



UNDERSTANDING AND RESPONDING TO COVID-19: THE ISSP MEMBER BLOG SERIES

(MARCH-SEPTEMBER 2020)

ISSP

INSTITUT DE RECHERCHE SUR LA SCIENCE,
LA SOCIÉTÉ ET LA POLITIQUE PUBLIQUE
INSTITUTE FOR SCIENCE, SOCIETY AND POLICY



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FOREWORD

PROFESSOR MONICA GATTINGER, FULL PROFESSOR, SCHOOL OF SOCIAL SCIENCES AND DIRECTOR, ISSP, UOTTAWA

2020 has been an unusually trying year. COVID-19 has put the world on hold and on high alert simultaneously, upending everyone's lives. We have witnessed an extraordinary mobilization of science and evidence, and remarkable political will to address not only the public health crisis, but the economic devastation that followed in its wake. All of this is being done at a breathtaking pace in real time.

Like all organizations, the ISSP has been impacted by COVID-19 – early 2020 saw a rapid transition to working from home, the cancellation or delay of multiple events, and the reorientation of research and teaching activities to virtual formats. With business continuity well in hand, we quickly turned our minds to how the Institute could contribute to addressing COVID-19. In addition to supporting members launching new COVID-related research projects, one of our first actions to 'pivot' was the creation of a blog series on COVID-19 with the aim of rapidly mobilizing the expertise of our members on the science, society and policy dimensions of the pandemic.

We were overwhelmed with the enthusiastic response. Over the past six months, we have published multiple member blogs providing concrete advice to decision-makers about the myriad impacts and dimensions of COVID-19 – everything from science advice and government responses, to data collection and modelling to the cultural dimensions of superspreader events, the future of air travel, and the impacts on human rights.

This volume compiles the contributions to date. We will be continuing the series in the months ahead.

COVID-19 is a grand challenge of our time. Effectively addressing it requires us to align science, society and policy imperatives. It will leave a permanent mark on the world. But amidst the tragedy and chaos, there are countless opportunities to emerge stronger, to address deep-seated structural problems that the pandemic has put in the spotlight, and to transform decision-making for everything from health to economic to social policy.

We hope this series will continue to grow and offer insights for decision-makers, researchers and civil society alike.

Monica Gattinger
Director, ISSP



An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and a tall building in the background. The image is partially obscured by a large white semi-transparent rectangle on the left side.

THE SCIENCE OF COVID-19





THURSDAY, MARCH 26 2020

THE SCIENCE UNDERPINNING POLICIES TO DEAL WITH COVID-19

PROF. REES KASSEN, PROFESSOR OF EVOLUTIONARY BIOLOGY, FACULTY OF SCIENCE AND CORE MEMBER, ISSP, UOTTAWA

'Don't panic' says the cover of *The Hitchhiker's Guide to the Galaxy*. Sage advice in any time. Especially now.

To say COVID-19 has changed our lives seems a gross understatement. We are all feeling the impacts of social isolation, whether it is as benign as working from home or as drastic as quarantine, and wondering how long this will last. Anxiety is the new normal. Panic feels just steps away.

A little knowledge can go a long way to dialing down the anxiety meter. Knowing what we are up against and why we are being asked to change how we interact with the world can, I hope, help us get through these anxious times and start planning for the future. So, let's get started.

The current pandemic is caused by the SARS-2-CoV coronavirus. The disease is called COVID-19. Coronaviruses are a family of RNA viruses infecting many different animal species, including camels, cattle, cats, bats – and humans, where they cause respiratory illnesses like the common cold and more severe diseases like Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The name 'Coronavirus' refers to the crown-like (Latin: corona) viral envelope that can be seen with [electron microscopy](#). You might also see the virus referred to as SARS-nCoV-2 or just nCoV-2. The 'n' stands for novel, meaning it is novel to humans. More on that below.

Infections are caused by the virus colonizing the respiratory tract, mainly through droplets resulting from coughing or sneezing. The virus is easily transmitted among people, which is the main reason it has emerged as a pandemic. Estimates are that, for every person carrying the virus, about 2.5 additional people they come into contact with will become infected. That's a high rate of transmission. The comparable number for seasonal influenza is about 1.3, and for the [1918 Spanish flu \(to which many are comparing this pandemic\) the number was only about 1.8](#). Case fatality rate (CFR; the number of confirmed infections resulting in death) is still uncertain but seems to be ~1% on average, although it increases dramatically in people over 65 years. For comparison, CFR for seasonal flu is ~0.1% whereas the SARS outbreak in 2002 was about 10%.

What do these numbers mean? The high transmission rate means the virus spreads rapidly – like wildfire. We are seeing this happen in [most countries around the world](#) right now, [including Canada](#). A country reporting small numbers of cases now does not mean the virus isn't spreading. Rather, it could be that testing for the virus is not being done, cases are going unreported, or the first cases arrived only recently. Never matter. The virus will spread, and it will get worse before it gets better.

A virus that spreads easily infects a lot of people. Even if a small fraction of infected people develop disease severe enough to land them in hospital, so many people will be infected that our health care system could be quickly overwhelmed. A small fraction of a very large number is still a large number, after all. This is why we need to do everything we can now to prevent the disease from spreading. Slowing the rate of spread ([#flattenthecurve](#)) gives the medical community a fighting chance to treat the sickest patients one by one, rather than all at once.

Reducing transmission means making sure the virus has as few opportunities to spread as possible. We need to go from a single case infecting 2.5 people to a single case infecting less than 1 person. If we can do that, the virus will stop spreading. There are some pretty simple things we all can do to help: wash your hands (for at least 20 seconds with soap and water) and physically distance yourself from others (at least 2 meters). Governments could impose other measures to reduce the spread. Hard choices will have to be made. [This article](#) provides a start for how policymakers could think about those choices.

Looking ahead, we need to find ways to prevent future pandemics from happening. COVID-19 has become a problem because it jumped the species barrier – evidence points to bats as the source. Crossing the species barrier is unusual because a virus that thrives in one animal species won't possess the machinery allowing it to both establish (i.e., replicate) in a human cell and transmit from person-to-person. Multiple genetic changes, or mutations, are required for this to happen, though we don't yet know how many or what environmental conditions promote their evolution. And the experiments required to answer this question can be controversial because they provide information that could be used to generate a pandemic strain of virus in a lab ([see this paper as an example](#)). But SARS-CoV-2 managed to cross the species barrier, just like SARS-CoV-1 from 2002 and influenza H5N1 in 2009 before it. It can, and will, happen again. We need to do a better job at predicting when and where.

The world has not known, in living memory, a pandemic on the scale of what we are living with COVID-19. Physical distancing, self-isolation, and restrictions on travel are just the most immediate changes to our daily lives. Coming soon we need to prepare for challenging times as the economy tanks, more shops and businesses close, and the cultural fabric of our lives – from sports to the arts – steadily unwinds. The science behind this outbreak is not that mysterious; epidemiologists have excellent models for predicting how the virus will spread, and evolutionary biologists have a good grasp of why viruses sometimes make the jump from animals to humans. The challenge moving forward will be how to put these principles and models together with high quality data and effective policy to ensure that future outbreaks either don't happen again or, if (more likely when) they do, we are better prepared to manage them.

An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and a tall building in the background. The image is faded and serves as a background for the text.

GOVERNMENT RESPONSES AND SCIENCE ADVICE





FRIDAY, MARCH 20 2020

WHY ARE GOVERNMENTS FINDING THE NEW PLAGUE SO HARD?

DR. NIGEL CAMERON, SENIOR FELLOW AND FORMER FUBRIGHT RESEARCH CHAIR IN SCIENCE AND SOCIETY, ISSP, UOTTAWA

We've all observed the halting and surprisingly diverse approaches of governments around the planet to the emergence and spread of [SARS-CoV-2](#) - the official name of the virus causing the coronavirus disease COVID-19. (And yes, it would help all of us if WHO could take the advice of the weather services and come up with simple names for these things.) We've been asking why their approaches have been so different – in timing as well as focus – in dealing with exactly the same problem.

Each country has its own story. Once we're done with SARS-CoV-2 - and once it's done with us – there will be a grim accounting, nation by nation. Decisions and deaths.

Some things (bad things) are already obvious. It's clear that in the crucial first days and weeks both China and the U.S. took deliberate steps that had the effect of delaying their respective countries' response. It's also apparent that, perhaps uniquely, the UK seems deliberately to have encouraged the initial spread of the disease – bizarrely resigned to the inevitability of mass infection. Despite a [much-heralded U-turn](#), it is still holding back from the lock-down policy adopted by much of Europe. Canada [has followed others' lead and closed its border to most non-citizens](#), and now partial closure of the Canada-U.S. border is [being planned](#).

Meanwhile, China claims that its belated but draconian quarantine policy has worked; and in Hong Kong and South Korea and Singapore we seem to have examples of less drastic but also surprisingly successful efforts, in more democratic though very orderly societies. What these examples will mean for Africa and other less-developed regions, where there has been little testing and where healthcare systems are far from adequate even in normal times, remains to be seen. Especially in a world newly shorn of American leadership.

There are four core policy challenges facing every government.

1. Plainly, to contain *the spread* of the disease.
2. To manage the *healthcare needs* of those who succumb.
3. To handle the *macroeconomic impact*.
4. To address the potentially enormous *fallout for individuals and small businesses* as contracts fall off, hours and jobs are lost, and (especially in countries with modest social provision) workers need to be encouraged not to go to work if they are sick.

Some comments on each before we go further.

1. Containment. It's plainly been simpler for China, with its centralized decision-making and compliant citizenry, to take the dramatic actions that have apparently contained the outbreak. Of course, all states reserve powers of an "autocratic" nature to deploy

in emergency. Perhaps the most striking example among the democracies is that of Belgium, a country that is notoriously difficult to govern - with three provinces, two warring language communities, confusing “shared competencies” between federal and provincial governments, and often with no actual national government at all (as in the past year). Last week the “interim acting prime minister” Sophie Wilmes – regarded as a lightweight transitional figure – was suddenly vested by the King with the power to rule for six months by decree. By contrast, it is hard not to conclude that the British government has shifted, under serious criticism, from a policy of essentially enabling the spread of the disease for a period in an effort at treatment flow control, to one of high-profile dithering. Johnson uses his daily press conference to tell people not to go to pubs and restaurants, devastating their trade without stopping many of their customers. (The owners are angry: if he ordered them closed, many would have insurance support.)

2. Treatment. We’ve watched China erect whole 1,000-bed hospitals in a matter of days; and also watched as Italy’s healthcare system - and funeral system - have been overwhelmed. We’ve watched a succession of doctors in assorted countries including the UK, with its much-vaunted NHS, bewail the lack of PPE (personal protective equipment). We’ve noted that the crunch need in every jurisdiction has been the availability of [critical care beds](#) and ventilators. According to reports, Italy actually has twice as many, per capita, as the UK (which is second to bottom of the European ladder); the US has seven times as many, [but hardly enough](#). Hence the desperate effort in many countries to slow the progress of the disease so there is no sudden spike – and to keep open the hope that there will be no spike down the pike.

What’s more, over time both the human and physical resources of the healthcare system will be degraded. Doctors and nurses develop the disease, others decide to protect themselves and their families by pulling out – especially if there are equipment shortfalls. While a strategy may work for a week or a month as things get going – will it work if the virus is still on the loose, and there are many, many more patients, in three and six months’ time? This is where the improvidence of decision-makers is so telling and may prove so disastrous – the failure to maintain a stockpile of very basic PPE equipment, and to plan for a rapid scale-up of critical care beds/ventilators. Emergency actions to manufacture the needed supplies may or may not prove sufficient. We’re already weeks into the crisis and little has been done.

Despite the fact that it has the best-resourced healthcare system in the world, the U.S. has been scrambling. [One report](#) states they have only one per cent of the 3.5 billion masks needed to fight the pandemic for a year. Most masks are made in China, which is now producing 116 million every day - and has been sending supplies to several suffering countries. [Another](#) report suggested the U.S. was trying to buy a German company working on a vaccine.

3. Macroeconomics. It appears that President Trump’s initial [reluctance to take the threatening pandemic](#) seriously stemmed from his desire not to spook the markets. Now that the markets are thoroughly spooked, the US and everybody else is pouring money into efforts to prevent widescale bankruptcies and attendant layoffs. Quite apart from the problem of stabilizing market indexes in time of uncertainty, it’s plain that economies will shrink, perhaps dramatically, as economic activity slows. And this is all happening at the same time as the exogenous shock of Saudi Arabia’s destabilizing oil price war with Russia.

One issue that will be weighing with political leaders is whether the vast and potentially ruinous economic disruption involved in encouraging or enforcing stay-home policies is “worth” the savings in human lives that result – especially if those lives are (mainly) those of the elderly and the chronic sick. One depressing truth is that these are two groups who already cost healthcare systems a lot of money. What about the unthinkable – essentially, plan for a cull and cut the risks to the economy?

4. Workers and small businesses. It is a special challenge for the U.S. (and of course less-developed nations) without strong social safety nets to expect sick employees to stay home – a crucial component in fighting the spread of disease. Workers who are contractual or part-time are easy to lay off everywhere, though they have some protections in European nations. The U.S. is [according to reports planning](#) any day to send upwards of \$1,000 to every taxpayer, with discussion of further payouts later in the year. This will help them pay the rent and also stimulate crucial demand in the economy – and, perhaps, have potential political benefits. The fact that this initiative is bipartisan suggests no-one really knows where they will fall.

It’s a truism that governments find special difficulties in addressing policy issues that cut across multiple departmental areas of responsibility. Even fighting a war – the image being employed by various leaders, including Macron and Johnson – is basically the responsibility of one department of state. And while Secretaries of Defence need backup from colleagues across other departments, and may jostle with their head of government for pride of place, Secretaries of Health are much less able to commandeer such general responsibility – they are much more junior, and in need of even greater support.

It’s also a truism that every government includes a unit (perhaps several) working on “preparedness” and security threats like this one. While such units have plans in their files and have likely war-gamed this exact scenario, they invariably hold a lowly place in the hierarchy. This was strikingly illustrated by the decision of the Trump administration two years back to dissolve the [pandemic preparedness unit](#) in the White House National Security Council. Trump recently lied about not having been party to that decision. But at the time he had said “as a businessman” he didn’t consider the unit necessary [until there was a problem](#).

Yet more significant, perhaps, is the culture of government; which brings to mind the management saying (attributed to Peter Drucker) that culture eats strategy for breakfast. And I am reminded of an initiative I was involved in a decade back that sadly failed for lack of funding – to develop psychometric tests for “future-mindedness” that could be applied to civil service recruits. The kind of people who lead bureaucratic departments tend to be, well, bureaucrats; well-suited to stasis and specialization.

Looking ahead

I’m writing this on March 19, when the latest statistics via [Worldometers](#) are almost a quarter of a million cases, and almost 10,000 deaths, worldwide. Italy has overtaken China. And in country after country assorted restrictions are being put in place – for the next two or three or four weeks.

No question in my mind, we need to think at least six months ahead before children start going back to school and anything like normal economic activity re-starts. And that’s making some optimistic assumptions.

For one thing, there's not going to be a vaccine and for normal life to start up again the virus would need either to have swept through the population (likely causing hundreds of millions of people to be sick, and several million to be dead), or it will need to recede for seasonal reasons, like the flu does. Or – just possibly – we will have stopped it in its tracks as China may have done; though once China is back to “normal” the smart money is on further widespread outbreaks. And who in the West has the capacity to shut down huge cities and go door to door with thermometers for weeks on end?

And a vaccine? Whatever leaders may say (European Commission President Ursula von der Leyen [foolishly suggested otherwise](#) before being slapped down by her own experts) it's a complex and very time-consuming business; promising candidates often don't make it. Anthony Fauci, America's top expert on infectious diseases, has warned that it will be [12-18 months before a vaccine is ready](#). The European expert agency has said [the same thing](#).

Here's the terrifying prospect. Look at what's happening in Italy, where the medical system has been stretched to capacity by 40,000 cases, and under 500 deaths a day. Now imagine just 400,000 cases. The death-rate will increase much faster than the case-rate, because despite whatever manufacturing efforts can be rushed those vital critical care beds and ventilators and skilled nurses will be far fewer than are needed for treatment of the seriously ill. So death rates will go up, and the swamping of the healthcare system will also lead to a spike in deaths of people who don't have the virus but something else. This will look very like hell on earth. See [this stark report](#) that apparently had a big impact on UK and U.S. policy.

It's this prospect that has made governments take extraordinary measures to slow the infection rate and hope they can keep it down. But that will likely involve de facto quarantine for all of us except those in healthcare and other vital services (from food delivery to garbage collection) who will need state-of-the-art PPE. It will also involve our being able to keep the economy going (the global economy as well as our own household economies) for months on end, with most people working from home.

Have you seen the 2011 movie [Contagion](#)? It's a disaster movie, of course, and they are rarely great cinema. But it's well-regarded, since it is mostly realistic in its depiction. What is not realistic is the speed with which the vaccine is developed – and in the movie, the vaccine is the only way to stop the disease. So it's possible that we really need to look 18 months ahead for a vaccine to come and save us, or those of us who are left – a scenario set out in a recently leaked report from [the U.S. Government](#).

Of course, pandemic SARS-CoV-2 can only have come as a complete surprise to the blinkered, the short-sighted, and the obtuse, though sadly our governments, democratic and autocratic, harbour plenty of women and men who qualify on one or more of those criteria. The SARS-1 (2003) and MERS (2012) outbreaks – both more deadly diseases that mercifully proved far less contagious than the latest – sounded loud, clear warnings to the global community.

As we scramble to fight this fire, legislatures need to make it a priority that there will be robust resources in place for next time. And – per impossible – our political (and bureaucratic) leaders need not to be blinkered, short-sighted, and obtuse.

Because there are plenty of zoonotic diseases out there, waiting in line. Anyone for Covid-20?



FRIDAY, MARCH 27 2020

IN THE FACE OF GLOBAL THREATS, CANADA'S SCIENCE ADVISORS CAN HELP US MOVE FROM HINDSIGHT TO FORESIGHT

PROF. PAUL DUFOUR, PRINCIPAL, PAULICYWORKS AND SENIOR FELLOW, ISSP, UOTTAWA

[Originally published by Research Money on March 25, 2020](#)

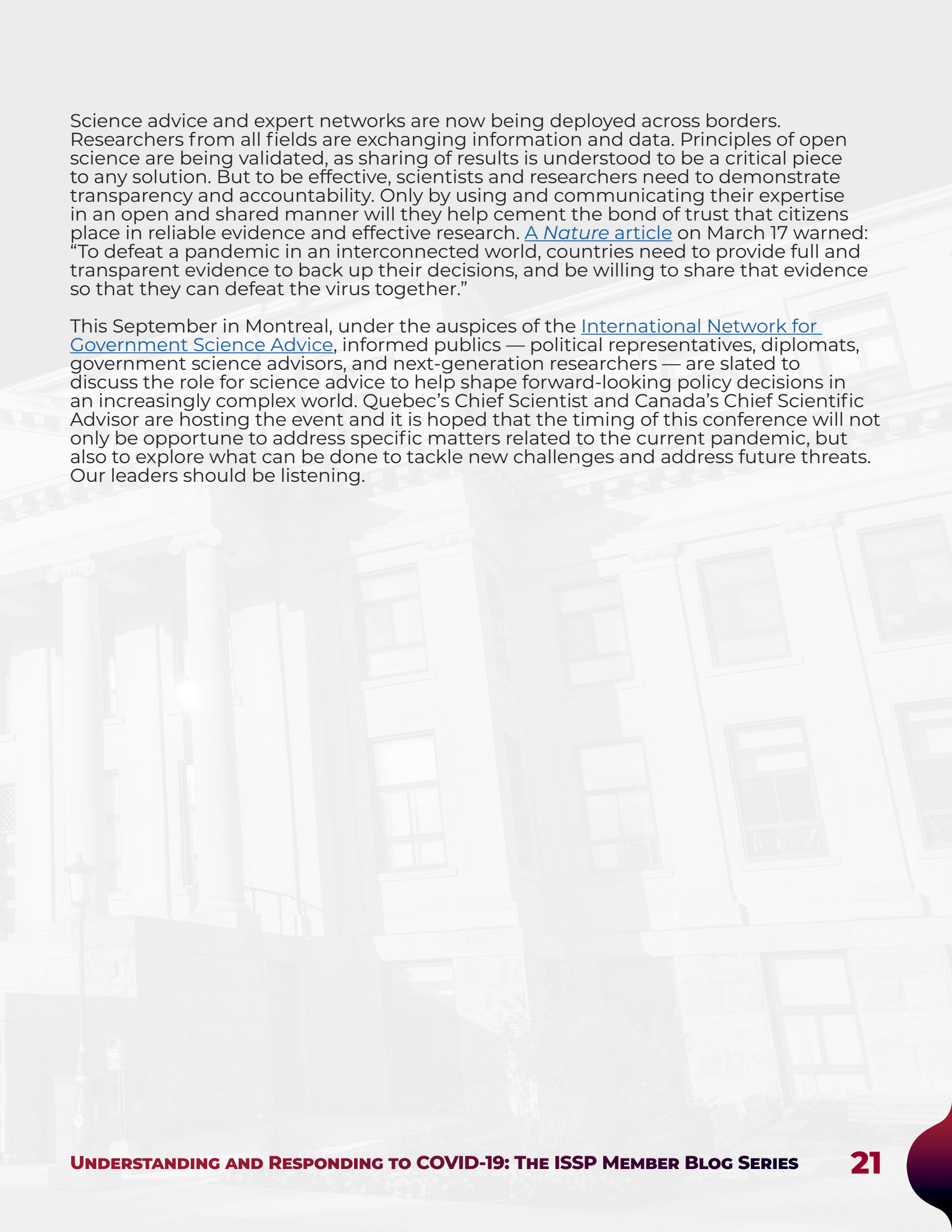
In troubling times, sound and timely science advice matters. It helps if you have trusted structures and institutions to rely on for such advice. Canada has been fortunate to have a public that largely trusts its knowledge and science actors. Indeed, within the government, the chief public health officer and chief science advisor have been working tirelessly to provide the best possible advice to the government, based on inputs from their respective networks and working groups. Other key organizations and experts have also been engaged and are providing valuable input.

Advice, of course, is just advice — it's an art, not a science. Other factors weigh into the policy and political calculus, requiring a broad range of experts from all sectors. What makes science advice and its interdisciplinary, global approach special, however, is that researchers naturally adopt an over-the-horizon perspective. As C.P. Snow once argued, "Scientists have it within them to know what a future-directed society feels like, for science itself, in its human aspect, is just that."

Take, for example, the large-scale foresight exercise of the UK's Office of Science and Innovation, undertaken in 2006 and titled [Infectious Diseases: Preparing for the Future](#). Looking 10-25 years ahead, this landmark study examined potential threats and offered visions of future detection, identification and monitoring systems. Framed within a climate change perspective, the report looked at human and zoonotic diseases in China and elsewhere, and noted that the risk of zoonotic infection showed no sign of diminishing and could increase in the future. An action plan was prepared that underscored early detection and the need for high-throughput screening of people at airports, as well as other forms of surveillance and quarantine.

Sir David King, the UK's Chief Scientific Advisor of the day, presented the final report at a conference sponsored by the Royal Society, having also outlined the key points at a meeting of G8 science advisers and ministers the previous year. It's not clear what impact this major, forward-looking study actually had, nor what was finally implemented — but clearly, the authors recognized an emerging set of issues requiring action. Science communities and their advisory capacities can be put to very good use in horizon-scanning for opportunities as well as threats.

We have such a global threat today. We need leaders that can act on the evidence, using input from the sciences and the research community.



Science advice and expert networks are now being deployed across borders. Researchers from all fields are exchanging information and data. Principles of open science are being validated, as sharing of results is understood to be a critical piece to any solution. But to be effective, scientists and researchers need to demonstrate transparency and accountability. Only by using and communicating their expertise in an open and shared manner will they help cement the bond of trust that citizens place in reliable evidence and effective research. [A Nature article](#) on March 17 warned: “To defeat a pandemic in an interconnected world, countries need to provide full and transparent evidence to back up their decisions, and be willing to share that evidence so that they can defeat the virus together.”

This September in Montreal, under the auspices of the [International Network for Government Science Advice](#), informed publics — political representatives, diplomats, government science advisors, and next-generation researchers — are slated to discuss the role for science advice to help shape forward-looking policy decisions in an increasingly complex world. Quebec’s Chief Scientist and Canada’s Chief Scientific Advisor are hosting the event and it is hoped that the timing of this conference will not only be opportune to address specific matters related to the current pandemic, but also to explore what can be done to tackle new challenges and address future threats. Our leaders should be listening.



WEDNESDAY, APRIL 22 2020

HOW POLICYMAKERS SHOULD USE THE WEALTH OF COVID-19 DATA

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[Originally published by the World Economic Forum, on April 20, 2020](#)

The world has not known, in living memory, a pandemic on the scale of what we are experiencing with COVID-19. Nor has the world had access to data and analysis, much of it being generated rapidly and disseminated freely, on the SARS-CoV-2 virus itself. Navigating a path out of this crisis will require effective integration of this data into decision making.

This is not an easy task at the best of times. It is even harder now because the virus causing the pandemic, SARS-CoV-2, is new to humans, having crossed the species barrier from bats. As little as four months ago, we could not answer even the most basic questions about the virus and the disease it causes – how transmissible is it, how virulent (damaging) is the disease to our bodies, whether we can mount an effective immune response. We are learning as we go.

We've been here before, most recently with coronaviruses that caused the Middle East Respiratory Syndrome (MERS) in 2012 and, before that, SARS in 2002. We knew just as little then as we do now about these diseases when they were first observed in humans. The difference between then and now is how fast we are learning the basic biology of the virus and the disease it causes, and how we are navigating the uncertainties along the way.

New technologies for rapid data generation and dissemination are making it possible to gather and analyze data about the virus in near real-time. Never before have we seen this much data generated and shared so quickly, sometimes at the cost of more uncertainty than we would like. But the speed and scale with which this virus spreads and evolves means that never before have so many needed this data so urgently.

Consider the beginning of the pandemic in January, as the virus started to spread from its origins in Wuhan, China across the world. With no vaccine available, the only public health intervention tool available is containment, and doing this effectively requires knowing where the virus is and how fast the virus is spreading from person to person. Rapid diagnostics and widespread testing to find cases and trace their contacts at a regional level are key here, as the success of early programmes in places like Taiwan, Singapore, and South Korea demonstrate.

Delay, even by as little as a few days, can be disastrous, as Italy was the first to learn. Looking ahead, new tools for point-of-care diagnosis, that can go from swab to signal in less than an [hour](#) will be indispensable in accelerating the scale and scope of testing.

Getting the numbers right is a real challenge. Right now, best estimates are [a single case of SARS-CoV-2 infects on average 2.5 additional people](#). But uncertainty around the transmission dynamics of the disease mean this number can vary substantially

and, along with it, the expected total number of deaths. The predictions from epidemiological models are only as good as the data we feed into them. Policymakers must be willing to live with uncertainty in the predictions, and adjust their recommendations accordingly.

The objective of public health measures like hand washing, social distancing, and quarantine is to reduce the average number of new infections as low as it can go and ideally to below 1. At this level, the virus will be contained. Indeed, this is the lens through which all decisions should be made right [now](#), in the thick of the pandemic. [Ahead, hard choices will have to be made](#), as public health is weighed against the impacts on the economy, personal liberty, and public trust.

This rapidly changing landscape presents an additional challenge to decision-makers. What appears to be true one day is not true the next, as more evidence comes to light. Initial estimates of the mortality rate due to COVID-19 are a case in point. The case fatality rate (CFR; the number of confirmed infections resulting in death) was first reported in January to be as high as 15%, but more and better information has seen a steady revision of this number down to [~1%](#). Decision-makers need to be ready to revise their recommendations in light of new information, and be ready to explain those changes openly and honestly to the public.

The sheer rate at which data is being generated presents a unique opportunity. Take the growth in genomic data as an example. The sequence of the original Wuhan strain was uploaded in mid-December 2019. As of this writing, there are now just shy of 4,000 SARS-CoV-2 strains available for analysis. This is a rate of growth in data that is, quite simply, staggering. The virus evolves rapidly, accumulating mutations at the rate of one every two weeks or so. Managing and making sense of the data is helped by public repositories like [GISAID.org](#); while analysis platforms like [nextstrain.org](#) allow near [real-time tracking of viral evolution and spread](#).

In this climate of rapid data generation and widespread sharing comes additional risk about the accuracy and reliability of the data. The usually slow, deliberative process for evaluating results has accelerated, increasing the possibility of mistakes being made. The risks are lessened somewhat by a more informal and open peer review process playing out in online fora, linked to pre-print servers (which collate academic papers before they are formally peer reviewed and published) like medRxiv, bioRxiv, and virological.org and even Twitter.

Multiple groups working on the same problem also helps. If all arrive at the same answer while working independently and using slightly different approaches, we can be fairly certain the result they come to is robust. Policymakers would do well to remember the advice of the late biologist Richard Levins on the use of [mathematical models](#), our truth is the intersection of independent lies. The same is true for navigating the wealth of scientific literature.

SARS-CoV-2 jumped the species boundary into humans and is galloping from country to country along the richly tangled web of global connections that we have woven. This is a problem of our own creation. Fortunately, we now have more effective levers to bring it under control. New tools for rapid data collection and analysis make it easier to feed the right type of evidence into decision-makers' hands.

This is not enough. A strategic forum to establish a harmonized global approach would help, as would embedding epidemiologists into policy shops where they haven't traditionally been located, like urban planning departments in cities. Most importantly, decision-makers need to maintain public trust. This starts by listening to the science, adapting policies as new data comes to light, and explaining the changes clearly to the public.



SUNDAY, AUGUST 9 2020

A VARIETY OF RESPONSES TO COVID-19 IN EAST ASIA

PROF. ANDRÉ LALIBERTÉ, PROFESSOR, FACULTY OF SOCIAL SCIENCES AND FACULTY AFFILIATE, ISSP, UOTTAWA

East Asia presents a remarkable picture in the face of the COVID-19 pandemic. Taken as a whole, this region is the least affected in the world in terms of mortality rates attributed to the infection. One could add to China, Japan, the two Koreas, Vietnam, and Taiwan, the cases in Australia and New Zealand, as well as countries that have been spared so far on other continents. It is important to draw attention to the East Asian countries, with their varying economic conditions, to see what lessons can be learned. Countries in the region, from post-industrialized Japan to very poor North Korea, cover a wide range in terms of their level of economic development. The political regimes are also very diverse, with the three democracies of Japan, South Korea, and Taiwan, on the one hand, and the authoritarian regimes of China, Vietnam, and North Korea, on the other.

China is a special case: the ravages of the epidemic affected this country first, and for the time being the country seems to have contained the danger. It has paid a high price to achieve this: the heavy-handed approach used by the authorities included measures of mass confinement on a scale barely tolerable in liberal societies. The results are remarkable, but the regime has avoided claiming victory too early, with [a resurgence of cases](#) observed at the end of July.

The case of Vietnam is certainly extraordinary, as the numbers from [the Coronavirus Resource Center at Johns Hopkins University](#) show. More populated than Germany, the country counts a fraction of the number of people affected: only 621 Vietnamese compared to more than 211,000 Germans. For 99 days, Vietnam experienced no loss of life from the disease, with [only three deaths as of August 2](#). The rapid closure of borders with China gave the Vietnamese the time and the means to isolate and avoid the worst.

In the case of North Korea, very few give credence to its figures, which state that the country is free of infection. It is plausible that the country was spared because of its international isolation. However, the constraints caused by the international sanctions make the country particularly vulnerable should an infection break out. This situation should be observed very closely as the country admitted to its first cases on [25 July](#) in the town of Kaesong, a city bordering its southern neighbor.

Among democratic nations in East Asia, Taiwan stands out: only 450 cases for a population of 24 million, an economy that functions normally, where classes have not stopped, and without widespread containment measures. This is the ideal scenario to which Canada and so many other countries aspire. The [reasons behind](#) its success are many but can be summarized as follows: an action plan developed over many years, quarantine for infected people, tracking of infected people and their contacts, and the availability of masks.

Case numbers in South Korea, although less impressive than Taiwan and Vietnam, are nevertheless respectable when compared to those of Western European countries. The country's performance would have been even better had it not been for the [Shincheonji church](#), a Protestant sect deemed responsible for more than a third of the cases. [Authorities arrested](#) its spiritual leader on August 1st, and some are advocating that he be charged with criminal negligence.

The case of Japan serves as [a cautionary tale](#). It has been recognized as a model country because of the relatively low number of infections and deaths: declaring a state of emergency to contain the contagion did not confine people to their homes and did not force businesses to close. Targeted screening measures and long-standing practices, such as wearing masks to avoid infecting others, helped achieve these results. However, the relaxation of sanitary measures may have been premature, as the contagion rate has rebounded in recent days.

By the time it comes time to take stock of the pandemic, the world will have changed dramatically: hopefully, we will collectively learn from those countries that have been able to contain the scourge before others while minimizing harm to their economies. The high surveillance apparatus of the three authoritarian regimes in East Asia no doubt appeal to undemocratic countries in other parts of the world. That is a problem in open societies, but also, more profoundly, for opponents of these regimes. In this context it is crucial to stress that the authoritarian approach is not the only one that works. The democratic societies of Japan, South Korea and Taiwan have all, despite some differences, demonstrated their ability to cope with this scourge without sacrificing democratic freedoms.



THURSDAY, SEPTEMBER 17 2020

LINKING SCIENCE, HEALTH AND POLICY MORE EFFECTIVELY: FORESIGHT FOR THE NEXT NORMAL

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[Originally published by The Hill Times on September 10, 2020](#)

Hindsight is 20/20- or so they say today. But what happened to foresight?

It's November 7, 2001. The place is Ottawa. The meeting is with health ministers and officials from Canada, France, Germany, Italy, Japan, Mexico, the UK, the US and the EU. The topic is health security and bioterrorism - a few months following the events of 9/11. The ministers design a plan for improving health security for the future.

Among the actions they propose are new partnerships to address critical issues of public health and security, including working more closely with the WHO. The objectives include: to explore joint cooperation in procuring vaccines and antibiotics; to engage in constructive dialogue regarding the rapid testing, research in variations of vaccines; to support the WHO's disease surveillance network along with WHO's efforts to develop a coordinated strategy for disease outbreak and containment; to improve linkages among level four laboratories; and to agree on a process for international collaboration on risk assessment and management and a common language for risk communication.

Fast forward five years to May 6, 2006. The place is London, at the Royal Society.

The occasion is a conference on the release of a foresight report titled 'Infectious Diseases: Preparing for the Future'. The opening address is given by Sir David King, Chief Scientific Advisor to the UK Government who had provided the report's highlights at a meeting of G8 science advisers and ministers in late 2005.

The conference has key sessions on future risks of infectious diseases, future science and systems for detection, identification and monitoring, and societal contexts for managing diseases in the future. Looking 10-25 years ahead, the foresight study examines potential threats and offers visions of future detection, identification and monitoring systems. Framed within a climate change perspective, the report explores human and zoonotic diseases in China and elsewhere, and notes that the risk of zoonotic infection shows no sign of diminishing and could increase in the future. An action plan is prepared underscoring early detection and the need for high-throughput screening of people at airports, as well as other forms of surveillance and quarantine.

Two different times, two different global contexts--- one major issue: how to anticipate, mobilize and respond to health outbreaks with science, technology and research taking the lead.

It's now September 2020. The place is Canada. The crisis is a major health pandemic with ramifications for society, the economy, environment, and global statecraft. Elected officials of all stripes are trying to follow the science and evidence-- in its many forms.

Multiple expert panels and task forces are underway in the country at the federal, provincial and territorial levels tackling key issues in rapid response time. Public health officials and science advisors are doing their best to filter, assess and communicate the fast-moving pace of evidence and data. It is understandably piecemeal, reactive, with risk assessment and communication a critical element of the narrative to maintain public trust and confidence in the polity and the science.

Advice and research is underway on a spectrum of issues ranging from the impact of COVID on children, to immunity response, to mental health, to re-imagining senior residences, to impacts on poor and disenfranchised populations, to training of the next generation of talent. Granting councils are funding pandemic research; schools, universities and colleges are adapting to the new learning; academies and institutes are posting expert blogs and commentary on a wide variety of pandemic subjects; innovative industry sectors are pivoting to respond... and the digital world has greatly transformed learning and knowledge.

But with hindsight, what have we learned from missed warnings decades ago? Some have argued that this is a moment not merely to deal with the virus, but to address the underlying issues that make this virus and this epidemic more severe, including the wide-ranging social impacts and research challenges beyond the immediate crisis.

What will be the plan after the pandemic is managed? Who will show the necessary leadership and how will citizens participate meaningfully? Will we see more effective national coordination on research, innovation and health strategies? Can we become technologically sovereign with vaccines, medical devices and equipment while maintaining our global science outreach? Will we go beyond the mere rhetoric of being prepared for the next global emergency?

The lessons of the past should tell us that foresight and follow-up matter.

In short, it is not too early to start planning for a next normal within our knowledge and research ecosystem across the country. Above all, it is important to remember that science and technology communities and their advisory capacities can be mobilized in horizon-scanning for future opportunities as well as threats, without compromising the very nature of longer-term discovery science. But in the end, it is vision and leadership that matters in making decisions, and trust by citizens that must be maintained. Otherwise, the shadows of doubt will overcome the lights of knowledge.

An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and various buildings. A large, semi-transparent white circle is overlaid on the left side of the image, partially obscuring the city view. The text is centered within this white area.

LOCKDOWNS, UNANTICIPATED CONSEQUENCES AND REOPENING





FRIDAY, APRIL 3 2020

WHAT HAPPENS AFTER THE PANDEMIC CURVE FLATTENS?

PROF. MICHAEL WOLFSON, MEMBER OF THE CENTRE FOR HEALTH LAW, POLICY AND ETHICS AND CORE MEMBER, ISSP, UOTTAWA

[Originally published by The Globe and Mail on March 23, 2020](#)

[Radio interview to the National Post](#)

Many governments, including Canada's, have taken too long to recognize the seriousness of the coronavirus pandemic [when even days](#) of delay can have large effects on the ultimate death toll. Our governments are only now recognizing that successfully flattening the epidemic curve means that we could be self-isolating for more than just a month or two.

Planning for the phase after – the time we begin relaxing the social-distancing measures – can and should start happening now.

If this relaxation is not done very carefully, the epidemic will simply resume. During the 1918 Spanish flu epidemic, which killed tens of millions worldwide, some cities, such as St. Louis, quickly instituted rigorous social distancing, while others, such as Philadelphia, did not. Both had [resumptions of the epidemic](#) after their social distancing and quarantine efforts were relaxed.

At present, a major issue is that we do not even know, in Canada and in most other countries, how many individuals are infected. We know how many cases have been reported, but these tend to be individuals with more than very mild symptoms. Various studies have estimated that for every reported case, there could be anywhere from [10 to 100 unreported cases](#).

Successfully limiting the spread of the virus is possible, as we can see in Wuhan, Singapore, Taiwan and South Korea. We can avoid the catastrophe unfolding in parts of Italy, where doctors are now having to decide who among their gravely ill patients can have their life saved with a ventilator.

But how will we know when and how to begin relaxing the very stringent social-distancing measures now being implemented, and allow Canadians to safely resume their daily lives without fear of getting sick, and without the risk of infecting anyone else?

For evidence-informed public-health policy, we need accurate information.

There is an [international movement](#) to develop smartphone apps that, with big data analytics, could provide critically needed real-time information to help track the pandemic. But serious options quickly run into questions of protecting personal privacy, especially with the public's growing concerns about the behaviours of high-tech firms such as Google, Facebook, Amazon and Twitter. So, is there a way, in Canada, to be both sensitive to very real concerns about personal privacy and use the obvious potential of social-media-type apps?

In principle, individuals with immunity could be issued a “green card” authorizing them to resume fully all their social activities. On the other hand, those who are infected would have a “red card,” while those who are still susceptible would be in a “yellow” state. In fact, China is implementing a system like this using a smartphone app already. [If your phone shows red](#), your freedom is highly restricted.

Obviously in Canada, surveillance measures would have to be compliant with protections guaranteed under the Canadian Charter of Rights and Freedoms and relevant federal and provincial privacy laws. But there would be major benefits to developing this kind of data infrastructure to manage both the current and subsequent phases of the pandemic.

Public-health policy and implementation need smart ways to manage the relaxation of COVID-19 containment measures. This includes being able to quickly, in real time, identify clusters of new infections and isolate them; and to monitor people arriving from outside the country in case they become infectious.

Monitoring the movements of any already infected individuals will also be necessary in order to enforce isolation as the large pool of Canadians who would still be susceptible to infection returns to more normal social life. Canada's current infectious-disease surveillance data flows are simply not up to the standards of countries such as Taiwan.

Still, there are very serious trade-offs here. The more detailed the data collected, the more sophisticated the evidence that can be produced to inform smart public health policy. But at the same time, more detailed data collection will be more invasive of individual privacy.

Being able to deploy this kind of real-time geographically detailed infectious disease surveillance requires serious planning by Canadian governments and key researchers now.

It is not too soon to begin discussing where to strike the right balance.



SATURDAY, APRIL 4 2020

COVID-19 VISITATION BANS FOR PEOPLE IN INSTITUTIONS PUT MANY AT RISK IN OTHER WAYS

DR. NATALIE SPAGNUOLO, CONTRACT INSTRUCTOR, DISABILITY STUDIES, CARLETON UNIVERSITY AND PROF. MICHAEL ORSINI, FULL PROFESSOR, FACULTY OF SOCIAL SCIENCES AND FACULTY AFFILIATE, ISSP UOTTAWA

[Originally published by CBC News on March 29, 2020](#)

Disabled people know a lot about social isolation.

Many – including those with intellectual and psychiatric disabilities – are relying on the success of COVID-19 containment strategies, and lives are indeed at risk if they are not taken seriously. However, public health measures that restrict visiting rights to those in institutional settings are putting many at risk in other ways.

While public health principles have a rightful place in our decisions, so too do principles that recognize the humanity and dignity of people with disabilities.

As the COVID-19 crisis unfolds, recent decisions to implement visitation bans in group homes for people with intellectual disabilities, in psychiatric hospitals and wards, and in prisons, recall a familiar and painful history for many disabled people. In these days of physical distancing, it is important to emphasize that this is one of the oldest public health measures aimed at "containing" the imagined threat of disability.

Many disabled people are already separated from non-disabled people. It is a legacy of [eugenic segregation](#), which has been resisted by survivors of former government-run institutions for people with intellectual disabilities, such as Huronia and the Rideau Regional Centre in Ontario.

While there are legitimate reasons to think about and act collectively today to contain the spread of COVID-19, there are many "publics" who are ignored in our zeal to soothe the fears and concerns of otherwise healthy, and presumably non-disabled, people. When physical distancing is widely mobilized, other risks emerge for individuals already occupying a socially distant status.

Denying the vital supports provided by trusted people, including family and friends who may assist with decision-making and communication, constitutes not only a disruption or inconvenience, it creates an impossible situation for many. Without these "reasonable accommodations," some individuals with intellectual disabilities, for example, are left with little scope for advocacy in difficult situations, including if conflicts arise with staff members in their place of residence.

Some of these individuals do not have access to cellphones or the internet to stay connected with other people. Others, as a result of communication-related disabilities, may not be able to use phones, TTY, email or Skype.

And if the dark history of isolating disabled people has taught us anything, it's that closed institutional settings breed violence. [Survivor narratives](#) are a painful reminder of environments marked by physical, sexual and verbal [abuse](#), and sometimes death.

These issues are already well known to many disability communities and organizations. Last week the UN Special Rapporteur on the rights of persons with disabilities, Catalina Davindas, [spoke about disabled people confined in institutions and prisons](#), drawing attention to how restricting contact with trusted people can lead to "abuse or neglect."

The Council of Canadians with Disabilities echoed this concern in a [recent media statement](#) calling for the inclusion of a "disability lens" in all COVID-19 planning.

We fully support recommendations made by the ARCH Disability Law Centre in Toronto, which on [March 24](#) urged recognition of "caregivers and disability support staff as essential service providers." ARCH also asked the government to work with provinces and territories to, "Ensure that hospitals make an exception to any blanket prohibition of visitors when a person with a disability requires assistance with vital services like communication, caregiving, or supported decision making."

Such exceptions are equally important in group home settings.

In light of the 2019 passing of the Accessible Canada Act, the failure to consider the 22 per cent of Canadians with disabilities in the government response to COVID-19 is immensely disappointing. Emergency planning must equally recognize those disabled people without status, including disabled migrants who [face the multiple risks outlined by the Migrant Rights Network](#), not least of which is the threat of detention and deportation if they seek medical care, and increased vulnerability to contracting COVID-19 if they are detained.

Government-mandated physical distancing for those already socially distant and made vulnerable by support systems, immigration and carceral policies, is harmful and surely not in the best interests of public health, unless disabled "publics" do not figure in our estimation of who counts.

We must take stock of differences in terms of impairment, and appreciate how gender, sexuality, race, class, language, migration status, and other factors shape disabled peoples' experiences with physical distancing.

Pundits will no doubt opine that these are extraordinary times, and as the argument goes, they justify extraordinary measures to protect the public. But for people with disabilities, their needs continue to be exceptional in an age in which we aren't making exceptions. This is the inevitable circularity of pandemic logic, which is rooted in justifying actions that are outside of the typical limits of legitimate state activity. But in pandemic times, we still need to take the time to think about our ethical commitments to disabled people.

These include respecting a person's right to access trusted people who provide empowering supports. We can start by exempting these relationships from physical distancing measures.

Scholar Michael J. Prince reminds us that disabled people are "absent citizens," their power assumed to be non-existent. Politicians need not worry about their vote; most people can go about their lives with limited concern for the livelihood of those who vacillate between being regarded as objects of neglect and being looked upon with charity or pity. In either of these formulations, there is limited space for imagining intellectually disabled people as rights-bearing individuals who are flourishing, but it's something society must not forget.

Crises can bring out the best in people, and we have witnessed numerous examples during this pandemic, including the [caremongering movement](#) that has emerged in Canada to support disabled people, among others.

But it is critical in our crisis planning to consider the lives of disabled folks, whose connections to society matter now more than ever.





MONDAY, JUNE 22 2020

COVID-19, ITS AFTERMATH AND DISABLED PEOPLE: WHAT IS THE CONNECTION TO ETHICS?

GREGOR WOLBRING, ASSOCIATE PROFESSOR, FACULTY OF MEDICINE, UNIVERSITY OF CALGARY AND SENIOR FELLOW, ISSP, UOTTAWA

An earlier version of this blog was originally published [on the World Council of Churches website](#) on June 10, 2020, which is an abridged and edited version of the original, published on [Gregor Wolbring's blog](#) on May 19, 2020

Ethics is about what one ought to do. [Many secular and non-secular ethical theories and principles exist](#) to give us guidance. Which ethical theories and principles are employed to understand and respond to the points of impact of COVID-19 on disabled people?

There are many different contemporary ethic discourses, ranging from medical ethics to artificial intelligence ethics, robotic ethics, and environmental ethics. In the complex world of societal change, many of these kinds of ethics discourses are relevant to the lives of disabled people during and in the aftermath of COVID-19.

Disabled people can be impacted by COVID-19 and its aftermath in so many ways:

1. As potential users of COVID-19 protection measures (whether the protection product is accessible for use by disabled people or others)
2. As potential non-therapeutic users (consumer angle of non COVID-19 products)
3. As potential consumers of COVID-19 knowledge
4. As potential producers of COVID-19 knowledge
5. As potential therapeutic users (as patients, getting treated)
6. As potential diagnostic targets (diagnostics to prevent “disability,” which might increase in the aftermath of COVID-19 due to changing family circumstances)
7. By COVID-19 protection guidelines (staying at home, no visitors in group home, etc.)
8. By changing societal parameters in the aftermath of COVID-19 (how we act toward each other)
9. By changing societal parameters caused by COVID-19 aftermath (how do certain companies act toward disabled people?)
10. By more non-disabled people competing with disabled people for existing jobs after COVID-19
11. Increasing autonomy of a product or process (e.g. AI/ML judging disabled people, see algorithm bias in health insurance and AI hiring people)

Where are the disabled in our public discourse?

At root, these are ethical concerns, matters that should be deliberated in our public discourse. But how much have the concerns of the disabled and the people linked to them really been reflected in our public media?

I looked at some Canadian English-language newspapers and the New York Times to ascertain which of the above 11 impacts are evident and how ethics is used in relation to disabled people in their COVID-19 coverage.

On April 27, 2020, using *Canadian Newsstream* (a database consisting of 190 English-language Canadian newspapers), I searched the terms "COVID" or "Corona" or "SARS-COV-2," and obtained 63,441 articles. To find content related to disabled people, I searched the same terms and added the search terms "disabled people" or "people with disabilities" or "disabilities" or "disability," which generated 759 hits, all of which were dated March or April. Of these 759 articles, 39 were in *The Globe and Mail* and 12 in the *National Post*: the two Canadian newspapers with national distribution.

Till recently, the coverage was mostly about, for example, how early hours were now available for shopping for disabled people. In the last three weeks two main issues emerged.

The first main topic was that disabled people and disability groups were quoted as saying that they are not listened to. While government has been responsive to the needs of vulnerable populations with financial supports, it is not clear that they are putting a disability lens on decision-making. Advocates and stakeholders have been frustrated and [concerns remain](#). Especially in the areas of equality of access to health care and supports; access to information; and the lack of an emergency response plan for people with disabilities.

Given that some recent articles give voice to disabled people saying they are not heard, it is puzzling that only three articles mentioned that [the Canadian government set up a Canadian disability advisory group](#) on 4 April. One would have expected that the newspapers mention this development much more.

Even more troubling is that the newspapers so far did not even once mention the guidance document COVID-19 and Disability: Recommendations to the Canadian Government from Disability Related Organizations in Canada, published by Canadian disability groups on March 24.

The second major topic in Canadian coverage was about the possibility of disabled people not getting treated. This concern of disabled individuals and disability groups was flagged in [an open letter to the Premier of Ontario](#) on April 8, referring to the so-called triage protocol developed in Ontario. The term "triage protocol" was mentioned in 11 articles between 30 March and 21 April.

Within the Canadian newspapers covering COVID-19 and disabled people (search done April 27), ethics is only mentioned once in detail, and it is linked to how resources are allocated. The one article seems to make a case for the utilitarian approach to ethics, for the ones who benefit the most. [The newspaper article](#) said that the *COVID-19 Ethical Decision-Making Framework* from British Columbia, Canada, follows the principle of equality because it states that “Resource allocation decisions must be made with consistency in application across populations and among individuals regardless of their human condition (e.g. race, age, disability, ethnicity, ability to pay, socioeconomic status, pre-existing health condition social worth, perceived obstacles to treatment, past use of resources).” But such a conclusion is not a given because the same document states that “Resources ought be to distributed such that the maximum benefits to the greatest number will be achieved,” a utilitarian approach.

Only the real situation will show how it will play itself out around disabled people. Indeed, the document [Ethics and COVID-19: Resource Allocation and Priority-Setting](#) by the World Health Organization sees the egalitarian and utilitarian as two different approaches.

In other coverage of the pandemic, moving beyond disabled people I also looked at the 260 documents that mentioned “COVID” or “Corona” or “SARS-COV-2” and “ethics” (end time 27 April). Many were false positive. 20 articles focused on the issue of how to distribute resources in the case of shortages, and only one article mentioned disability. Not one article discussed that disabled people might have a problem based on which approach is taken; an ethic theory utilitarian was the only one mentioned. Updating my search till 14 May, I found no new article on ethics covering disabled people and COVID-19.

I did the same searches for The New York Times on 27 April 2020, finding only 28 articles that mentioned disabled people in relation to COVID-19, whereas I found 1,397 hits without disabled people. Of these 28 articles most were not on the topic. One mentioned disabled people as a source of new workers for call centres, one questioned the care industry, one suggested mobile testing units for disabled people, and one highlighted the spread of COVID-19 in group homes in New York. “Ethics” as a term was not mentioned once. Updating my search till 14 May 2020, I found one hit that engages with the topic around ethics and COVID-19 and disabled people.

Where is ethics in the public discourse?

The data I obtained from my searches show that, at least for the newspapers covered, ethics was not used to build a positive ethical framework for understanding and supporting the needs of disabled people in the time of COVID-19.

The newspaper coverage does not reflect the reality that different and competing ethical theories can justify different actions. Furthermore, the newspapers only engaged ethics with the focus on medical ethics, leaving out the many other relevant ethical fields such as artificial intelligence ethics and environmental ethics that will influence how disabled people will be treated during and in the aftermath of COVID-19.

My research indicates that ethics is not used in the newspaper COVID-19 discussions as a lens to highlight a positive angle for disabled people or to outline systemic problems playing themselves out in the moment around COVID-19 and disabled people. It seems we have not learned from our mistakes in dealing with disabled people in prior disasters, whether heat waves, hurricanes like Katrina, or other disasters. This is troubling.

Susan Sherwin, a leading ethicist, has concluded that “[we \[ethicists\] lack the appropriate intellectual tools for promoting deep moral change in our society.](#)” I made the point [elsewhere](#) that most people don’t think in terms of morals or ethical theories or use ethics as a concept to better their situation. They think in concrete impacts, about what will affect their good life. Even when they use concepts such as rights, discrimination, or equality, they do not link them to ethics as such.

In general, the newspaper coverage of COVID-19 and disabled people seems to support this view. Terms such as “human rights” and not “ethics” were used to try to further the situation of disabled people in the COVID-19 situation.

Whether one uses “ethics” or other terms and concepts such as “ability expectation” and “ableism” and “the governance of ability expectations and ableism” ([especially suitable to map out conflicts between groups and people](#)), what is needed is an engagement with all of the ways that the pandemic and its aftermath affects disabled people and that these terms are used to enable, rather than disable, disabled people.



WEDNESDAY, SEPTEMBER 2 2020

REFUGEE ACCESS TO HEALTH CARE DURING COVID-19 SHOULD NOT BE AN AFTERTHOUGHT

PROF. RUKHSANA AHMED, ASSOCIATE PROFESSOR, UNIVERSITY OF ALBANY, STATE UNIVERSITY OF NEW YORK AND FACULTY AFFILIATE, ISSP, UOTTAWA AND ZEBI TASC, ASSOCIATE COMMUNICATIONS OFFICER, GRAND CHALLENGES CANADA

[Originally published on The Hill Times on August 26, 2020](#)

As the COVID-19 pandemic continues to evolve and spread across the world, so will its disproportionate impact on refugees. With the majority of refugees [coming from](#) Syria, Venezuela, Afghanistan, Somalia, South Sudan, and Myanmar, they are among the world's most vulnerable populations and are facing unimaginable hardships and barriers to keep safe from the coronavirus.

Refugees in the context of COVID-19

Refugees living in camps

For refugees residing in refugee camps, existing health conditions and disparities are further compounded by limited access to safe water, sanitation and hygiene, crowded spaces, and lack of accessible information. With infrequent access to healthcare providers, these refugees do not even have the foundation to face the COVID-19 crisis. To illustrate, [a recent study](#) projected the potential impacts and burden of COVID-19 on Rohingya refugees from Myanmar, where a single introduction of the virus in the Kutupalong-Balukhali Expansion Site in Bangladesh with 600,000 people would lead to up to 370 people infected within the first month and up to 589,000 people infected in 12 months. Because the hospitalization needs would exceed the number of beds available (340 beds), up to 2,880 deaths are estimated as a result of a single case of COVID-19. Therefore, detailed and realistic planning for refugee camps is critical to reduce infections and fill gaps within access to healthcare services to avoid mass death in refugee camps.

Refugees living in host countries

Refugees resettling in their host countries have the added [burden](#) of navigating a new health-care system, overcoming economic, sociocultural, religious, and geographic barriers, as well as language barriers for accessing critical health information. Additionally, the health disparities of refugees are further exacerbated by the high prevalence of mental health diseases, including anxiety, Post-Traumatic Stress Disorder (PTSD), mood disorders, and other mental health conditions and noncommunicable diseases among them.

Although the experiences for refugees living in camps and refugees in host countries may be unique, the lack of access to essential health-care services for all refugees should be recognized as a missing human right.

Identifying barriers to accessing health-care services

The racial and ethnic disparities in health care and unequal health burdens of refugee populations put them at disproportionate health risks from COVID-19. For example, researchers in their [study](#) of Syrian refugee women in Toronto found the barriers to accessing and using health-care services facing newcomer Syrian women were imposed by the language spoken, social disconnectedness, beliefs about alternative medicine, limited public transportation, and lack of culturally appropriate services (including linguistic and gender considerations). Therefore, understanding these financial, social, and structural barriers are crucial, because when healthcare providers demonstrate and act on understanding the unique needs of refugee population groups, [improved health-care outcomes](#) will ensue.

In their [study](#) of refugees entering the United States, researchers have found that for newly arrived refugees in the northeast U.S., multiple barriers to accessing acute care existed, including challenges navigating and understanding the health-care system, challenges scheduling timely visits, language barriers, and difficulty understanding the intricate details of health insurance. However, proper interpretation services and extending insurance coverage can help bridge the gap and encourage refugee access to health-care services.

Refugees, like immigrants as well as Black, Indigenous, and people of colour (BIPOC) must often overcome increased barriers and challenges when accessing health-care services. The limitations of current efforts to address the disproportionate burden on accessing critical information by people who speak little or no English have left communities to fend for themselves using new media platforms, like YouTube, to properly communicate [essential health information in various languages](#). Where governments, medical facilities, and public health policies fail to meet the needs of marginalized and vulnerable groups such as refugees, citizens, and community members have stepped up to save lives during the COVID-19 pandemic.

Call to action

Health care must be accessible and available to all; barriers that exist for refugees in accessing health care must not be an afterthought. Responding to the health care needs of refugees requires co-ordinated, multi-sector initiatives that address the social, economic, and structural barriers to their access and use of health-care services. Although understanding the underlying challenges and persistent health burdens are crucial, additional public health efforts must be implemented that consult refugee populations, religious and cultural leaders, and consider the experiences and beliefs of refugees in regard to their health for creating equitable and culturally appropriate services and policies for refugees. With such careful forethought and planning, we can start to build a safer and healthier future for refugees during pandemics like COVID-19 and beyond.



MONDAY, SEPTEMBER 7 2020

SENDING CHILDREN BACK TO SCHOOL DURING THE COVID-19 PANDEMIC CONCERNS US ALL!

PROF. JENNIFER WALLNER, ASSOCIATE PROFESSOR, FACULTY OF SOCIAL SCIENCES, UOTTAWA AND PROF. PATRICK LEBLOND, ASSOCIATE PROFESSOR, GPSIA AND FACULTY AFFILIATE, ISSP, UOTTAWA

On August 17, we convened health, education and economic experts on [The Benefits & Challenges of Sending Children Back to School](#) webinar, to discuss the benefits and challenges of sending children back to school in person this fall. We wanted to bring together a wider range of people who rarely have the occasion to speak face to face. Here's what we found out.

To begin with, reopening schools for in-person teaching concerns us all! The only way that sending children back to school can work and not go back into lockdown is if community transmission remains low. In other words, the curve has to remain flat!

For that to happen, governments (federal and provincial), businesses, municipalities, school boards, etc. have to work together and coordinate their actions; it cannot simply be left to individual schools and families to make this work.

Take a simple but important example: [workers who have no paid sick days and cannot afford to stay home to take care of their children when they are sick are likely to send them to school anyway, risking a Covid-19 outbreak](#). The same issue applies to supporting educational staff and occasional teachers, who rarely have sick-day protection; [they might show up at school even if they are not feeling well, hoping that they just have a cold or the regular flu](#).

Yes, schools can limit the damage by creating isolated “bubbles” (assuming that they have the means to do so) and public health authorities can perform effective contact tracing and testing. But wouldn't it be better if we prevented such a scenario in the first place?

Paid sick leave is not without cost, however. So, the business community and governments have to figure out who will pay what amount and for how long. The question about sharing costs applies to a number of other issues not directly related to schools' reopening. For instance, what do we do with businesses (e.g., bars, restaurants, nightclubs, theaters, airlines, etc.) that need to have limits imposed on their activities to prevent community transmission? Do we help them financially? Do we just let them fail? And, again, who pays, how much and for how long?

Answers to these questions only arrive through planning and coordination between all stakeholders to produce solutions. These solutions can and should vary in different parts of the country depending on the risk of an outbreak. Such community-wide cooperation would go a long way to reduce the uncertainty surrounding the pandemic.

Given the challenges of reopening schools, why not just keep children at home and teach them online? Wouldn't it be a better way to keep the curve flat and allow the economy to keep recovering? But that's a false choice! [For a large share of Canadian families, keeping their children at home is simply not an option.](#)

And even for those who could keep their children home, it is not without costs. When parents stay home, it costs the Canadian labour force, which loses productive workers – mostly women – [who decide to give up their jobs and careers to take care of their children.](#) In many sectors, [qualified workers are already hard to find.](#)

It also costs our children, who often receive a lower quality education since online teaching [has not been as effective as in-person teaching](#) (a lot of work and investment need to be done to increase that effectiveness). [Staying at home also affects our children's social development as well as their mental health.](#) These immediate costs will also have long-term effects on our society and economy.

These costs will not be borne equally across society. They will deepen existing inequalities, [as the first lockdown already made so clear.](#) Not only can lower income families not afford to keep their children at home, but they cannot afford the necessary resources for online schooling: computers or tablets, high-speed internet, quiet spaces for studying, parents' time to supervise and coordinate homework as well as troubleshoot computer-related problems.

So, for the good of this country and its people, schools have to reopen so that our children are educated in person by their teachers and other professionals. This must happen in a way where schools are safe and healthy environments for students and staff.

Provincial governments, school boards and schools across the country have now announced their return-to-school plans. We will quickly find out what works and what doesn't. Therefore, we should be ready to share information and ideas, learn from each other, and adapt plans to quickly adopt successful practices and ditch bad ones.

The most important challenge for all Canadians in the coming months will be to make sure that we do not go back into lockdown as a result of community outbreaks following children's return to school, as has been the case in some other countries. This countrywide challenge cannot be left to individual schools and families. We all have to be in this together, for the sake of a healthy, prosperous and equal Canadian society.

An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and a tall building in the background. The image is faded and serves as a background for the text.

DATA COLLECTION, TRACING AND MODELLING





THURSDAY, APRIL 16 2020

WHY HAS CANADA'S DATA COLLECTION DURING THE PANDEMIC BEEN SO BAD?

PROF. MICHAEL WOLFSON, MEMBER OF THE CENTRE FOR HEALTH LAW, POLICY AND ETHICS AND CORE MEMBER, ISSP, UOTTAWA

[A version of this text appeared as an op-ed published in The Globe and Mail on April 13, 2020.](#)

[This original text was published as a comment on the International Association for Official Statistics website.](#)

The following text is a combination of the original Globe and Mail text interspersed with additional insight to provide further context and amplification to make it more accessible for an international audience. The text of the original op-ed is identified as such for clarity.

Up to the week prior to its publication, there was increasing public pressure for the federal and provincial governments to be more open about their projections of the COVID-19 epidemic curves, especially the numbers of cases, deaths, and hospitalizations, and how these trends were likely to affect hospital capacity including ICU beds and ventilators. This pressure in Canada increased as the UK projections from the Imperial College group were disseminated, and increased even more as those projections plus the ones from the IHME group in Seattle induced a dramatic change in the US federal approach.

So finally, in the preceding week, the federal government and several provinces provided some such data. However, from a statistical and epidemiological perspective, these data and projections were very limited, and they generally did not extend far enough into the future to inform Canadians when the stringent physical distancing and lock-downs could end.

Further, I had good reason to believe that one of the impediments was the widespread lack of coherent and timely data. Part of my personal knowledge stems from having been responsible for Statistics Canada's health statistics program from before 1990 to my retirement in 2009. In this role, I had struggled continually to improve Canada's health data infrastructure, but repeatedly faced blockages. I was also responsible for a group of truly excellent microsimulation modelers, where among others we had built models of SARS and H1N1.

(op-ed) Canadians are finally beginning to see projections of COVID-19 cases, deaths and needs for intensive-care units from various provinces and the federal government. We are also starting to see [simulations](#) that look beyond the next month or two when, hopefully, epidemic curves are clearly flattening.

The simulations cited in the previous paragraph were done by one of Canada's leading infectious disease epidemiologists. [In an interview on TV the week before my op-ed was published](#), he made extremely critical comments about Ontario's modeling, and complained strongly about his inability to access the needed data. In general, it is likely that university-based modelers in Canada have stronger analytical capacity than staff within government ministries of health.

(op-ed) Canada's national data-collection capacity will be critical for the next stage of the pandemic, when relaxing of the stringent physical-distancing measures can begin. Yet our data-collection infrastructure is proving woefully inadequate.

(op-ed) To be effective, an extraordinary and co-ordinated national effort is required, with much more extensive testing and real-time standardized reporting of results, from local to provincial to federal agencies. These data on the tests will be much more powerful for managing the pandemic if they also include pre-existing diseases and risk factors such as smoking.

In Canada, the provinces have the bulk of the responsibility for delivering health care. They also each have their own approaches to data collection. As a result, it is extraordinarily difficult to assemble coherent national-level data. Further, data collections are typically siloed. But for sensible management of the pandemic, especially in the upcoming "relaxation phase", it will be critical to have not only real-time coherent data but also multivariate longitudinal data.

For example, there are widespread indications that susceptibility to more severe breathing problems is associated with various comorbidities. But there are insufficient data to understand better just which comorbidities are most important – is it the heart disease or diabetes themselves, or possibly the drugs patients have been taking to control those diseases that are the true risk factors. It is also important, for the more sophisticated kinds of modeling, to have better data on the distributions of times between events like admission to the emergency department, being put on a ventilator, and then recovering or dying. The need is for longitudinally linked microdata covering the gamut of patients' health care encounters, not siloed or aggregated data.

(op-ed) These kinds of data flows are obviously feasible with current computing and communication technologies. Indeed, they were feasible 20 years ago when the federal government created the Canada Health Infoway corporation and provided it with billions of dollars. One of its missions was to work with the provinces to develop interoperable real-time "outbreak detection" systems.

(op-ed) Had these systems been in place even as late as last year, Canada would not have wasted critical weeks and months in reacting to COVID-19. And if these systems were in place now, we could manage relaxing the current lockdown phase with ["smart quarantine"](#) and reap the major benefits of returning the economy to normalcy at a faster rate.

Health Infoway was created with the mandate from the outset to work with the provinces to create essentially a standardized pan-Canadian inter-operable electronic medical or electronic health record (EMR or EHR). However, the main mechanism they had to influence the provinces was a 50%, and in some cases a 75% cash subsidy for the software development. Further, given Infoway's judgment that their focus had to be on patient care, and that they had to be very careful not to raise concerns among the leadership of the medical profession, they continually refused to include in their work anything that made reference to "health system uses" of EMR or EHR data.

(op-ed) So why do we still not have this real-time standardized data-reporting capacity?

(op-ed) One blockage is the constitutional conflict over jurisdiction; the provinces claim almost exclusive jurisdiction over health care. The federal government also plays a substantial role, spending billions on health research and fiscal transfers to the provinces and regulating drugs and devices – on top of the billions given to Infoway – but it has [been too timid](#) to use all its powers much beyond ineffectual cajoling.

It is unclear why, at the very highest levels of the federal government, there has been such reticence to use the powers it does have under the constitution, including exclusive jurisdiction over “statistics”, to be more forceful in compelling the provinces to establish the requisite data systems. One possible opportunity in the tragedy of this pandemic is that the very real felt issues with current data flows will finally lead to more effective action.

(op-ed) Another blockage is fear of transparency. It has taken strong public pressure for governments to begin providing even limited epidemic-curve projections on which their policies are based.

Provincial ministers of health are understandably leery of providing the kinds of detailed data which, when carefully analyzed by others, can be used to produce embarrassing information. Further, there is a long history of strong, effective, but behind-the-scenes resistance to providing high quality data to others by the medical profession.

(op-ed) Of course, we need to ensure patients’ sensitive health data remain confidential except as needed in their circle of care. However, as the Council of Canadian Academies noted in its [2015 report](#), data custodians too often use privacy concerns to block access, stymieing major benefits of health research and, in the current emergency, support for both smart quarantine and much better modelling and projections.

In a phrase, Canada has long suffered from a “privacy chill”. This is complicated in the past few years by the very real and growing concerns about the sometimes awful behaviour of the huge private social media corporations. It is essential for NSOs and the bona fide academic research community to make a clear distinction between the public good benefits they can produce with highly sensitive and confidential patient data, and the private profit oriented motivations of the far more powerful social media corporations.

(op-ed) What can we do about these completely unacceptable blockages? There are several places to start.

(op-ed) The Canadian Medical Association (CMA) can offer strong leadership by supporting real-time interoperable data not only for their own interests and individual patient care, but also for broader health-system uses, not least for epidemic detection and management.

[The CMA released a study in February 2020](#) where they call for essentially a real-time inter-operable EMR system that works across all of Canada. However, most of the focus in this detailed study is on aspects of interest to doctors themselves such as billing and liability, with the balance on how this will improve patient care. There is basically nothing on the potential for “health system use” of the resulting data flows.

(op-ed) The private-sector vendors of electronic medical-record systems can immediately cease their profit-capturing data blockages and allow their software to interoperate in real-time with those of other vendors and government systems.

In a number of these systems, the only way to export a patient’s data is as a pdf file, which is completely useless from a statistical perspective. It is obviously in the self-interest of these software vendors to make it as difficult as possible for a provincial government or a doctor’s office to purchase and migrate to a competitor’s software. From its inception, Infoway was supposed to prevent this kind of vendor behaviour. Provinces have the power to force doctors to use only EMR software that does provide inter-operability, though in general they have not done so.

(op-ed) Provincial governments can agree quickly on more in-depth and uniform data standards for hospitals, labs and physicians so that, along with the federal government, they can quickly and unambiguously assemble these data, especially virus-testing results.

(op-ed) Privacy commissioners need to alleviate the excessive concerns over privacy around health data, to rise above responding only to complaints, and to make it clear that – especially in this emergency situation – they support essential data flows, provided that basic privacy protections are in place.

As far as I can tell, Canada's privacy commissioners have been totally silent, [unlike in New Zealand](#).

(op-ed) The Public Health Agency of Canada and the provinces can open up their data beyond a few pages to the energy and creativity of Canada's excellent university-based health researchers and modellers, and support the CIHR-funded [pan-Canadian network](#).

In many areas related to the pandemic, there is an explosion of innovation and creativity around the world, from the search for a vaccine to fabricating ventilators to devices for testing for antibodies. There is an analogous potential for epidemiological data analysis and modeling, but it is being stymied in Canada by the very poor quality and extremely limited data being made available.

(op-ed) In turn, Statistics Canada can expedite a virtual form of its Research Data Centres so that bona fide health researchers can access much higher-quality data with appropriate privacy protections.

Of course, much of the most powerful data for these kinds of analyses will be patient-level longitudinal microdata, whose confidentiality must be protected. Statistics Canada has a network of university-based Research Data Centres (RDCs) within which certified researchers with certified projects can access such data. But they have all been closed as part of the lock-down. Compared to the Netherlands NSO, Statistics Canada has been a real laggard in developing virtual RDC data access. In order to harness and improve dramatically the extent and quality of all kinds of pandemic-related statistical analysis, Statistics Canada could be moving much more aggressively to provide virtual data access, though perhaps in the first instance to a more limited group of bona-fide researchers.

(op-ed) The federal government must assert its leadership and authority, using its constitutional powers, to set critical national standards and enforce the collection, sharing and use of public-health data – and finally bring Canada into the 21st century of critical data infrastructure.

I'm hoping, in the climate of the current pandemic, when all sorts of unprecedented public policy initiatives that would be unthinkable in more normal times are being implemented, that the ideas sketched in this op-ed can be acted upon. However, these ideas have been around in Canada for decades, and have not been acted upon up to now. We need to start by understanding why, including the various blockages and vested interests. Assuring the data and analytical infrastructure for managing the pandemic, and over the longer term for maintaining ongoing pandemic preparedness, is a vital role for official statistics.



SUNDAY, APRIL 19 2020

FIVE WAYS A COVID-19 CONTACT-TRACING APP COULD MAKE THINGS WORSE

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[Originally published by Policy Options on April 15, 2020](#)

We are all participating in an unprecedented global experiment aimed at figuring out what is the best way to confront the COVID-19 pandemic. And according to the latest data, one well-established strategy seems to be working; the messaging around social distancing seems to be motivating most Canadians in just the right way: we're flattening the curve.

But, in theory we can do better, which is why governments around the world are considering additional curve-flattening strategies, including a new app that uses people's cell phone location data to trace COVID-19 cases. But even if the app generates perfect contact-tracing data, there are reasons to expect it might not produce the desired outcomes. In fact, it could conceivably make things worse.

This week we learned that the Quebec and Canadian governments are in discussions with Yoshua Bengio, a leading Canadian artificial intelligence (AI) researcher, to [launch an AI-powered COVID-19 contact-tracing app](#) within the week.

Although details are scant, [an article describing the app](#) states that it "works as a sort of COVID-19 roadmap," using Bluetooth to share each user's anonymized COVID-19 risk profile with other phones within 10 metres, "helping its users navigate around higher-risk people and locations."

The app, [based on voluntary participation](#), will be aware of the COVID-19 profiles, including infection status of those with whom you come in relatively close contact while out and about. Based on your daily movements, it could send you a notification suggesting more handwashing. It could suggest that you stay at home. It also informs users about "people or places that carry a higher risk of infection."

Bengio [told The Logic](#) that he hopes the app will "allow [us] to focus stronger confinement on the most at-risk people and make it easier for those less at risk to go back to activities outside, work, etc, until they cross paths with high-risk people (which would then tell them to stay home, etc)."

However, there are five problematic and reasonably foreseeable outcomes ([in addition to significant privacy concerns](#)) that Canadians and our governments should consider before unleashing an untested and unproven COVID-19 contact-tracing app on the public. These considerations should be weighed against the likely (not simply the hopeful) benefits that a contact-tracing app will deliver in the Canadian context. It's important to bear in mind that Canada is far different than the [other countries in which these apps have been deployed](#).

COVID-19 contact-tracing apps can reinforce existing social biases, thus stigmatizing locations and communities. Bengio is quick to point out that his app will use only anonymized data to avoid stigmatizing individuals. However, it will provide users with information about high-risk locations.

Even if it doesn't tag specific locations, it enables users to "triangulate" those locations based on notifications about their daily movements. In effect, this may lead to singling out individuals, or groups of individuals through an imperfect process of inference and elimination. We are seeing how this disease is [disproportionately affecting African American communities](#) south of the border. Would this app feed into existing biases by digitally tagging their communities and establishments as "dangerous"?

We are also hearing about how the disease has resulted in various forms of [discrimination towards Asian communities here in Canada](#). Would vague information about "infected" locations further fuel such biases?

There is a good chance that people will over-trust the app to keep them safe, which could inadvertently increase social contact. There is a well-documented psychological effect called "[automation bias](#)", according to which users treat a technology as much more authoritative than it actually is. Good design principles and good ethical principles suggest that we should err on the side of caution here and expect a large number of users to fall victim to automation bias when using this app. Those who do could misinterpret it as a sort of COVID-detector, capable of alerting them to the disease before and after they come into contact with it.

Unfortunately, automation bias could cause some users, those who are falsely confident that the app is looking out for them, to lower their guard when it comes to social-distancing practices. It would be a double whammy if this effect were unevenly distributed throughout society. For example, it could have a greater impact on users who have a harder time interpreting the app's design or have trouble using it.

Notifications could inadvertently overload certain aspects of the healthcare system. Without rigorous real-world testing, it's hard to know with certainty how people will interpret, and respond to, the notifications they get from this app.

If the surprising level of [confusion](#) that has erupted around public health messaging in the past weeks is any indicator, it is entirely possible that these app-based notifications could trigger increased confusion and stress among individuals who are unsure of what to make of them. That could translate into a sudden increase in unnecessary phone calls to telehealth or public health, or worse, unnecessary visits to healthcare facilities. At the very least, healthcare providers should be prepared for this kind of response.

A COVID-19 contact-tracing app could just do psychological harm to its users. Following the previous concern and recalling that this app is largely untested and unproven, the only effect it might have is to stress people out. That would be a shame, but more importantly an increase in general anxiety levels could trigger an increase in related harms such as [domestic violence](#), [depression](#) and [suicide](#).

COVID-19 app notifications could contribute to desensitizing users to those and other COVID-19 public health messaging. Many of us have experienced notification overload – the negative effect that [too many notifications](#) can have on our lives.

But [a recent study](#) in the Netherlands suggests notifications could actually dull the motivational link between the notification and the actions the notification is requesting you to perform. In other words, a notification to wash your hands might actually make it less likely that you'll wash your hands in a timely manner.

In addition, there is anecdotal evidence that the app the South Korean government is using seems to be [contributing to a desensitizing effect](#), causing people to tune out public health messaging. Again, these effects could actually contribute to an increase in infection rates.

It's important to acknowledge that although it seems the messaging around social distancing is working, we don't know exactly why it's working. It could be that people are motivated by concerns about getting the disease, or spreading the disease. They might also be motivated by the thought of doing their civic duty, of taking one for Team Canada. It could be some combination of all of those factors.

Without proper testing, we also don't know what effect contact-tracing apps will have on what might turn out to be a delicate balance of motivating factors. Of course, we need not abandon our search for good technological solutions to this pandemic.

But we should proceed responsibly. Just as it would be dangerous to rush an untested vaccine into production, unproven contact-tracing apps, well-intentioned as they may be, won't necessarily make things better. By requiring that app developers take these five considerations into account when designing the technology, a COVID-19 contact-tracing app will more likely work to our benefit.



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TUESDAY, APRIL 28 2020

THE SOCIAL VALUE OF MODELS AND BIG DATA

PROF. KELLY BRONSON, ASSISTANT PROFESSOR, FACULTY OF SOCIAL SCIENCES AND CORE MEMBER, ISSP AND PROF. ROBERT SMITH?, FULL PROFESSOR, FACULTY OF SCIENCE AND FACULTY AFFILIATE, ISSP, UOTTAWA

On April the 3rd, CBC news ran a story with the headline, "[COVID-19 could kill 3,000 to 15,000 people in Ontario, provincial modelling shows.](#)" What does this vastly wide range of future scenarios say about disease modelling? And what does the fact that this wide range made news say about the place of modelling in policy and culture?

A public health policy approach—one that deals in aggregate statistics and makes decisions in the interest of the population—is the substructure behind the development and use of the mathematical modelling we now see reported almost every day. This is a century-long approach, at least in the west, which most of us now take for granted - for example by vaccinating ourselves for influenza each year. But something is different today in our technical capacity to inform public health decisions: the omnipresence of data tracking.

The big novelty of our historical moment is that we live our lives shedding digitally collected data points (including every time we move about and click online). These data are brought together by various actors – from those trying to sell us toasters and jeans to mathematicians trying to predict disease spread and impact. Today, these data—so voluminous they are referred to as big data—are being drawn on and fed into mathematical models that help policymakers and individual people make some sense of mind-bogglingly complex and, frankly, frightening situations. Said differently, we can rely on big data and modelling for a sense of stability in times of uncertainty.

Models have two components. The first is mechanistic: describing how interactions occur between different actors, be they humans, animals, viruses, etc., or any combination thereof. The second is quantitative: determining the precision of those interactions – the transmission rate of a disease, the birth rate of a particular species, the rate of mutation of a drug-resistant virus and the like. Data informs both components: directly, in the second case, and indirectly in the first, where patterns must be discerned from the information at hand.

There is little doubt that data and models are useful for helping us compensate for the frailties of human cognitive biases and distortions. They also inform important policy decisions like mandating physical distancing. Part of the appeal of models is that they are the only thing we have that can predict the future. (Crystal balls don't exist!) Early modelling in the SARS, swine flu and MERS epidemics [turned out to be broadly accurate](#) when compared to the overall outcomes, suggesting that the tools we have are useful, despite the presence of unknown or incomplete data. Modelling, like science, is a precise process that often produces fuzzy outcomes; consequently, models must account for this degree of uncertainty and can compensate for lack of data by making multiple predictions simultaneously.

However, there are limitations to mathematical models. The essential idea behind modelling is to reduce complex information about the world to more easily digestible processes, from which decisions can be made. This is akin to making a map that includes key geographical features and ignores the rest through a process of selective ignorance: choosing what to include and what to ignore.

For example, models of COVID-19 are usually describing the average susceptible person, the average infected person, the average recovered person, and so on. By design, they usually ignore outliers (it is of course possible to include them if they are deemed important – a decision made by humans). During the SARS epidemic, for instance, superspreaders (individuals who spread the disease at a much higher rate than most people) were a crucial vector and were included in many models.

Outliers may be few, but their experiences matter. Public health advice that is grounded in modelling may not account for the inequitable vulnerability of Canadians. Not everyone is equally able to physically distance, for example. Farmers and food system workers across food supply chains are uniquely vulnerable if they are facing difficulty sourcing farm inputs, accessing markets or bringing in farm workers who typically arrive from other countries.

Another limitation of models relates to uncertainty in the data: the accuracy of models diminishes the longer the prediction period. Just as the weather forecast is accurate for tomorrow, less accurate for next week and entirely impossible to predict accurately for next year, models of chaotic systems lose predictability over time. But more data does not necessarily lead to better modelling outcomes. Famous statistician and modeller Nate Silver uses the aphorism that “big data creates bigger haystacks”. As we add more data points, it is often the case that we uncover many more statistically significant correlations or relationships among variables. Most of these correlations are spurious (not causally related) and therefore not necessarily informative. In fact, many of the correlations might be distracting and undermine our ability to find explanatory purchase.

Furthermore, relying on models alone to get us through a crisis runs the risk of substituting quantitative data for qualitative explanations. The latter often contain the insights needed to design models in the first place. In 2008, Chris Anderson, the then-editor of WIRED magazine, declared that [linguistics, sociology, psychology and the normal scientific process of hypothesis development and testing were all “dead”](#) because “we can track and measure why people do what they do with unprecedented fidelity. With enough data, the numbers speak for themselves.”

But Anderson is wrong. Big data and the mathematical models they feed deliver some explanations but they do not do well when it comes to describing the social context around data. We have made great strides in amassing quantitative data, but we still need qualitative theory to interpret and build mechanistic relationships that exist in these data but that may not be visible without a deeper understanding of behaviour.

Human decisions are not discrete data points; they are enmeshed in sequences and contexts and contradictions. For example, models have done very little to explain why Germany and other European countries have shown such dramatically different COVID-19 outcomes despite similar rates of infection. This requires more sociological lines of inquiry: what is it about the daily habits and culture of Germans, versus say Italians, that influences the spread and impact of the disease?

We have all made dramatic changes to our lives to prevent the worst case mathematical prediction (100,000 deaths in Ontario) but we have done so in large part because of an inability to care for this volume of sick given a lack of capacity in our healthcare and medical supply systems. COVID-19 therefore begs for careful analysis of fragilities contained in our health care and our global supply chains. Messy context (and the qualitative data that often speak to it), theory and history are needed for an approach through COVID-19 that is grounded in data and modelling yet delivers something useful and equitable.



THURSDAY, APRIL 30 2020

YOUR PERSONAL DATA IS BEING USED TO FIGHT COVID-19, BUT THE DATA MARKET NEEDS TRANSPARENCY

PROF. SUSAN AARONSON, ELLIOTT SCHOOL OF INTERNATIONAL AFFAIRS, GEORGE WASHINGTON UNIVERSITY AND PROF. PATRICK LEBLOND, ASSOCIATE PROFESSOR, GPSIA AND FACULTY AFFILIATE, ISSP, UOTTAWA

[Originally published by The Hill on April 20, 2020](#)

Personal data has become essential [both to mitigate COVID-19](#) and to rescue our slowing economy. For example, [Google](#) is using its large trove of personal data to track the effectiveness of social distancing. Firms are also using personal data to supply us [with goods and services](#) from toilet paper to in-home meetings. Meanwhile, policymakers are [using personal data to provide](#) individuals with stimulus checks and unemployment insurance. Governmental bodies are also teaming up with data-sector firms to [direct users to testing clinics](#), inform the [public about COVID-19 disinformation](#) or [feed workers on the frontlines](#).

To accomplish these tasks, government officials, corporate executives and netizens will have to share — and at times buy and sell — personal data. But the U.S. has no national law delineating how firms can acquire, use, and monetize personal data. While the US has some laws governing the use of certain types of data or data use in specific sectors, a lot of personal data falls through the cracks. Meanwhile, although they have made progress on draft legislation, Congress is unlikely to pass a privacy law in the near future. Finally, the Trump administration has not made a personal data protection law a priority.

In this policy vacuum, there is a path forward.

Securities regulators could use existing authority to mandate transparency of data markets and prod firms to protect user data.

Although many societal institutions rely on personal data, most personal data is held by firms that anonymize, utilize and sell such data to provide goods and services to customers, which include governments, other firms, and individuals. These firms use sophisticated analytics to create new products and services. Over time, these products and services generate even more data, which, in turn, further perpetuate these firms' market power.

However, the market for data is opaque. Because we know little about supply, demand, prices, buyers or sellers, this market can be inefficient and benefit some market actors over others.

While a few huge firms profit from the supply of personal data, data suppliers — you and me — don't know much about how our data is used and monetized. We can only hope that our data is adequately protected, but several studies have shown [that anonymized data can be de-anonymized](#) when researchers cross multiple data set as they need to do to solve the problems we confront today.

Some governments are trying to ensure that when data is utilized by public or private actors, personal data is protected. Building on its [General Data Protection Regulation](#), the European Commission [recently put forward a data strategy that sets clear](#) rules on access and re-use of data, protects personal data, accommodates the mixing of public, personal and proprietary data, and facilitates innovation by academic, business and governmental sectors.

U.S. financial regulators already have the tools to reform data markets.

The Securities and Exchange Commission (SEC) already requires that firms report on what they are doing to address [cyber-threats](#), noting that “cybersecurity is the responsibility of every market participant.” Inadequate personal data protection is also a threat to the health of firms, as we have seen with companies such as Target, Equitable, and Ashley Madison that did not do a good job of protecting protect large troves of personal data. Specifically, the SEC should ask all publicly traded companies to disclose how they acquire and utilize personal data and divulge which firms they sell these data to. Such mandated transparency would accomplish two things: make the market for data less opaque and incentivize firms to do more to protect personal data.

America can't mitigate the virus and revive the [economy without effectively using personal data](#). But COVID-19 provides us with an opportunity to rethink how we can protect the personal data of users while making the market for personal data more transparent, equitable and competitive.



TUESDAY, SEPTEMBER 15 2020

THE LACK OF COVID-19 RACE-BASED DATA IN CANADA PERPETUATES SYSTEMIC RACISM

STEPHANIE WIAFE, COMMUNICATIONS AND ENGAGEMENT OFFICER, HEALTHBRIDGE FOUNDATION OF CANADA, AND ROBERT SMITH?, FACULTY AFFILIATE, ISSP AND FULL PROFESSOR, DISEASE MODELLING, FACULTY OF SCIENCE, UOTTAWA

Anti-Black and anti-Indigenous racism is [pervasive in all aspects of our society](#), including the collection and application of health data. The recent, highly publicized, series of police-related deaths of Black and Indigenous individuals in North America are leading many to question why [Black and Indigenous Canadians suffer and die disproportionately from police brutality](#). We also need to ask why marginalized and racialized groups experience high rates of [poverty](#) and medical conditions closely linked to the social determinants of health such as [diabetes](#), [heart disease](#) and [cancer](#) and why they face barriers to [accessing and benefiting from public services](#).

Part of the answer to these and similar questions regarding racial disparities in Canada can be found by considering the roots of [anti-Black and anti-Indigenous racism](#) upon which our country was built, the subsequent racially inequitable systems and practices that were established and preserved to present day and the lack of reparations for racialized groups. While reparations can be financial (e.g., monetary restitutions for descendants of enslaved people), they can also take the form of societal recognition of past wrongs. Ultimately, reparations seek to make amends for previous damages and injustices to either a person or group of people. Reparations can also occur in health research and public health, through the practice of collecting and presenting race-based data and the subsequent evidence-informed decision-making process to address racial disparities in health.

To work towards diminishing and ultimately eliminating systemic racism from our health research and public health systems, as well as reducing racial disparities in health, we need to fully understand the scope and severity of these issues. One of the first steps in repairing the damages of systemic racism in the context of public health involves the collection and presentation of race-based data during health crises and the recognition of the underrepresentation of racialized groups in Canada, such as Black Canadians, [in health research](#). Race-based data allows decision-makers and the public to see how the incidence, prevalence and impacts of a given health condition or crisis differs between races, often revealing that racialized groups suffer and die disproportionately compared to their white counterparts, including because of historical wrongdoings that have created health disparities between races. Inferences from race-based data often point to systemic racism in society.

Despite the ability of race-based data to be a powerful tool in addressing systemic racism in health research and public health, collecting it is often met with hesitancy or refusal by public health decision-makers. For example, Ontario's Chief Medical Officer of Health, Dr. David Williams, [initially took the position](#) that the collection of race-based data in Ontario during the COVID-19 pandemic was not necessary because the main high-risk groups for COVID-19 [are the elderly, people with weakened immune systems and those with particular co-morbidities](#). He also added that, regardless of race, the Ontario government's consideration and prioritization of high-risk groups is equal. This initial reaction from a senior public health official was problematic, reflecting the refusal of many Canadians to accept that systemic racism exists in our society and the lack of understanding of the difference between [equity and equality](#).

While the Ontario government may claim to prioritize high-risk groups equally, as Dr. Williams stated, the effects of systemic racism in Canada (e.g., poverty, low-income and socio-economic status, inability to access and afford uninsured health care services) prevent racialized groups, such as Black and Indigenous Canadians, from benefiting from the government's prioritization in the same way that their white counterparts do. Eventually, in June, [the Ontario government proposed that all health units collect race-based data](#). This proposal came months after the province declared a state of emergency due to COVID-19 and only after several months of societal pressure to insist on collecting race-based data about the course of the pandemic. These data should have been collected from the beginning of the pandemic, especially after early evidence from the United States revealed [that a disproportionate number of COVID-19 cases and deaths were among Black Americans](#). These disparities can be partially explained [by a lack of access to testing and healthcare resources, precarious immigration status and pre-existing health conditions, such as higher rates of obesity and diabetes due to malnutrition and poverty](#). Likewise, Black and immigrant communities in Canada [are disproportionately affected by COVID-19](#). The initial refusal to collect — or the lack of consideration of — race-based data in health research and during health crises is a form of covert systematic racism that perpetuates health disparities in our society.

Other Canadian provinces, such as British Columbia, [do not collect race-based data](#). Federally, the Public Health Agency of Canada [only collates basic demographic data](#), such as age and gender, on people who test positive for COVID-19. This, despite the fact that the disease disproportionately affects Black communities in similar jurisdictions, like the US. Only [one of the thirteen CIHR institutes is devoted to Indigenous health](#); the collection of race-based data should be widespread across all research institutions, where applicable (and not compartmentalized). However, it is encouraging that [CIHR is funding numerous studies that investigate discrimination during the COVID-19 pandemic](#).

We strongly recommend that the federal government mandates the collection and dissemination of race-based data during this and future health crises. [The Canadian Institute for Health Research released proposed standards](#) for the collection of race-based data, which is a step in the right direction towards a concerted effort of involving racialized groups in health and medical research at all levels. While several organizations have expressed their support for racialized groups through [diversity and inclusion statements](#), they are too often performative, without making tangible changes to address racism in health research and public health. It is vital that racialized groups in Canada be recognized and considered in all health data. This is just one step in dismantling systemic racism in Canada, but it is an important one.

An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and various buildings. A large, semi-transparent white circle is overlaid on the left side of the image, partially obscuring the city view. The text is centered within this white area.

SCIENCE COMMUNICATION AND SCIENCE WRITING





WEDNESDAY, APRIL 1 2020

NOMEN EST OMEN: NAMING COVID-19 AND SOCIAL CONSEQUENCES

PROF. MARC SANER, FULL PROFESSOR AND CHAIR OF THE DEPARTMENT OF GEOGRAPHY,
FACULTY OF ARTS AND CORE MEMBER, ISSP, UOTTAWA

We all know the risk of crying wolf: if we do it too often then people will stop believing us. As a result, risk communicators must not cry wolf too often—but not too rarely either.

This is a probable reason for the reluctance of the WHO to declare a pandemic when it appeared clear to many of us that the new virus was both severe and spreading to far-away places. The WHO is certainly aware of the dual challenge of good medicine and good communication. Its Director-General, Dr. Ghebreyesus, put it so well at a conference in Munich in mid-February, “we’re not just fighting an epidemic; we’re fighting an infodemic.”

What fascinates me is a second naming challenge: deciding on what to call the novel virus. The act of naming is, on the one hand, a highly technical and scientific discipline. On the other hand, it is an early act of risk communication. *Nomen est omen* as the old Romans put it, **the name foretells the future**. And the ideas and words we choose may create important components of the physical reality we will have to inhabit later on.

Right now, the news media of the entire world are using a technically incorrect name. We call it by the illness that it causes, COVID-19, or Corona Virus Disease 2019, rather than by its correct name, SARS-CoV-2, Severe Acute Respiratory Syndrome Corona Virus 2.

The connotations of the two names are different. SARS-2 makes me think of SARS-1, a dangerous disease that struck us hard in Canada almost twenty years ago. COVID-19 sounds more like a reference to the common cold, or a beer even?

You will not be surprised that the misnomer is deliberate. In mid-February, leading journal *Science* published the article ‘A bit chaotic.’ *Christening of new coronavirus and its disease name create confusion*. The name of the virus was determined by the *International Committee on Taxonomy of Viruses* but the WHO refused to adopt it and explained in an email to *Science*: “From a risk communications perspective, using the name SARS can have unintended consequences in terms of creating unnecessary fear for some populations, especially in Asia which was worst affected by the SARS outbreak in 2003.”

A good omen requires good foresight that is an extremely rare and valuable competence. In hindsight, would it have been better for policy makers and news media to use SARS-2 instead of COVID-19? The stakes are of course high. The WHO now wants us to provide an aggressive response—while the President of the United States of America implies that we are violating the Hippocratic Oath by stating “we cannot let the cure be worse than the problem itself.”

Can risk communication still change at this point? The recent shift from ‘social distancing’ to ‘physical distancing’ suggests “yes.” That change in communication appears to be working based on Google Trends (see the chart below and note that this shift can be seen clearly in Canada but not yet in the USA). This type of clarification can make a real difference. The opportunity for naming the virus differently has probably well passed, but our risk communication can still be modulated in many other ways as we learn more—not to mention as we face an inevitable future pandemic, be that influenza, SARS or other.

When it’s over, let’s formally take stock of both the pandemic and the infodemic. There must be some valuable lessons learned in hindsight. And let me propose to you, to keep a daily journal. Dear Diary, let me tell you about SARS-CoV-2 & me.





SUNDAY, APRIL 12 2020

THE PANDEMIC THAT CHANGED SCIENCE COMMUNICATION

JACOB BERKOWITZ, AUTHOR, PERFORMER AND WRITER IN RESIDENCE, ISSP, UOTTAWA

The unprecedented COVID-19 pandemic is the world's most widespread and longest running case of shared public science and health communication. One lasting impact is that it will change science popularizing.

First some context. The pandemic hits at a time when the common framework that guides science communication is in flux. The phenomenal rise of social media, the decimation of traditional information gatekeepers, and the triumph of President Trump, who's turned "fact" into four-letter-word, put the nail in the coffin of the already [outworn deficit model](#) of science communication i.e., fill the human bucket with more facts and people will get it—whatever it is.

Instead, many practitioners point to cultural cognition as the new model for understanding and guiding science communication. [Cultural cognition](#) posits that cultural cognitive framework (story) trumps facts. This model is used to explain why such issues as belief in human-caused climate change skews along Republic-Democrat lines in the United States.

COVID-19 has dramatically highlighted that this cultural-level perspective is way too "10,000-foot" to help understand individual cognition and decision making based on science and health information. As we attempt to take lessons from the current crisis, we need to get much more granular in our psychosocial analysis to understand individual evidence-based decision making.

Here are five elements I've observed that need to be part of any model of science communication in action:

1. Address variation in risk perception and tolerance: The pandemic has highlighted that there is enormous individual variance in risk perception. I know from my experience as a wilderness tripping leader that I'm highly risk averse. I'm the one who'll empty my canoe before shooting the rapid. Early in the pandemic, I was surprised to realize I was feeling [dread risk](#). At the same time, I've spoken with friends who feel a minimum sense of risk, and who don't physically embody the experience as I do.

2. Immediate social context: How we interpret information and act on it is deeply shaped by our domestic social context. The pandemic has highlighted both our need for social connection, and similarly need for personal space and independence. COVID-19 has hit at time when for the first time in Canadian history one-person households are the most common form of household. About 14% of all Canadian adults live alone. In some cases, the forced isolation puts enormous psychological pressure on individuals to act when they otherwise might not, for example to go for the mail, to buy milk, to go out for a drive-through coffee. Conversely, negative home social environments, notably domestic violence, push individuals to make "best-case" choices, with possible COVID-19 transmission the lesser of two evils.

3. The Maslow Hierarchy Factors: When it comes to “logical” behaviour based on known information, individuals will act in response to pressing personal survival needs. For example, we cannot rely on self-reporting in an emergency. As a fictitious example, the 18-year-old in Morocco asked if she has any COVID-19 symptoms before boarding a flight back to Canada, and believing that she will be barred from boarding if she truthfully answers “yes”, believes it is in her best interest (i.e. logical) to say no. Similarly, the person who is alcohol dependent (a major issue among Canadians) and alone may well go to the liquor store regardless of their COVID-like symptoms.

4. Sexual desire: While not usually a core topic in most science and health communication, the forced isolation and separation of millions of teens and young adults in springtime has brought the topic to a head in terms of how facts are interpreted. New York public health officials tried to flatten this curve by promoting [COVID-aware safe sex](#). Social distancing is affected by the same ego projections that occur in young love – the way we see not the person but our desired concept of them. As a result, “two metres” isn’t a mathematical absolute, but becomes a qualitative, malleable concept reframed by more pressing needs.

5. Attitude to authority: As much previous work by ISSP colleagues has documented in relation to [Canadian energy policy](#), our attitudes to authority, particularly trust in authority, plays a big role in how information is filtered. For example, do you readily trust in the value of collective, government-led action? In Italy, where there’s a long-standing distrust of government officials, health officials addressed this issue directly, pleading with Italians to trust and obey official edicts related to COVID-19. What we’re seeing is that these issues of trust and authority are highly complex. In the United States, socialized capitalism is currently widely celebrated, but not public health care. One area I find particularly interesting is the extent to which we trust that a democratic government’s response will be better than a totalitarian one in dealing “truthfully” with the pandemic. There’s been much [criticism of the Chinese government’s](#) repressive response to the pandemic, yet the [Trump administration’s response](#) has also been grounded in lies, obfuscation, denial, and deflection, all of which have contributed to the U.S. being the pandemic’s current epicentre.

As we continue to reflect on the psychosocial aspects of our pandemic experience, and make sense of it, other aspects will emerge as playing key roles in how we share and interpret information. All of this will be important fodder for guiding a pandemic-informed refresh in science and health communication.



MONDAY, JULY 27 2020

THIS IS THE MOST IMPORTANT SCIENCE LESSON OF OUR LIVES

JACOB BERKOWITZ, AUTHOR, PERFORMER AND WRITER IN RESIDENCE, ISSP, UOTTAWA

Originally published by The Globe and Mail on July 27, 2020

As parents worry about the school lessons kids have missed because of the pandemic, there's one dinner conversation about COVID-19 that can make-up for any lost science lessons. Talk about all the uncertainty and doubt, from changing rules about wearing masks to efforts to create a vaccine. Explain that what we're living through is science in action.

Because, if your kids come out of this pandemic knowing in their bones that science is as much about what we currently don't know, as what we do, it will be the most important science lesson of their lives.

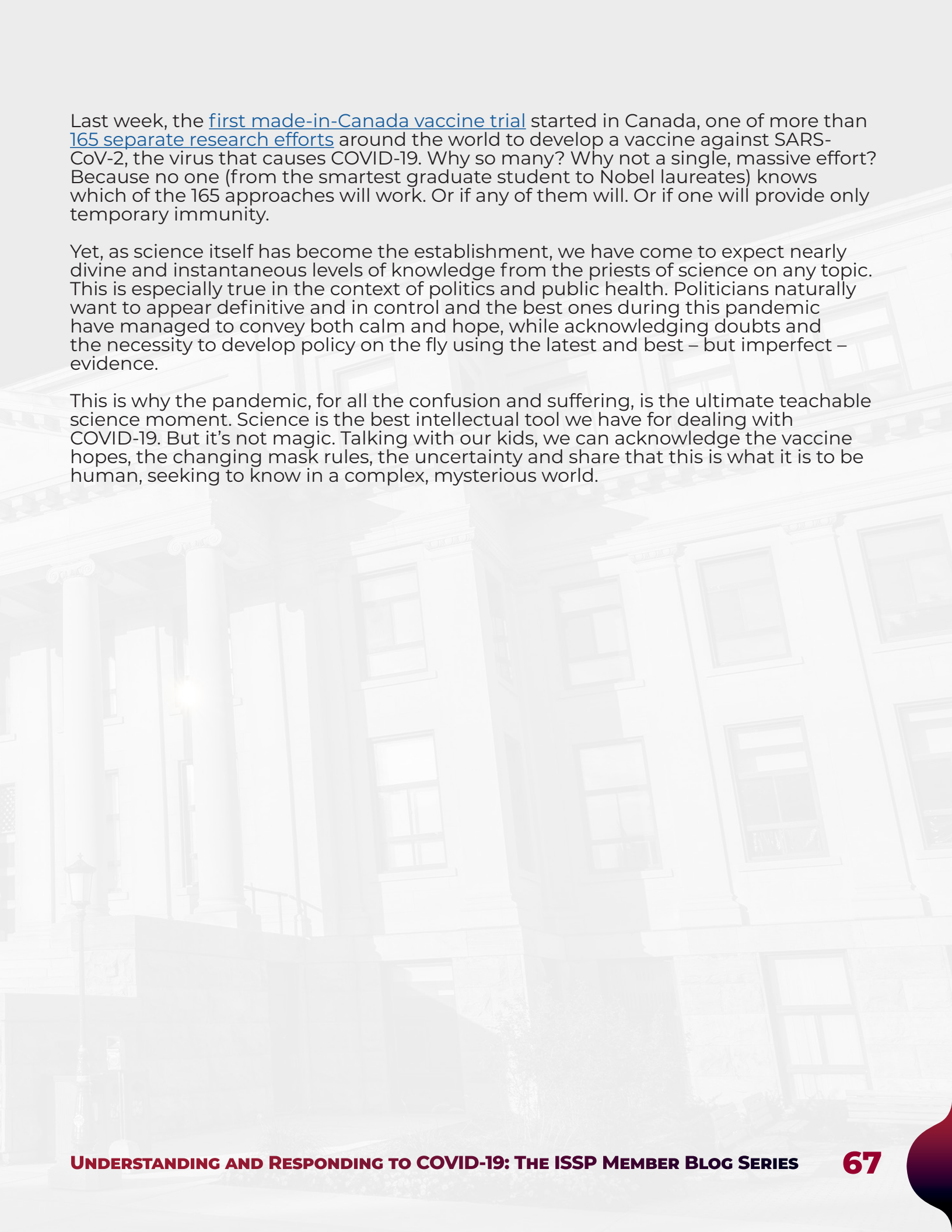
If this feels counterintuitive, it's because most of us leave high school, and any study of science, with a fundamentally skewed vision of science's nature. We tend to think of science as a noun, as facts in textbooks, but not also as a verb, as the doing of research. This is a crucial difference.

The word "science" comes from a Latin root for "to know." Yet on the way to knowing, science is ultimately about the right, responsibility and challenge of living with doubt. As Albert Einstein quipped, "If we knew what it was we were doing, it would not be called research."

The reason we call the period in Europe around 1600 the Scientific Revolution is exactly because it was an intellectual rebellion against the primacy of received knowledge from the church or the ancient Greek and Roman philosophers such as Aristotle. The first scientists, such as Galileo, were fundamentally heretics (from the Greek, "to choose") because they asserted that the nature of reality could be perceived by individuals in the present through careful experimentation and observation.

But what gives science its power as a way of knowing is that it's collective knowing – it's the facts that we can collectively agree on through repeated experimentation and observation. It's why Britain's Royal Society (the world's oldest science club) has the [motto](#) *Nullius in verba*, Latin for "take nobody's word for it." This isn't about being bull-headed and arrogant, it's because scientists know that while the truth is out there, it is more often than not incredibly difficult to figure out.

No more so than when it comes to understanding the human body – we can't stop time, take a person apart, see how all the bits work and then put a living body back together again. So we do our best with medicine, whose track record, the editor of the distinguished British Medical Journal [wrote](#) in 2003, "is mostly a history of ineffective and often dangerous treatments."



Last week, the [first made-in-Canada vaccine trial](#) started in Canada, one of more than [165 separate research efforts](#) around the world to develop a vaccine against SARS-CoV-2, the virus that causes COVID-19. Why so many? Why not a single, massive effort? Because no one (from the smartest graduate student to Nobel laureates) knows which of the 165 approaches will work. Or if any of them will. Or if one will provide only temporary immunity.

Yet, as science itself has become the establishment, we have come to expect nearly divine and instantaneous levels of knowledge from the priests of science on any topic. This is especially true in the context of politics and public health. Politicians naturally want to appear definitive and in control and the best ones during this pandemic have managed to convey both calm and hope, while acknowledging doubts and the necessity to develop policy on the fly using the latest and best – but imperfect – evidence.

This is why the pandemic, for all the confusion and suffering, is the ultimate teachable science moment. Science is the best intellectual tool we have for dealing with COVID-19. But it's not magic. Talking with our kids, we can acknowledge the vaccine hopes, the changing mask rules, the uncertainty and share that this is what it is to be human, seeking to know in a complex, mysterious world.



FRIDAY, MAY 29 2020

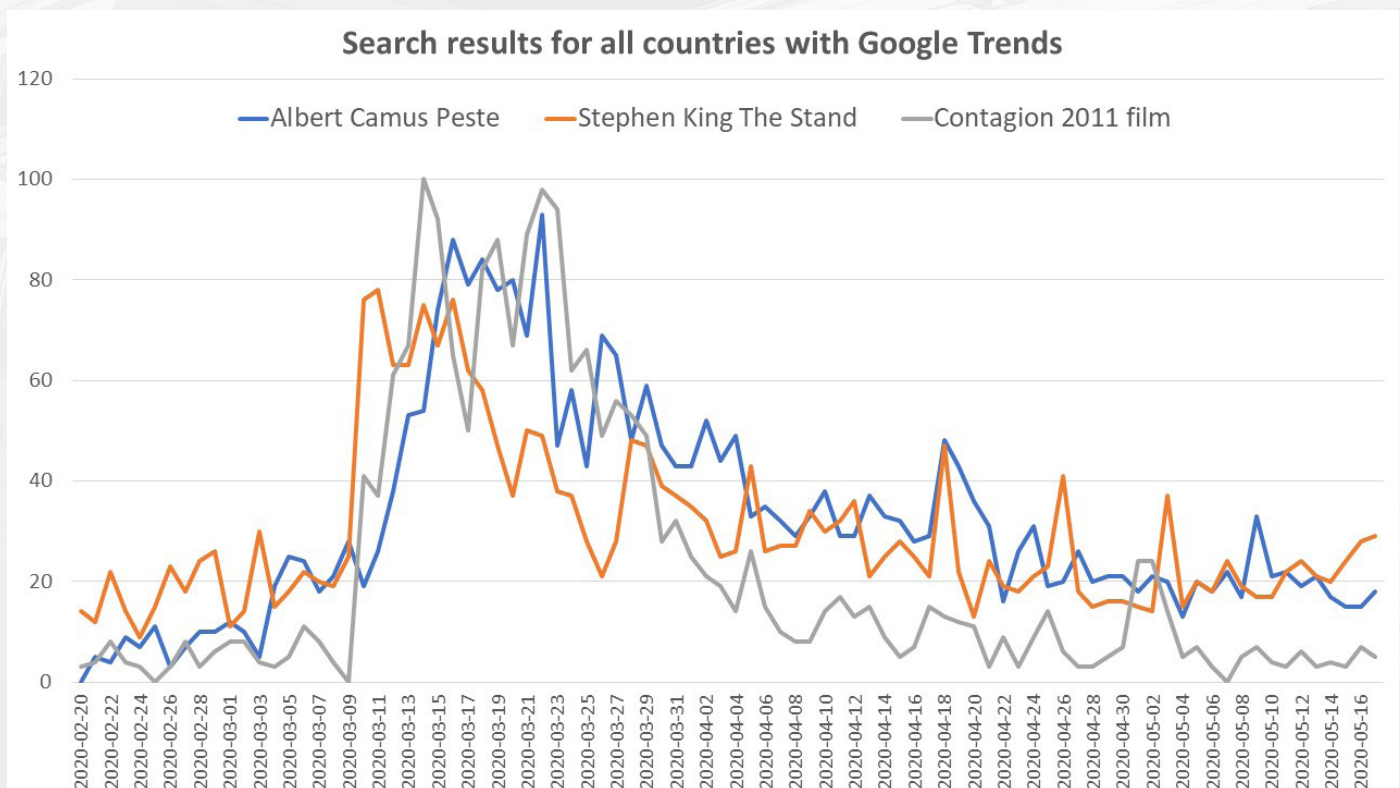
USING SCIENCE FICTION BEFORE IT STOPS BEING SCIENCE FICTION

JEAN-LOUIS TRUDEL, AUTHOR, HISTORIAN AND WRITER IN RESIDENCE, ISSP, UOTTAWA

Science fiction is one of the means of representation of science in modern societies, in a way that is distinct from the representational modes of teaching, popularization, institutionalization, and politics. To some extent, it even reaches more people over longer periods of time than teaching or even popularization. To the depiction of science at work, science fiction adds the examination of (as yet) unrealized possibilities.

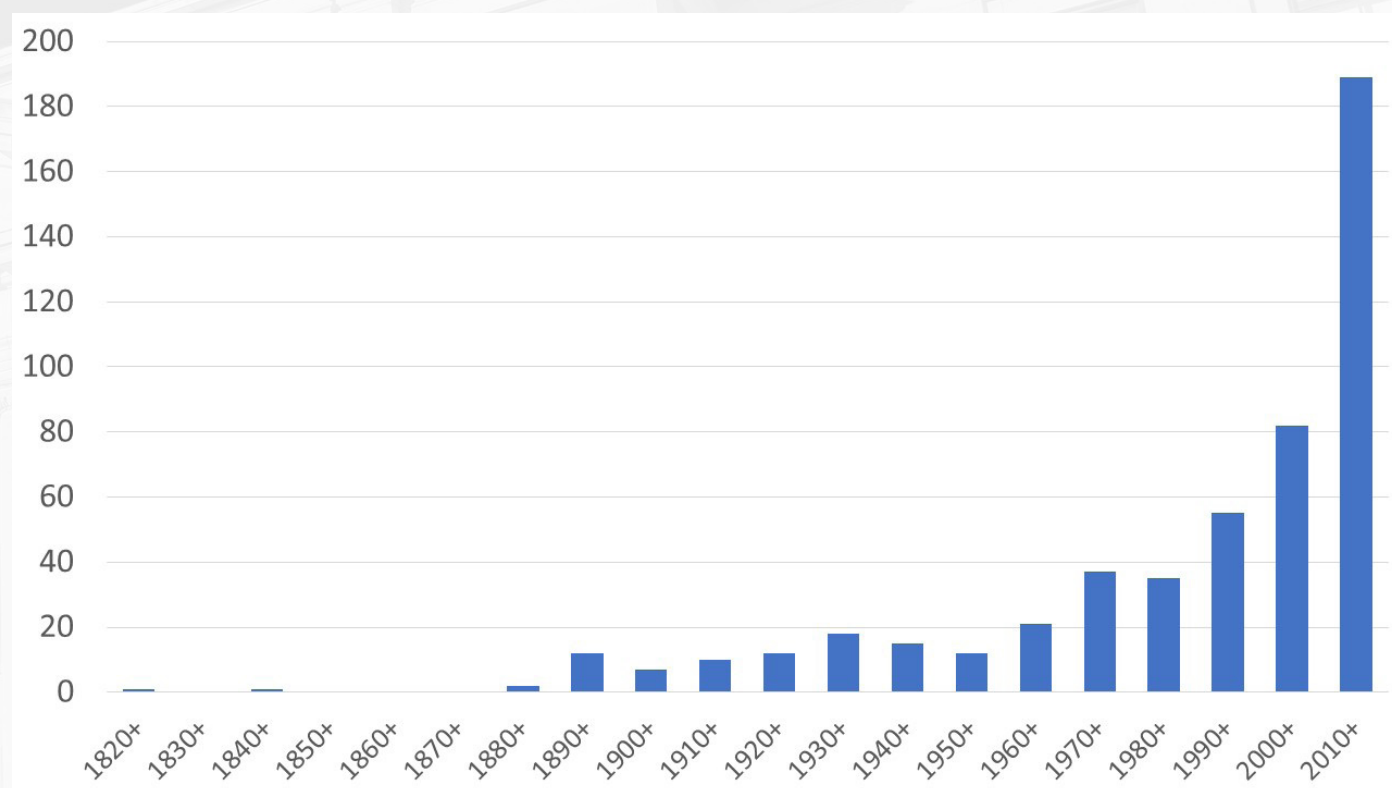
Since the beginning of the novel coronavirus pandemic, the sales of Albert Camus's *La Peste* and downloads of movies like Steven Soderbergh's *Contagion* (2011) have skyrocketed. Similarly, historians of public health and the Spanish Flu epidemic have been solicited for their views, and have never been so avidly read.

The increase in downloads and sales was especially notable when the lockdowns began in March. As the data from Google Trends show below, interest declined after the first few weeks. I'm therefore inclined to think that works of imagination comforted many people looking to these stories to gain their bearings.



[According to Esther Jones from Clark University, science fiction may foster resilience in young readers.](#) The figure above suggests that many adults as well tried to use imaginative fiction to get through the stress of an unforeseen situation.

[As I showed in another blog post,](#) science fiction has been exploring the impact of epidemics for over a century. To illustrate this, I compiled some of the fiction that has dealt with infectious diseases since Mary Shelley's novel *The Last Man* (1826), using mainly the online Encyclopedia of Science Fiction. The result, in the figure below, shows the number of such works (novels, short stories, games, television series, movies, comics, etc.) by decade. Its most striking feature is the exponential increase during the last decade. The whole science fiction genre seems to have been warning us.



This breathtaking increase may be explained, in part, by a change in the kind of stories preferred both by authors and by readers. Formerly, science fiction had often appealed to catastrophes that resulted either from alien invasion or from nuclear war. As both have lost their lustre, atomic warfare has been replaced by pandemics, and the old-time mutants by the infected. Often, the infected person in such stories becomes a monstrous creature, such as a zombie or vampire. It's worth noting how zombie stories do not make the infected into mere victims requiring pity or care: they are a fearful menace to others. We may wonder whether the recent proliferation of epidemic themes playing on our fears actually assisted governments that incited their citizens to stay home by insisting on the dangers of Covid-19.

Be that as it may, the authors choosing to stage pandemics were surely responding to the growing visibility of quite real epidemics over the last two or three decades, from AIDS to Zika, along with SARS, avian and swine flu, and Ebola. It's also likely that many writers were paying attention to the many calls to arms about coming plagues since the century's beginning.

Science fiction authors do not claim the gift of prophecy, but they know that what is incalculable is not impossible. Pandemics can be foreseen since they have happened before and since nothing prevents them from recurring. However, they cannot be predicted precisely. The risk, however, had been escalating steadily, if only as a result of human encroachment on wilderness.

The first wave is nearly past. In some cases, it swept by in a few weeks and the fall was swift. In others, it turned into a longer, shallower, more nerve-racking swell that seemed to go on forever. In a number of countries, it may still be climbing or cresting.

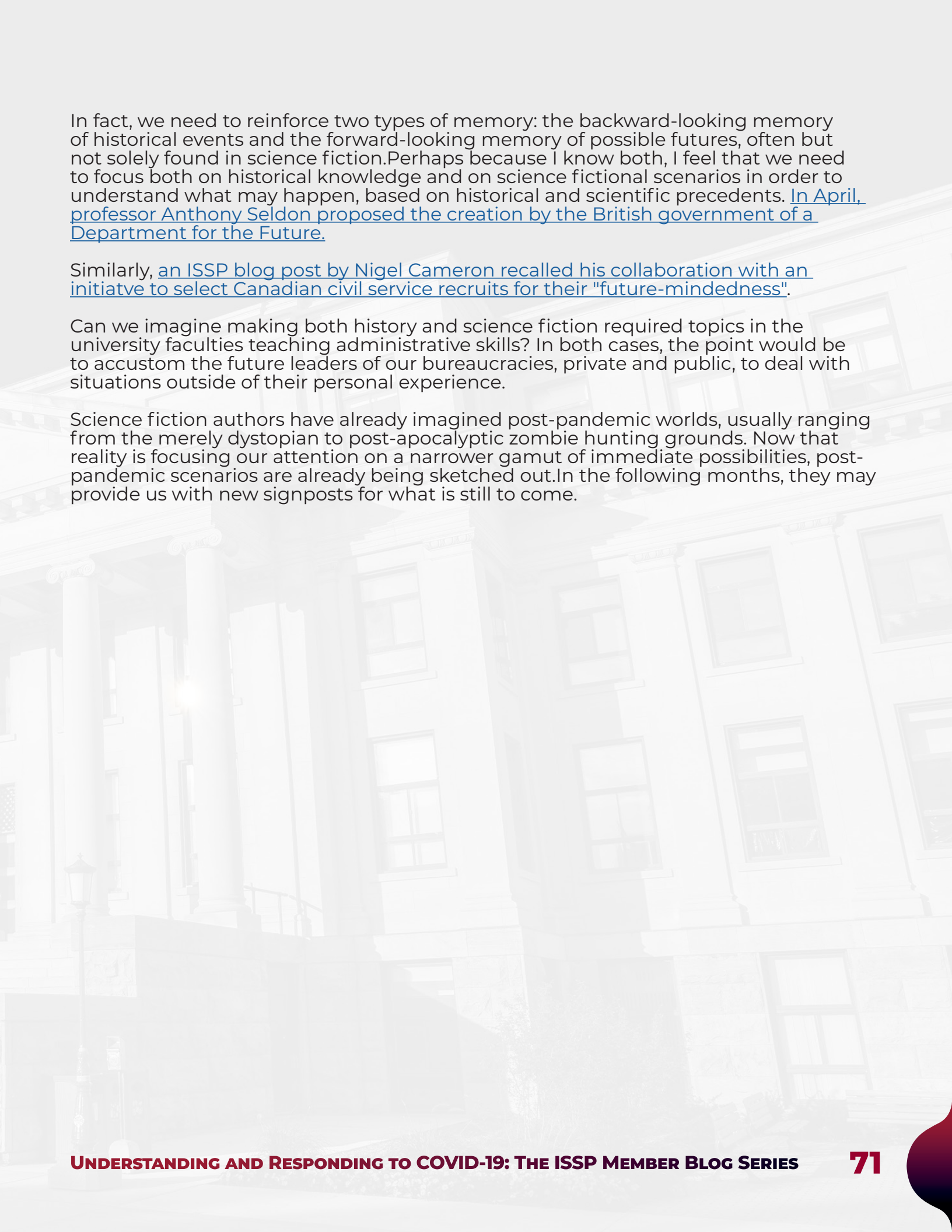
But the time for drawing lessons is at hand. There will be reviews and analysis, perhaps even inquiries. One question that will likely be raised again and again is that of the resilience of our health systems, governments, and economies. Was there enough surge capacity in hospitals, back-up personnel for care and nursing homes, appropriate stockpiles of vital equipment and drugs for emergencies? Canada, like many other countries, appears to have been caught short by a contingency that had been abundantly discussed for years, if only because pandemics had been faced or feared several times since the turn of the century.

Better management procedures, improved government structures, and renewed funding may do much to improve systemic resilience. But we may also want to start thinking of human resilience to improve our willingness to envision the worst.

Artists articulate our darkest fears to let us exorcize them. Science fiction can foster psychological resilience, to help individuals cope with the unexpected. It may also help institutions and societies to face even the grimmest scenarios.

Science fictional works can defuse the initial shock of the new by offering a preliminary form of familiarity with a phenomenon we have never experienced in person. The avoidance of irrational panic may result in more intelligent forms of compliance. What is often neglected in analyses of top-down communication is how individual citizens will adopt, interpret, and broadcast their own versions of the best practices endorsed by government authorities. We need to consider not only what messages will be fashioned, but also how they will be received.

In *Upheaval* (2019), Jared Diamond argues that we can learn from history when we look at the right situations, but history alone is not enough. [First, we need to remember what we know, as Pietro Greco recently lamented.](#)



In fact, we need to reinforce two types of memory: the backward-looking memory of historical events and the forward-looking memory of possible futures, often but not solely found in science fiction. Perhaps because I know both, I feel that we need to focus both on historical knowledge and on science fictional scenarios in order to understand what may happen, based on historical and scientific precedents. [In April, professor Anthony Seldon proposed the creation by the British government of a Department for the Future.](#)

Similarly, [an ISSP blog post by Nigel Cameron recalled his collaboration with an initiative to select Canadian civil service recruits for their "future-mindedness".](#)

Can we imagine making both history and science fiction required topics in the university faculties teaching administrative skills? In both cases, the point would be to accustom the future leaders of our bureaucracies, private and public, to deal with situations outside of their personal experience.

Science fiction authors have already imagined post-pandemic worlds, usually ranging from the merely dystopian to post-apocalyptic zombie hunting grounds. Now that reality is focusing our attention on a narrower gamut of immediate possibilities, post-pandemic scenarios are already being sketched out. In the following months, they may provide us with new signposts for what is still to come.

An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and a tall building in the background. The image is faded and serves as a background for the text.

SECTORAL IMPACTS: AVIATION, ENERGY/CLIMATE, HUMAN RIGHTS, RELIGION





TUESDAY, APRIL 7 2020

THE CHALLENGE OF COVID-19 TO AVIATION SECURITY

PROF. MARC SALTER, FULL PROFESSOR, FACULTY OF SOCIAL SCIENCES AND CORE MEMBER, ISSP, UOTTAWA

[Originally published by The Hill Times on April 6, 2020](#)

Viruses fly all the time, but rarely have they been as deadly as COVID-19, which will change aviation security as much as 9/11. The novel Coronavirus is changing our appreciation of risk; it has flipped the question of the global aviation sector from surge capacity to viability; and it demonstrates the levels of cultural shift and honest public discussion needed in Canada. The government also needs to pay special attention to the North, a vulnerable population that has been dependent on air routes for medical travel, food, and other essentials.

The COVID-19 generation is now learning what security professionals have known for years: people are bad risk imaginers. Since the Hindenburg, flying has been much safer and more secure than driving or other modes of public transport: accidents were fewer, and security incidents were even rarer. However, spectacular failures of the system—like 9/11, Lockerbie, and Air India—made aviation security an especially sensitive object of public attention. The frequency or likelihood of large-scale events was impossible to predict, and because the enemy was always learning and adapting difficult to mitigate in the complex space of the airport without hampering necessary global travel. Security professionals, carriers, operators, and regulators did their best to stay on top of intelligence with new technologies, standards and procedure, but the primary way of reacting has been public education: “see something, say something.”

Now, with COVID-19, another low-probability high-impact event, the public will have to be re-educated about a new vector of unimaginable, undetectable risk: the virus. Just as the public had to be taught to limit and isolate liquids, manage their carry-on and hold-baggage, and be ready to divest, the biosecurity regime will require new practices, new technologies, and new security cultures that have to be communicated to the public in authoritative and clear ways. Enrolling the public in a new security regime will be the key to regaining trust in the sector and reactivating demand, that is depending on how the aviation sector holds up.

In the past five years, one of the primary questions in the aviation security field has been, ‘How will we cope with all this new volume?’ A general growth in civil aviation was accompanied by the rapid expansion of a new sector: low-cost airlines, that extended the global network and intensified air traffic density along new routes; China, we were told, was building a new international airport every six months; Heathrow needed a third runway, etc., all of which are supply-side problems. But, quarantines are changing all that, because the closing of borders, and the imposition of isolation policies choke demand, and we can only speculate as to what the aviation sector will look like in six months. How much will government be willing to subsidize air carriers and airports—and all the attendant retail and air-side businesses like caterers, fuel farms, mechanics, and freight-forwarders, and for how long? To survive

the coming recession and the threat to the aviation sector, governments, airlines and operators are going to restructure to incentivize demand as well as rationalize cost.

What counts as “public security” is radically changing to include a renewed focus on public health infrastructure and how the global economy relates to international mobility. Facing threats that are the result of the complexity and interconnectedness of contemporary life, just-in-time production, trans-continental food production, global capital markets, all depend on international mobility—and often air transport. Try to imagine how many hands touched those kiwis on their journey from Italy to your local super-market. Maybe don't. We have undergone these changes before—even within this generation. However, while low probability, high-impact events like 9/11, can be traced to political adversaries, we are seeing more non-human threats that require a different kind of intelligence, surveillance, and security apparatus.

The January 1998 ice storm across Ontario and Quebec led to an unprecedented peace-time military deployment in Canada and the need to rebuild large swaths of the electrical grid infrastructure. Threats to public safety cannot always be traced to human error or bad intention, which is why the sector has adopted an “all hazards approach” to focus on resilience, regardless of the inciting crisis. The ice storm reinforced the 72-hour rule (every citizen needs to be prepared for three days of isolation in a crisis).

The attacks of 9/11 elicited a new public campaign—“see something, say something.” The coronavirus is going to require the same quotidian change in everyday security culture—everywhere from the supermarket, to the airport. Here is the opportunity to roll-out touchless technologies for identity verification and security clearance, get serious about wave scanners and other “at-a distance” detectors, and rethink queue management and thus space requirements. It was always tricky to quantify the efficiency of security screening by throughput rates, but those standards are going to need to be rethought spatially, if the new grocery store protocol becomes our standard for social distancing.

What is true about our need for a robust security response across Canada is doubly true for Canada's north. For example, Nunavut has a population of approximately 16,000 people in 12 communities. Outside of an annual sea lift for bulk goods in late-July or August, air is the only way to transport fresh food to Canada's Arctic communities— and estimates are that 70-80 per cent of households are food insecure in normal times. And, because of the lack of hospital capacity (only 35 beds in Iqaluit's Qikiqtani General Hospital), medical travel to southern Canada is an essential mode to provide basic medical and dental care. In addition to thinking about how to support major international airports and national airlines weather this storm, the government must also engage with its northern partners and make extraordinary efforts to ensure that the North stays healthy. Northern communities have been finding innovative ways to thrive for hundreds of years, but this presents a challenge when air travel is both a vector of infection and the necessary support for healthy communities.



TUESDAY, MAY 5 2020

WILL COVID-19 UNITE OR DIVIDE CANADA OVER ITS ENERGY AND CLIMATE FUTURE?

PROF. MONICA GATTINGER, DIRECTOR AND BRENDAN FRANK, INTERIM RESEARCH DIRECTOR, ISSP, UOTTAWA

[Originally published by Policy Options on May 1, 2020](#)

It's no secret that debates over Canada's energy and climate future are divisive and contentious — if not outright polarized. There is no common vision for the country's energy future in an age of climate change.

Could COVID-19 change that? Quite possibly. But whether the pandemic will further divide the country or bring it together is a very open question. Studies by [Positive Energy](#), an energy research program at the University of Ottawa, help to shed light on the possible answers.

The COVID-19 shock and the federal response

For oil and gas producers, the global pandemic has brought an acute shock that may permanently transform the industry. There is no V-shaped or L-shaped precedent to rely on here. The world is using about 30 percent less oil than it was this time last year due to the shutdown of nonessential services, a demobilized workforce, and a sharp drop in travel. The supply war between Saudi Arabia and Russia placed additional downward pressure on prices. Production cutbacks by OPEC+ have helped to resolve the Saudi-Russia spat, but oil prices remain deeply depressed.

A barrel of West Texas Intermediate, the North American price marker, fell from \$60 at the beginning of January to less than \$15 at the end of April. Western Canada Select, the price marker for a barrel from the oil sands, has plunged from about \$40 to less than \$5. Both WTI and WCS dipped below zero recently, meaning producers had to pay buyers to take oil off their hands. The price of natural gas, often co-produced with oil, is also down.

While consumers marvel at bargain prices at the pumps, the situation for producers is grim. Few if any can make money at these prices — and certainly not at negative prices. Producers are rapidly shutting in wells, storage facilities are fast approaching capacity and refineries are having an increasingly difficult time sustaining operations. Without intervention, these market conditions will drive many firms into bankruptcy in the coming weeks and months.

On March 19, [news broke](#) of an imminent federal relief package for the oil and gas sector worth an estimated \$15 billion. This would be in addition to the Canada Emergency Response Benefit for laid-off workers and the Canada Emergency Wage Subsidy to help employers keep workers on the payroll.

On March 25, federal Finance Minister Bill Morneau said the relief package would be announced in “[hours, potentially days](#).” Weeks later, the plan had yet to materialize. On April 17, a few details emerged. [The government announced](#) support measures for a range of economic sectors, including oil and gas: \$1.7 billion to clean up thousands of orphaned and inactive wells across BC, Alberta and Saskatchewan; a \$750-million emissions reduction fund; and credit relief for medium-sized businesses.

There are likely economic and political reasons for the delay. Economically, the issues are complex and fast-moving, and negotiations with the US and other producers [were ongoing](#). Politically, support for the oil and gas sector in Canada is contentious.

While the federal government was developing relief measures, high-profile voices weighed in. [Oil and gas leaders, academics, environmental NGOs and faith groups](#) inked open letters advocating what the plan should — and should not — include, along with what conditions should be attached to financial support. Proposals varied widely: liquidity measures, like purchasing accounts receivable; direct investments in renewable energy; job retraining; targeted funds for the cleanup of orphaned wells.

Different visions of Canada’s energy and climate future — notably the place of oil and gas in that future — underpin the proposals. They reflect key dividing lines in debates that existed long before COVID-19.

Two views of energy transition

Positive Energy’s research offers insights into how things may unfold in the months to come. [Our latest study](#) suggests that energy and environmental leaders signing these open letters don’t just disagree over the substance of the relief package. They occupy two very distinct “realities” that differ over the pace, scale and nature of energy transition in Canada.

The study’s lead author, Marisa Beck, interviewed over 40 leaders from the energy and environmental communities, asking them how they understand and interpret the term “transition.” The findings suggest that leaders hold fundamentally different views about what transition means for Canada. We call them “realities” because those in both camps see themselves as “realists” when it comes to transition. No participant fit perfectly into either category, but all of them leaned heavily toward one or the other.

“Reality I” sees transition as a measured, gradual process driven primarily by market forces but supported by policy that does not impose excessive costs on people and business.

“Reality II” sees transition as an urgent process anchored in the idea that the world is facing a climate crisis. In this view, transition is driven primarily by strong, rapid policy interventions.

The future role of oil is a key distinction between the two realities. Reality I sees oil as an ongoing part of a diversified low-emissions energy portfolio both domestically and globally, with emissions reduced by carbon capture, energy efficiency improvements and other technological advances. Reality II views the urgent phase-out of oil as a necessary step to avert catastrophic climate change and to create a net-zero economy.

Conversations over the nature and scope of support for oil producers are therefore likely to be divisive, even polarizing. In the months to come, these realities will compete for attention and resources as governments assemble aid packages and shift their focus to long-term recovery. Political leaders will be put to the test navigating these “elite debates” over energy and climate.

But Positive Energy’s [recent survey work](#) suggests that the Canadian public is not necessarily as divided on the issues as some leaders in the energy and environmental communities.

Canadians’ opinions do appear polarized along partisan lines. As federal and provincial parties stake out positions on the relief package and future recovery measures, the rhetoric of political leaders could drive the two realities — and Canadians — further apart.

But there are opportunities to build bridges. Our research shows strong agreement among Canadians and energy and environmental leaders that climate change is real, that Canada is in the midst of some sort of transition and that the country should distinguish between the place of oil and gas in its domestic economy versus its role in the export economy.

Our work also suggests that Canadians’ opinions on the issues may not be as polarized along regional and generational lines as commonly believed. There are even areas of [emerging consensus](#) on the importance of oil and gas development, on the need for climate action and on who should lead decision-making on energy and environmental issues.

A path forward

In the wake of the government’s April 17 announcement, [industry leaders](#) and the premiers of [Alberta](#) and [Saskatchewan](#) stated that much more action will be required. It is not yet clear whether this is all Ottawa will provide, or whether further measures are in the offing.

Our research suggests four essential insights for those who want to chart a positive path forward.

First, political, social and economic leaders would do well to recognize that high-profile voices in these debates (including their own) can occupy fundamentally different realities on energy and climate. Understanding and respecting different world views is pivotal. Too often leaders characterize those with different views as intellectually or morally deficient. This does not help to foster productive debate — or to build support for potentially divisive measures like financial support for oil and gas.

Second, language matters. Our research reveals that the terminology used to talk about energy and climate can bring people to the table or drive them further into these divergent realities. Many see the term “transition,” for example, as vague, politicized and non-inclusive of all players in the energy sector, notably those in oil and gas. Some see it as polarizing and “fuel deterministic,” prejudging which fuels can or cannot be part of Canada’s future energy mix. Using terms like “low emissions” or “emissions reductions” in the development, framing and communication of policies during and after the COVID-19 crisis could be a more inclusive approach.

Third, leaders should avoid the temptation to polarize debates along partisan lines. Partisanship can have the unfortunate effect of encouraging people to dig in their heels, to the point where everyone loses: the country comes out poorer on both the energy and climate fronts. Instead, identify ways and forums to enable respectful debate and actions that reduce or mitigate partisanship. Reaching across partisan divides — notably between the federal and provincial governments — could be an important step. We have seen that such outreach is possible. The pandemic has offered politicians the opportunity to prioritize collaboration over partisanship, and many have seized it. In addition, extending the conversation beyond the political arena, including to leaders outside the energy and environmental communities (for instance, to labour, business and university and college leaders), could also be helpful.

Finally, it is crucial to understand and build on areas of agreement. Our research with energy and environmental leaders and the general public underscores that people overwhelmingly agree that human-caused climate change is happening and that further action is required to address it. Our public opinion research also shows that Canadians strongly support oil and gas development, but they want to see it done in an environmentally and socially responsible way. Policies for energy and climate — including plans for the short- and long-term economic effects of COVID-19 — would do well to demonstrate the link between economic development and environmental performance. Many companies are already moving in this direction by developing environmental, social and governance indicators.

Energy and environmental leaders and the public also agree on the future of workers: they want to ensure that employees affected by policy or market changes related to climate action are taken care of. They recognize that reducing emissions involves costs and benefits, and they want to attend to both. They also recognize that costs and benefits may differ in the domestic and export economies. Drawing a distinction between energy at home and energy abroad may offer a helpful way to frame things.

As Canada moves from crisis management to long-term recovery, debates about the country's energy and climate future will no doubt grow in importance and volume. Whether COVID-19 will build bridges — not generate divisions — among Canadians remains to be seen.



WEDNESDAY, JULY 29 2020

GREEN RECOVERY COULD BE POLARIZING ISSUE AMONG CANADIANS

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[Originally published by The Hill Times on July 27, 2020](#)

For six months, the SARS-CoV-2 pandemic has superseded all other public policy priorities. Governments placed their economies in a state of suspended animation, buttressed their health care systems, and pushed trillions out the door to help citizens weather the storm. But other policy problems are not going away. Indeed, COVID-19 has exposed and deepened many cracks in the system. As countries reopen, governments and multilateral institutions are grappling with what comes next, and how to reverse [what the IMF estimates](#) will be a five per cent contraction of the global economy in 2020.

In Canada and elsewhere, the question of how to weave energy and climate priorities into recovery is a growing part of the conversation. For years, the dominant narrative has been that economic health and environmental health are a zero-sum game. Public opinion surveys suggest that Canadians are [more favourable](#) to ambitious climate action when they feel economically secure. At the same time, in Canada and abroad, we are seeing a [significant and possibly permanent shift](#) in public attitudes towards climate change, with growing numbers of Canadians believing it is a serious threat that demands urgent policy action.

So, in the midst of the worst economic downturn in nearly a century, do Canadians think now is the best or the worst time for Canada to be ambitious about climate change? A new survey from Positive Energy at the University of Ottawa and Nanos Research answers this question. We asked Canadians: “On a scale of 0 to 10, where 0 means this is absolutely the worst time and 10 is absolutely the best time, how good a time is it for Canada to be ambitious in addressing climate change even if there are costs to the economy?”

The results are revealing. Canadians are divided on the issue, but they lean towards action. A plurality of survey respondents said that now is a good time to be ambitious about addressing climate change: 45 per cent answered seven or higher. Less than a third of respondents said now is a bad time: 29 per cent answered three or lower. Close to a quarter (23 per cent) answered between four and six.

Interestingly, more than one-third of respondents answered either 0 (17 per cent) or 10 (17 per cent). This suggested that calls for a “green recovery” could be polarizing. Positive Energy’s research on polarization over energy and climate issues shows that disagreement over policy issues is not necessarily a prohibitive hurdle to policy progress. But strong disagreement—where views are hardened, extreme, or resistant to compromise—can be. Governments must tread carefully.

We also analyzed which Canadians are more likely to say now is a good versus a bad time for climate ambition. People in the Prairies (50 per cent), men (34 per cent), and Canadians aged 35 to 54 (34 per cent) are more likely to say this is the worst time (0 to 3). People in Quebec (54 per cent), Atlantic Canadians (48 per cent), women (48%), and Canadians under 35 (51 per cent) are more likely to say it is the best (7 to 10). As with previous Positive Energy surveys, [this poll suggested that geography is a stronger indicator of attitudes on energy and climate than age or gender.](#)

The study was a hybrid telephone and online random survey of 1,049 Canadians, 18 years of age or older, between June 28 and July 2, as part of a Nanos omnibus survey.

We also asked Canadians why they believe now is a good or bad time to address climate change. Those who said now was the best time most frequently answered that climate change cannot wait (39 per cent), or that the pandemic offers a good opportunity for change and highlights our impact on the environment (37 per cent). Those who believe now is the worst time say we should wait until the economy has recovered (47 per cent), or that there are other priorities to address—namely public health and the search for a vaccine (21 per cent).

So, what does this mean for decision-makers? Our findings suggested that climate change is still on the minds of many—but not all—Canadians, and over one-third of Canadians have very strong views on the subject. Given this, economic recovery from COVID-19 could be a unifying or polarizing issue for the country, depending on how governments at all levels approach it. Policies that appear to favour one region over another or measures that don't pay close attention to trade-offs with priorities beyond the climate, could face stiff resistance.

Reviving the economy and reducing greenhouse gas emissions need not be a zero-sum game, but they require integrated balanced approaches and careful attention to where and how Canadians' views align and diverge on the issues.



WEDNESDAY, AUGUST 5 2020

COVID-19 SHUTDOWNS WILL GIVE WILDLIFE ONLY SHORT-TERM RELIEF FROM CLIMATE CHANGE AND OTHER THREATS

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[Originally published by The Conversation on June 18, 2020](#)

There had to be a silver lining to the nearly universal lockdown of the COVID-19 pandemic. One of the small benefits has been a temporarily lighter human footprint in many ecosystems.

[Wildlife sightings are increasing](#), [air quality is improving](#) and [carbon emissions are dropping](#). While these glimmers of positivity cannot come close to eclipsing the tragic human cost of the coronavirus, many are now asking what the pandemic will mean for wildlife around the globe.

Global carbon dioxide emissions for 2020 are [expected to fall by up to eight per cent due to shutdowns](#), although the [resumption of global activity could increase emissions and offset some of these gains](#). While this is a significant reduction in our expected emissions, it's far from enough to turn the tide on climate change's impacts on biodiversity.

Climate change can't be stopped by COVID-19. This past [April](#) and [May were both tied for the warmest on record](#), and if this trend continues then [June will be the 426th month in a row where global average temperatures are above the 20th-century average](#). This serves as a strong reminder that even if we stop all carbon emissions today, we will still be fighting to reduce emissions and sequester carbon for a long time. The stakes are dangerously high.

Lessons from the bees

We've known for a while that bumblebees and many other species have been [declining over recent decades](#). Finding the driver of these declines is especially important for a group of pollinators that performs [irreplaceable ecosystem and agriculture services](#).

Recently, we showed that there is [strong evidence that climate change has played a role in the declines of bumblebees across North America and Europe](#). In this new work, we found a mechanism that links climate change to these pollinator declines: climate chaos.



Bombus ternarius, the tricoloured bumblebee, seen on Manitoulin Island, Ont. (Peter Soroye)

The most common way to describe climate change is as the progressive rise in temperature, observed over decades, following the growth in atmospheric carbon concentrations, mostly due to human activities. Although gradual temperature changes can pose deadly threats, the frequency and intensity of extreme weather events seems to be rising sharply as the greenhouse effect grows. Heat waves, for example, are both longer and hotter.

As Hamlet noted, “ay, there’s the rub.”

Wildlife can tolerate some degree of warming, either by finding ways to move away from risky weather or evolutionary adaptation. But it’s much [more difficult for species to tolerate increasingly chaotic extremes in weather](#) such as [prolonged drought and heat waves, or tropical storms](#).

100 years of bumblebee data

For bumblebee species, we could predict local extinction and colonization of new areas by estimating whether recent climate change had subjected species to temperatures beyond any they are known to have tolerated in the past.

Through a series of tests with a dataset including over 100 years of bumblebee observations, we found that species have disappeared in places where temperature spiked above what they could tolerate. Species across North America and Europe are consistently being pushed to the edges of these limits during the year, much more often than they ever were for most of the 20th century. Increasing intensity of land use — including increased pesticide use — also harms bees, but these effects are distinct from the dangerous signal of climate chaos.

While our recent study focused on bees, increasing extremes from climate change should, in principle, affect other species in the same way. If this is the case, then the increasing temperature or precipitation extremes above (or below) the limits of what species can tolerate could [rapidly and abruptly begin reshaping ecosystems around the globe by as early as 2030](#).

Necessary responses

Although we'll feel the effect of climate change for decades, it's necessary to address its causes now while we still have reasonable prospects of mitigating its worst impacts. Strategies like maintaining [sheltered micro-habitats to provide shade or cover](#), and keeping a diversity of habitats in a landscape can help reduce exposure of species to extreme weather.

Perhaps, humanity's lighter touch during the pandemic of 2020 will mean more species can traverse landscapes or make it through another hot year in landscapes that are a little less disturbed. For instance, the [profusion of wildflowers in unmaintained roadside verges](#) could create a large amount of nesting and foraging habitat for pollinators if left for the whole year.

The growing number of [gardens that are appearing as people spend more time at home](#) could provide a similar benefit. As with reductions in emissions, continuing these practices long after lockdowns end will be the deciding factor in whether they make a difference for pollinators and other wildlife.

In some places, [species and ecosystems are bouncing back](#), although [this is not true everywhere](#): as economies suffer, poachers are killing protected wildlife.

The glimmers of hope will never make the incalculable human toll of a global pandemic worthwhile, nor its economic costs. Yet, hope remains a vital tool to motivate action to address climate change.

Climate change isn't locked down and it isn't practising social distancing. It is accelerating the erosion of the planet's life support systems and the decline of species that humanity would be hard pressed to do without. Concerted global action can make dangerous situations better, whether it's a pandemic or the climate crisis.





SATURDAY, MAY 23 2020

WHAT THE CORONAVIRUS IS REVEALING ABOUT HUMAN RIGHTS IN CHINA

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The coronavirus is bringing to international attention the Chinese government's disregard for transparency and the individual human rights of its citizens.

We're all familiar with the fate of the Wuhan ophthalmologist Dr. Li Wenliang who raised an early alarm about the virus in December. In fact, he was one of [eight doctors](#) who discussed it on a chat group. The next day Dr. Li was accused of "illegal behaviour" by publishing an "untrue discourse" that had "severely disrupted social order". All eight were detained and interrogated, and Dr. Li and one other doctor later died of the virus. When one is detained in China, it is not a simple discussion and clarification. One is kept in a cell with the lights on all the time and subjected to six to eight hours of violent interrogation every day while sitting in a tiger chair – a metal chair to which your wrists and ankles are clamped in vises and a form of torture according to those who have experienced it. There is no access to lawyers or family for six months, and often longer.

On January 2nd, the Wuhan Institute of Virology developed the genomic sequence of the virus, which is important to understanding the virus and stopping it – but the lead scientist was detained. Chinese authorities did not publicly confirm the existence of the coronavirus until January 9th, two days after it was revealed by the Wall Street Journal whose journalists have since been expelled from China. It was not until January 12th that Chinese scientists were given permission to share the genome sequence and analysis.

Throughout this period the Chinese government said that the virus was not very dangerous and that it could be controlled. For six weeks it [suppressed](#) information about the actual situation. On January 23rd, all flights, trains and road travel from Wuhan, a city of 11 million, to other parts of China was stopped. However, flights continued for weeks after from Wuhan to other countries.

The organization [Chinese Human Rights Defenders \(CHRD\)](#) has said that 452 "citizen journalists" as well as professors were detained for writing or creating videos showing what was really happening, or "spreading rumours" as they call it, an illegal activity in China. Even a retired property tycoon, Ren Zhiqiang, was detained for writing an essay criticizing Xi Jinping in the context of the virus. CHRD reported that as early as February 2nd, the Ministry of Public Security had already handled 5,511 cases involving "people fabricating false information about how the government was handling the coronavirus".

In fact, the censorship minions in China went into overdrive, broadly censoring communications that were critical of the government, references to Dr. Li, and even neutral information related to the coronavirus, including on the widely popular WeChat. (It has been [reported](#) that for unknown reasons the censorship worked poorly for the first two weeks after the January 23rd Wuhan lockdown, and people learned that the doctors had been muzzled and were very angry about it, showing that the Party could lose public support quickly.) In message blocking, keywords are often targeted. According to [Citizen Lab](#), this has had the effect of restricting vital communication related to disease information and prevention.

As it spread in Wuhan, Beijing pressured Wuhan officials to get on top of it and keep numbers low. Local officials do not like to give bad news to the central government, and officials in Beijing certainly do not like to receive it. Soon officials pointed the finger at a US military officer who had visited Wuhan in October to participate in military games. Then they said it was an Italian who had brought it from northern Italy; indeed, by then it was spreading in Italy as Chinese workers returned from visits home for Spring Festival in Wuhan.

Across China, those citizens with symptoms were quarantined in government-run facilities such as converted hotels and arenas. Some people were welded into their homes for not self-isolating. Others were publicly shamed for not wearing masks; police officers chaining them to a lamppost in the street as an example to others. There were no exceptions from immediate quarantine: a father was taken away and his son, who suffered from cerebral palsy, was alone for six days with only two meals, and he died.

Authorities required everyone to download a [health app](#) on their phones, with colour coding: green means you can be out in the community; yellow that you cannot leave your home, and red that you are to be quarantined in a government facility. It is unclear how people moved from one colour to another though apparently it draws inputs from other government databases. The company that created it is the same one that created an app for the police in Xinjiang to track Uyghurs. People were tracked using their cellphone location signals.

Reported deaths in China were so low at 3,318 that they were not believed given the context of videos and photos that had emerged showing long lines of people outside hospitals and people lying dead, and ignored, in the street where they fell. UK intelligence said the number of deaths was forty times the reported number. We do not know because of the lack of transparency, but in the face of international condemnation for suppressing the numbers, China recently changed the number of deaths upwards to 4,634 – but not the number of cases.

[Others](#) have looked at the number of cremation urns given to Wuhan families – 3,500 per day over a 12 day period at the end of March. That is 42,000 dead souls. Another estimate assessed the number of cremation furnaces in Wuhan operating at capacity and put the number at 46,800. There were similar issues of accuracy of reported numbers with AIDS and SARS numbers in China. Evidently, transparency has not improved since then.

China is starting to get back to work now, but even as far away as Beijing, many schools are still not back in session. That is an important indicator of when the virus is considered to be over.

Now there is a fear of COVID-19 coming in from outside China, and there are disturbing anti-foreigner trends, especially against Africans, after five Nigerians in Guangzhou tested positive. Across China, black people have been evicted from their homes and beaten up, and not allowed to rent elsewhere. Other foreigners have not been allowed in many stores and hotels.

The Party can be expected to leave in place all the surveillance technologies they have used to control and track its citizens. There could be many future permutations of these technologies, just as the tracking of Uyghurs in Xinjiang using apps is being extended to others in the country.

In an [interview](#) with Nathan VanderKlippe in the Globe and Mail April 14, 2020, Dr. Wu Fei, Director of the Artificial Intelligence Laboratory at Zhejiang University in Hangzhou said that China's policy comes down to "human rights or human lives – and when it's a matter of survival, human rights should be ranked less important." In China, since 1949, individual human rights have consistently been ranked by the State as less important than almost anything else, and with the coronavirus, China is taking yet one more step backwards.





THURSDAY, JUNE 11 2020

RELIGION AND SUPERSPREADER EVENTS

PROF. ANDRÉ LALIBERTÉ, PROFESSOR, FACULTY OF SOCIAL SCIENCES AND FACULTY AFFILIATE, ISSP, UOTTAWA

As soon as governments became aware of the severity of COVID-19, most have promoted social distancing measures. This included cancelling or limiting attendance at sporting events, concerts, and other collective meetings where large groups converge. The rationale for these decisions has been to prevent what epidemiologists call 'superspreading events (SSEs)', or large infection clusters. A [preliminary study](#) of SSEs has linked them to four types of events: mass attendance festivals, religious services or missionary work, funerals, and business meetings. If imposing limits on religious services and funerals, which may overlap, represent for many a necessary measure to protect lives, for others it may appear as an overbearing state intervention. Regardless of where one stands on this issue, there is little question that religious services, pilgrimages, and processions bring together enormous numbers of people. As such, they present considerable challenges for authorities to address, as their legitimacy depends on their ability to ensure public safety.

Many of the largest gatherings in human history happen to be religious pilgrimages. The most important of these is probably the [maha Khumbh Mela](#), which brought together over 10 million pilgrims in Haridwar, India, on April 13, 2010. The smooth and orderly operation of these kinds of events require important logistical support, including the deployment of nurses and medical staff ready to respond to incidents such as fainting, heat stroke, or injuries due to entrapment. In this most elemental sense, religious gatherings may seem like the ultimate SSE, as [alarmed voices are reporting](#) in the Hindu, [Muslim](#), and [Sikh](#) communities. However, intolerant political leaders, such as those of the incumbent BJP in New Delhi, have wasted no time using such unfortunate occurrences to raise [dangerous conspiracy theories](#), claiming that entire communities have knowingly spread the disease, thereby inflaming communal relations and turning a public health issue into a political conflict.

Even in post-industrialized societies where religion seems to have vanished from the public sphere, authorities have yet to find the right balance between respecting freedom of conscience and protecting the public interest. In the USA, President Trump made an outlandish claim about injecting disinfectant to cure COVID: a fringe religious movement in that country, [Genesis II](#), had actually promoted this most bizarre prescription, oblivious to its dangerous consequences. In Japan, the new religious movement [Happy Science](#), whose leader claims an ability to 'channel' Buddha, Jesus, and Freddie Mercury, claims the virus has extraterrestrial origins and promotes a ritual prayer as a cure to COVID-19. In South Korea, the media singled out a [church](#) for encouraging crowding, and therefore exacerbating the risk of an SSE. These movements, marginal as they seem, nonetheless represent a headache for authorities that want to promote public health measures while upholding freedom of religion.

However, religious institutions and public authorities can also cooperate to promote public health. Indeed, religious leaders repeating public health recommendations can help to legitimize those orders. Another example from East Asia is instructive in that regard: [The government of Taiwan](#), in February of 2020, convinced leaders of the island temples' associations to postpone the annual Matsu procession, a major ritual that usually draws up to 400,000 worshippers across the country in over a week, to ward off the spread of the contagion. At the time of writing, the level of infections in Taiwan stands out as one of the lowest in the world.

There is an even more complex dimension to this problem: religious authorities may denounce traditions as 'superstitions' because they fear a competitor. Governments may join in denouncing these customs, or celebrate them as 'folklore' or 'tradition' worthy of support. Traditional Chinese Medicine (TCM) stands out as an example of this ambiguity. Medical authorities followed the Chinese Communist Party's instructions for years, rejecting TCM as a 'feudal tradition', but changed course in the 1990s and began promoting it as an affordable alternative to modern 'Western' medicine, and in particular the practice of Qigong. The government abruptly withdrew its support for such practices after realizing that the popularity of some of its promoters, who posed as spiritual masters, risked overshadowing that of political leaders. However, Xi Jinping recently revived this strategy and [promoted TCM](#) to the World Health Organization as a palliative and preventive approach to deal with COVID, even as the [medical profession cautions](#) against some of its practices.

Adjudicating the rights of communities to promote their values and beliefs while ensuring the safety of the public on a global level is bound to become an ever more salient issue in our tightly interconnected world. Managing the movement of people prescribed by religious calendars can represent extraordinary challenges at the best of times. During public health crises, they can turn into a catastrophe. As a matter of sound public policy, it is important for governments to engage with community leaders, including religious leaders. Very often, when citizens lose confidence in their political leaders, they can turn to these alternative authorities. State leaders confident in their own legitimacy will not hesitate to request the help of religious institutions in implementing policy decisions and reinforce the message.

An aerial photograph of a city, likely Stockholm, showing a river, a bridge, and a tall building in the background. The image is faded and serves as a background for the text.

BEYOND COVID-19: INNOVATION AND THE COMMON GOOD





SUNDAY, APRIL 26 2020

COMMON GOOD AT THE TIME OF THE PANDEMIC

MICHÈLE STANTON-JEAN, GUEST SCHOLAR, CENTRE DE RECHERCHE EN DROIT PUBLIC, UNIVERSITÉ DE MONTRÉAL AND ADVISORY COUNCIL MEMBER, ISSP, UOTTAWA

I would like to offer some reflections agreed upon on my experience as a former Deputy Minister of Health for Canada from 1993 to 1998. During this period, I experienced the Krever survey on contaminated blood, the redesign of the Canadian tobacco law, the aftermath of the Baird report on new reproductive technologies, the impact on Canada of a plague outbreak in India and Ebola in Nigeria. The management of all these events prompted social, economic and legal reflection of course, but also ethical.

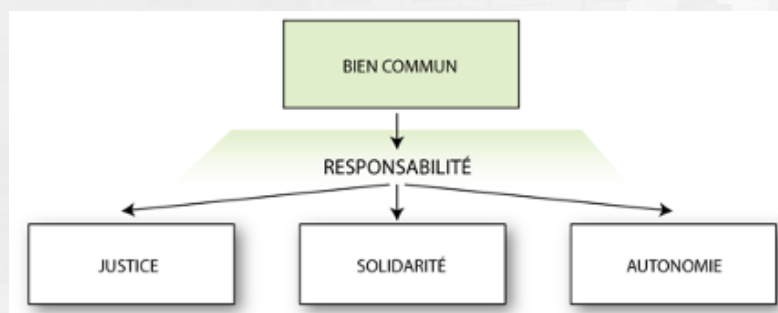
Globally, we are going through a crisis of unprecedented magnitude caused by the spread of a virus that has spread with unprecedented speed that leads us to rethink our ways of thinking and acting. In our rich country we are faced with a situation which brings us and will lead us to make choices which will have to be based not only on quantitative data but also on qualitative data.

These choices should clearly identify the values on which they will be based. To this end, we often mention the common good, the public interest, the general interest, living together, without precisely defining what we are talking about. These are all concepts which, according to the definitions we give them, have a variable understanding and extension. I will focus here on the common good.

A conceptual framework for the common good

The common good as such is almost never defined. For the purposes of my doctoral thesis, based on the experience acquired in the management of several files, I did a literature review on this subject which led me to specify its conception from works of Aristotle and Plato through Thomas Aquinas, Hobbes, Mill, Rawls, Kant, Habermas, Smith, Keynes, Locke, Bentham, Hayek, Friedman, etc. From all these writings two currents emerge: an economic / liberal current (or neo-liberal) and a humanist and social current. The definition that I retained is largely related to the humanist and social current.

This reflection led me to build the following conceptual framework:



The values or principles represented in this model must interact with each other.

Application to the current pandemic

How can such a framework help us in the difficult decisions that we have to make during the pandemic and that we will have to make in the months and years to come? For example, decisions related to containment and deconfinement, the choice of structures intended for the most vulnerable people, the research to be undertaken, the allocation of health resources, the drugs to be developed?

We have been very focused on "cure" in health management and we have often forgotten about "care" and therefore public health. This approach led us to an important hospital-centrism.

Knowing that in 2031, a quarter of the Canadian population will be 65 and over, we must make difficult choices in the development of our public policies - all the more so as the consequences of the economic measures taken during the pandemic will not give us the ability to do whatever we want to do. So like many vulnerable countries, whether we like it or not, we will have to decide on the basis of principles and values not only economic but also social and legal.

Implementation

Politicians will likely be able to present texts to us that will mention some of the values presented in the model above, but will the implementation be designed to reflect these values? This is the challenge ahead.

For this implementation to be done in a fair, responsible manner and taking into account justice, solidarity and autonomy, it will be necessary, among other things:

1. Specify clearly and in accessible language the objectives of the desired laws, measures and standards;
2. Establish public consultation processes to properly identify the level of social acceptability;
3. Develop continuous partnerships with all strata of the population including the elderly;
4. Respect the dignity and privacy of all;
5. Evaluate the implementation on an ongoing basis;
6. Adequately finance research on diseases but also interdisciplinary public health;
7. Agree to contribute to humanitarian aid and the achievement of sustainable development goals.

Such a conception of the common good is not easy to implement because it leads to complex choices that can never satisfy everyone. It is in the level of acceptance of these choices by the population which will frequently have to move from an individualist approach to a collective approach that we will see if the objectives pursued by the common good can be achieved.



WEDNESDAY, JUNE 17 2020

INNOVATION IS THE PATH TO A BETTER FUTURE FOR A POST-COVID CANADA

TERESA MARQUES, PRESIDENT AND CEO, RIDEAU HALL FOUNDATION AND ADVISORY COUNCIL MEMBER, ISSP, UOTTAWA

By its very nature, innovation can be noisy. It demands change, flexibility and innovators to loudly champion how they've shaped the future for the better. That noisiness is not always in line with perceptions of "Canadian politeness". Post-COVID-19 Canada will require more noise about innovation; not only to get us through the immediacy of the global pandemic, but to inspire innovative solutions to address longer-term critical global challenges.

New results from the [Rideau Hall Foundation's second annual Culture of Innovation Report](#) paint a picture of a country that values innovation and sees innovation as a driver that can improve our everyday lives. However, Canadians don't necessarily see themselves as connected to innovation, nor do they include Canada among the top countries for creating a culture of innovation. In fact, 65% of respondents believe that Canadians are risk averse, and only half said they try to innovate in their own daily lives.

We undertook our research in February. Would the storyline hold true today? Do we still see ourselves as a quiet and stable nation, or has this crisis moved us to collectively overcome our aversion to making noise and embrace innovation as central to our national identity?

Very early on in the pandemic, individuals, governments and companies across the country started to ask what they could do to help their loved ones, their communities, their nation.

The barriers of age and technological savvy fell as we embraced virtual ways to connect with and support our loved ones and neighbours. The RHF's Culture of Innovation Report tells us about a generational divide in terms of innovation, with younger generations seen as the key to Canada's innovative future. But, that was before. COVID-19 has forced us to rethink how we live and work. More importantly, it's shown us what Canadians young and old are capable of.

Communities found novel ways to make sure that no one was being left behind. When they could, small businesses and offices rapidly transitioned their operations online. Industry scaled-up production or re-tooled manufacturing lines to produce goods to help in the fight against the virus.

Our pre-COVID research told us that Canadians found government slow to embrace change with fewer than a third of respondents seeing the government as innovative. But in this crisis, governments too responded swiftly. They developed, implemented and adapted policies and programs to help Canadians navigate the uncertainty. Schools rolled out online learning in a matter of weeks so that our kids could keep learning.

And, through it all, together made a lot of noise. We shared what we were doing and how we were doing it. The media highlighted stories of ordinary Canadians making extraordinary contributions. Innovation has become a word we use in our everyday conversations. Together, we've embraced a culture of innovation.

As the economy begins to open up and as the distance between us starts to shrink, there will be many challenges left to tackle. We must work together to reconstruct our economy and our communities post-COVID. It won't be easy, but we can do it. We have proven to ourselves, and to each other, what we can do when we have a united purpose. We have evidence now of the positive impact of taking risks and experimenting with new solutions to difficult problems.

Imagine what we could accomplish together if we put that same spirit of innovation to work to combat other global threats. Threats like the climate crisis or food insecurity. A culture of innovation is an essential element of the better, noisier future that we must commit to building together. For surely, the reward is worth the risk.



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The Institute for Science, Society and Policy is a cross-faculty Institute at the University of Ottawa exploring the links between science, society and policy. Our network includes professors, researchers, practitioners and students from multiple faculties and disciplines both inside and outside uOttawa.

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