are experiencing a crisis caused by a virus that follows a Brexit crisis from which we are yet to surface, which itself follows a financial crisis that we had hoped we were finally emerging from but look like re-entering again, only this time it will be even deeper, an economic shock not encountered for hundreds of years. One could be excused for asking questions.

Crises then can create legitimacy challenges which in turn can create the potential for change, setting the cat among the pigeons. What follows is dissonance, contestation and even conflict about what should have been done and what is now appropriate, acceptable or desirable. But organisational theory also tells us that this is not in itself enough to create substantive change. Incumbents, and particularly those who have a stake or vested interest in the status quo, can buttress their positions, deflecting and resisting change, sometimes displaying stubborn resistance. They have too much to lose. Or they can be canny, responding in ways that are entirely symbolic. One way to do this is known as 'de-coupling', ensuring a new way of doing things is isolated or marginalised from the organisation at large, which continues with business as usual. So, whilst crises are important because they cause legitimacy challenges and get people talking, in themselves they are not enough. Something else is needed.

Entrepreneurship and innovation

In the organisational studies literature there is a special place for what are called 'institutional entrepreneurs'. There is lots of discussion relating to them about agency and interest, about agency and structure, about agency over structure. The important point thing to know is that they are good at coming up with ideas, shaking things up, convincing others that their ideas make sense and turning their ideas into reality. They clear the ground and seed it for innovation as a future-creating phenomenon. Those entrepreneurs who emerge in and after a crisis, and the sorts of innovations they set in motion are key for the type of change that will occur, and the sort of future that we will all end up with. We should keep an eye on them.

Institutional entrepreneurs are interesting folk. They tend to be enterprising individuals who are sufficiently motivated (i.e. they have sufficient *interest*) to overcome the sometimes rigid organisational and institutional structures and norms that coalesce during periods of stability. They are good at testing new behaviours and encouraging others to behave accordingly. Adept at persuasive argumentation and political negotiation, they challenge the status quo, presenting an alternative, better future. As advocates they can articulate a case for change and mobilise people and resources to make that change happen. They are particularly good at critical reflection, imagining themselves outside the structures that bind, looking in from outside at engrained ways of thinking and established ways of doing things and offering innovative ideas for a way out, a way forward. And they offer these in a compelling way. If they operate in a culture that encourages experimentation and risk taking and one that has resources to support them, there is a good chance they will succeed in turning their version of the future, or at least a version of their version, into a reality. They start to create spaces for negotiation. They build advocacy coalitions around them. Constraints on agency relax and new opportunities for innovation as a force for 'creative destruction' emerge, benefiting themselves as well as those who share their vision, for whatever reason and whatever motivation.

Innovation is a little different to entrepreneurship, although the two are linked. It is often defined as creating new products and services from ideas (e.g. inventions) and bringing these to the market. It is that, but it is also about creating other sorts of value e.g. social value through various forms of social innovation. I tend to think about it as fundamentally being about *creating futures* by combining knowledge in novel, sometimes exciting ways. This can be incremental, changing futures in a very small way. But sometimes it can be disruptive and even paradigm changing. Although disruptive innovation can emerge at any time, look out for it in the wake of crises. Thinking of innovation as a future - creating phenomenon in this way also prompts a couple of questions that continuously pre-occupy me— what kind of future do we want innovation to create, how do we engage with those futures in the making, who gets to have a say about what those futures could (or should) be, how do we take responsibility for those futures? And if innovation creates futures by combining knowledge, often from quite different places, what sort of knowledge is being combined, how and by whom, and for what purpose? Innovation is not a linear process. It's messy, what my colleague John Bessant describes as 'knowledge spaghetti'. And you can cook spaghetti in lots of different ways.

Even though we are only months into this crisis there is already evidence of substantial entrepreneurship and innovation. Medical innovations were inevitable. Here in the UK these include an innovative vacuum cleaner company repurposing to make ventilators for those seriously ill in hospital (a lack of ventilators has been a serious concern in this pandemic). Another innovative collaboration between a manufacturer of Formula One racing cars, clinicians and researchers at a UK university has developed an innovative, continuous positive airway pressure breathing aid. Then there

are the digital innovations for contact tracing: new digital apps that allow mobile phones to communicate in the background with each other via blue tooth, tracking where you have been and who you have been in contact with, alerting those who could be at risk. The data, if stored centrally, can be used to map the spread of disease over time so this can be managed more effectively. These I suspect are just the start of a wave of digitally-enabled innovations which will infiltrate many aspects of society, from new ways of working remotely to new ways of educating and managing how we move around to ensure social distancing. They are likely to have *data* - its collection, storage, manipulation and perhaps commodification - at their heart, taken forward by entrepreneurs in the private and public realms offering innovative solutions for legitimacy challenges raised by the crisis.

The other thing to note about innovation is that it often coproduces risks, uncertainties and ethical dilemmas with value, in unpredictable ways. It has been shown to have a propensity to become *entangled* with politics, ethics and values. Entanglements are already starting to appear. An open letter written by over 170 scientists in the UK in response to the proposed development of a contact tracing app by the National Health Service highlighted deep ethical concerns relating to privacy and confidentiality. There is a big debate going on about decentralised vs centralised approaches to app-based contact tracing, the latter advocated by the UK Government (and some others around the globe). This approach logs and stores personal mobile phone data on a central database to create a 'social graph' of where you have been and who you have been in contact with. There are questions of trust, privacy, purpose limitation, and 'mission creep'. An overarching concern of the scientists in the letter is the creation of "a tool that enables data collection on the population, or on targeted sections of society, for surveillance"ⁱⁱ.

The subtext here is that in this time of crisis governments, agencies and companies may get away with things that they would not be able to get away with at other times. Things like surveillance. The world for a while becomes a temporary wild west, a testbed for disruptive innovation where futures and fortunes can be made while we are distracted and desperate. Some of these innovations will be related to the challenge of managing the virus, others will be only very loosely connected with this purpose, and others will slip under the radar while it is trained on the virus. In the fog of war new futures can be imagined and let loose.

Should we be worried? We should certainly be vigilant. In her book 'Surveillance Capitalism', Shoshana Zuboff describes how two crises - the bursting of the dot.com bubble in 2000 and the terrorist attacks of 9/11 - were pivotal for the rise and success of companies like Google and Facebook. After the dot.com crisis, investors needed Google to turn a profit fast, and its business model changed, from collecting data from its users for the purpose of improving its search engine for them, to using that data primarily to match advertising to users. This ushered in an era of innovation in user profiling, machine learning, predictive analytics, psychographic marketing, continuous online surveillance and billion dollar profits. These were aimed at capturing every aspect of our behaviour and experiences as inputs for digital supply chains, in turn being used to nudge and shape behaviour for commercial profit, or political gain. After 9/11, the legitimacy challenges raised by this crisis of global terrorism went further, opening up unprecedented spaces for collaboration between ascendent tech firms, the state and intelligence agencies in the name of the 'war on terrorism'. In this new normal, security trumped privacy, a mutually beneficial arrangement for both state and the tech companies. Compounded by a permissive and under-developed regulatory environment, Zuboff describes the processes of technology-enabled incursion, normalisation, habituation and adaptation that have happened since these crises, as forms of corporate and corporate-state surveillance have gradually become our new normal. Ironically, it was only after a further crisis involving a company called Cambridge Analytica that we really took notice.

Responsible Innovation

Crises like the one we are currently living through cause legitimacy challenges, which make space for new forms of entrepreneurship and innovation. What sort of futures are being imagined and created in the name and aftermath of this crisis? What sort of future do we want this innovation to create? How can we engage as a society with these futures in the making, have a say about them, take responsibility for them? These are at the heart of the idea of responsible innovation that I and a few colleagues have been working on for the last decade, since the last major crisis in 2008. Crises are unprecedented moments for innovation and, associated with this, important moments to ask these questions and seek some answers.

In order to do this we have suggested a need to more systematically embed processes of anticipation, ethical reflection and inclusive deliberation and debate in and around innovationⁱⁱⁱ, and research in places like universities which is aimed at it^{iv}. We need this not only to ensure vigilance, to understand what futures are in the making. We need them to support a collective and inclusive discussion about what kind of future we want innovation to bring about in the aftermath of this crisis. A future that I hope is more sustainable, more equal, more just. A future in which some things vanish, and better things take their place. At a time of great crisis and tragedy, a time when the pieces are in the air, this is also a moment of unique opportunity, a moment for us to choose where and how those pieces should fall.

ⁱ If you are wondering what the difference is between an organisation and an institution you could think of it like this: a school is an organisation, education is an institution.

ⁱⁱ <https://drive.google.com/file/d/1uB4LcQHMPV-oLzIIHA9SjKj1uMd3erGu/view> (accessed May 18th 2020)

ⁱⁱⁱ Stilgoe et al (2013) : doi.org/10.1016/j.respol.2013.05.008

^{iv} For an example of a study which puts this thinking into practice see Balestrini et al: (2017): [doi/10.1145/3025453.3025915](https://doi.org/10.1145/3025453.3025915). See also concepts such as citizen assemblies and people's councils discussed elsewhere in this book.