Centre for International
Governance Innovation

Reimagining a Canadian National Security Strategy | No. 7

Borders and the New Geopolitics

Neil Desai and Cathy Munroe

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The Centre for International Governance Innovation (CIGI) is an independent, non-partisan think tank whose peer-reviewed research and trusted analysis influence policy makers to innovate. Our global network of multidisciplinary researchers and strategic partnerships provide policy solutions for the digital era with one goal: to improve people's lives everywhere. Headquartered in Waterloo, Canada, CIGI has received support from the Government of Canada, the Government of Ontario and founder Jim Balsillie.

À propos du CIGI

Le Centre pour l'innovation dans la gouvernance internationale (CIGI) est un groupe de réflexion indépendant et non partisan dont les recherches évaluées par des pairs et les analyses fiables incitent les décideurs à innover. Grâce à son réseau mondial de chercheurs pluridisciplinaires et de partenariats stratégiques, le CIGI offre des solutions politiques adaptées à l'ère numérique dans le seul but d'améliorer la vie des gens du monde entier. Le CIGI, dont le siège se trouve à Waterloo, au Canada, bénéficie du soutien du gouvernement du Canada, du gouvernement de l'Ontario et de son fondateur, Jim Balsillie.

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About the Project

Canada's approach to domestic and international security is at a profound moment of change. The shock wave of COVID-19 and its looming future effects highlight the urgent need for a new, coordinated and forward-looking Canadian national security strategy that identifies emerging and non-traditional threats and considers their interrelationships. Complex interactions between foreign policy, domestic innovation and intellectual property, data governance, cybersecurity and trade all have a significant impact on Canada's national security and intelligence activities.

Reimagining a Canadian National Security Strategy is an ambitious and unprecedented project undertaken by the Centre for International Governance Innovation (CIGI). It aims to generate new thinking on Canada's national security, inspire updated and innovative national security and intelligence practices, and identify ways that Canada can influence global policy and rulemaking to better protect future prosperity and enhance domestic security.

CIGI convened interdisciplinary working groups, which totalled more than 250 experts from government, industry, academia and civil society, to examine 10 thematic areas reflecting a new and broad definition of national security. Each thematic area was supported by senior officials from the Government of Canada, designated as "senior government liaisons." They provided input and ideas to the discussions of the working group and the drafting of thematic reports. Project advisers provided support and advice through specific lenses such as gender and human rights. This was critical to strengthening the project's commitment to human rights, equity, diversity and inclusion.

The project will publish 10 reports, authored independently by theme leaders chosen by the project's co-directors. The reports represent the views of their authors, are not designed as consensual documents and do not represent any official Government of Canada policy or position. The project was designed to provide latitude to the theme leaders to freely express new thinking about Canada's national security needs.

A special report by the project's co-directors, Aaron Shull and Wesley Wark, will analyze Canada's new national security outlook and propose a security strategy for Canada.

About the Authors

Neil Desai is an executive with Magnet Forensics, a Canadian technology company that develops digital forensics software used by more than 4,000 police, national security, and other public and private agencies with investigative authorities in more than 90 countries. He serves as a senior fellow at CIGI, an executive in residence with the Rogers Cybersecure Catalyst and is a faculty member at Singularity University. He previously held senior roles in the Canadian government in Global Affairs Canada and in the Office of the Prime Minister.

Cathy Munroe has more than 32 years of experience in the federal government of Canada, with more than 17 years as an executive in positions related to border management. She retired from the Canada Border Services Agency (CBSA) in 2013 as the vice president of the Programs Branch, where she was in charge of all of the domestic and international border programs supporting both security and facilitation. She was also responsible for the Canada-US Beyond the Border initiatives. She previously held executive positions in the field, headquarters and project management areas. Prior to the CBSA, she held senior roles in Revenue Canada and Customs and Excise, where she worked on transition teams for the creation of the CBSA and the introduction of the goods and services tax. Since her retirement, Cathy has been working as a consultant providing advice and support on border facilitation and security, management and government policy. She has a bachelor of arts and a master of public administration from Dalhousie University in Halifax, Nova Scotia.

Acronyms and Abbreviations

AI	artificial intelligence
CBSA	Canada Border Services Agency
COVID-19	coronavirus disease 2019
GPHIN	Global Public Health Intelligence Network
IJC	International Joint Commission
ITU	International Telecommunication Union
NGO	non-governmental organization
NSICOP	National Security and Intelligence Committee of Parliamentarians
OAG	Office of the Auditor General of Canada
PHAC	Public Health Agency of Canada
SARS	severe acute respiratory syndrome
UNHCR	United Nations High Commissioner for Refugees

Executive Summary

This report details four domains in which border management policy will need to adjust in order to maintain the future security of Canadians: the role of border management in safeguarding health security against epidemic disease, the likely effects of climate change on Canadian border security, the opportunities and problems in border management arising from novel technologies, and the need to rethink Canadian border security to deal with the emergence of non-traditional threats and to reflect today's geopolitical environment.

- The unique Canada-US border requires particular focus. Renewed bilateral mechanisms should be created to maximize the opportunities to harmonize and/or simplify border policy, recognizing that the idiosyncrasies of domestic politics will make some degree of policy divergence inevitable. One such mechanism — to secure both countries against the impact of future epidemic diseases — would be the creation of a bilateral expert advisory body to share and assess information from the current pandemic and to establish plans for coordinating border management, including border closures, during future health crises and to develop the infrastructure to quickly scale up individual health testing and contact tracing.
- Climate change will render Canadian border security more difficult. Canada's Far Northern Arctic territories will become more accessible, as well as more economically and strategically valuable, for both Canadians and foreign actors. The Canadian government should prioritize the development of the technology and infrastructure needed to exercise border control in the unique Arctic environment, and the Indigenous and diplomatic partnerships necessary to retain territorial sovereignty in the region.
- A growing proportion of the value that flows between national borders now takes the form of intangible assets (i.e., data and software), which elude the conventional bricks-and-mortar-style methods of border control. The failure of policy to keep pace with technology has created many legal ambiguities. It is imperative that the Canadian government clarifies the mandates and responsibilities of various departments and agencies with regard to cross-border data flows. Additionally, legal clarification must be provided to guide the deployment of novel monitoring and investigative technologies in Canadian border management while ensuring privacy and security.
- It is imperative that there is a new strategic vision for the border that takes a whole-of-government approach and accounts for non-traditional threats, technology development, the digital economy and the current geopolitical environment. This vision should be grounded in stronger relationships with other levels of government, the private sector and international partners.

There are numerous additional subjects that a border security policy review could tackle; however, those areas requiring policy attention due to the immediate and grave security challenges they pose to Canadians should be the focus. This report outlines the priorities that should be considered and tangible policy recommendations to address them.

Introduction

Performing a full review of the national security implications of border policy necessarily entails re-evaluating the meaning of border security. It is clear that the nature of national borders and, by extension, the methods and key actors needed to manage them, has changed drastically over time.

The role of the border in national security is multi-faceted, encompassing the interdiction of goods and people that may present security risks, easing the movement of travellers and facilitating international commerce. The interception of illegal goods and potentially dangerous individuals and goods may loom largest in public consciousness, but safeguarding Canada's economic vitality is another crucial objective of border policy.

The coronavirus disease 2019 (COVID-19) pandemic has demonstrated how these goals often exist in tension. More stringent control over cross-border movement is sometimes necessary to shield Canadians from imminent threats. However, such measures may also hinder the Canadian economy by denying access to markets and stifling the flow of vital imports. To what degree economic interests should be considered

a matter of national security is a matter that will be considered elsewhere in CIGI's Reimagining a Canadian National Security Strategy project. However, the point at hand demonstrates how certain facets of border policy that are not usually considered to be directly tied to national security may have national security implications.

Border policy has evolved over time in response to a changing global environment. The process of globalization and digitization over the preceding decades has expanded cross-border traffic in goods and people and amplified the complexity of cross-border issues. This is especially true in the realms of technology, health security and climate change, the latter of which is reshaping migration patterns and transforming the previously inaccessible Canadian Arctic into a new and complex "border region."

The September 11 terrorist attacks forced a more sudden shift in border policy, focusing attention on its national security ramifications. In the 20 years since, Canada's bilateral work with the United States, and multilateral work with a broader set of allies, has continued to strive toward greater border security while also enabling the flow of cross-border commerce and travel. Most notably, advances have been made in assessing risks pre-arrival, and pre-clearance activities have been implemented to reduce congestion at the border. Such methods have effectively extended the responsibility of border security both temporally and geographically. The identification of risks now begins well before a border crossing is attempted, in many cases, and requires the collation of information far from the point of entry.

Border management was once rooted in bricks-and-mortar infrastructure: the roads, airports and shipping facilities that permitted international movement. More recently, the growing importance of intangible assets has further muddied the issue of border management. International data flows constitute an ever-growing portion of the economic value that moves between countries. Likewise, assets such as software, algorithms, cryptocurrencies and 3D-printing blueprints can be effectively transferred from one national jurisdiction to another without ever interacting with the agencies responsible for governing their analogue counterparts. Through cross-border data flows, 3D printing could be used to create illegal and dangerous goods (for example, weapons), or to replicate a critically needed piece of medical equipment that would have normally been subject to an import process and potential duties and taxes. To what degree this should be thought of as a "border" issue is an open question.

In light of the evolving security context, the Government of Canada must exercise foresight to identify the governance tools, technologies and infrastructure needed to address challenges on the near horizon. While the Canada Border Services Agency (CBSA) remains central, it is clear that many contemporary border security issues are not within its mandate. For example, technological change, along with the extension of risk assessment beyond the immediate time and place of transit, has ensnared a myriad of government departments and agencies at the national and provincial levels into various aspects of border management. Non-governmental actors in the private sector have likewise taken on expanded roles in certain border issues. A new Canadian national security strategy will need to clarify where responsibility and leadership for different border security issues lie.

The time is now ripe for a strategic review of border policy and an updated strategic vision of Canadian border security.

Health Security

The Threat and the Role of Health at the Border

Health has always been an issue for border management. It is one factor considered in determining who may enter the country and assessing applications for immigration to Canada. The CBSA works with the Public Health Agency of Canada (PHAC) to manage responses to health security risks. Likewise, the CBSA collaborates with the Canadian Food Inspection Agency to ensure the protection of food, plants and animals. Nevertheless, the COVID-19 pandemic is qualitatively different than past experiences. Previous outbreaks (for example, severe acute respiratory syndrome [SARS], Ebola, H1N1 and mad cow disease) were far more limited in extent and duration and did not result in such an extensive closure of border traffic. Prior to the COVID-19 pandemic, it would have been unthinkable for the border to have remained closed to all but essential traffic for such a length of time.

Like many countries, Canada was not prepared for the sheer scope and impact of COVID-19. The government proved slow to rouse itself to action. While early warning systems and risk assessment processes did exist, they were not adequately supported or integrated across all levels of government and industry sectors. These challenges were compounded by the fact that the federal government sets and administers national standards for the health-care system, while provinces and territories manage and deliver health-care services, requiring a significant amount of coordination.

The global nature of today's economy has engendered dependency on the fast and reliable movement of people and goods with minimal interruption at the border. Rather than being considered merely one of several factors impacting border security, public health has become the most salient threat as of the time of writing. Experts anticipate future pandemics of comparable scale, meaning that such border management challenges will likely prove enduring. Health security must be a key element of any future border security plan. The post-pandemic border will need to integrate measures against health threats into its fundamental processes.

Planning for Future Pandemics

Two recent reports have attempted to assess Canadian preparedness for major public health threats in the future. On March 15, 2021, the Office of the Auditor General of Canada (OAG) tabled the report *Pandemic Preparedness, Surveillance, and Border Control Measures* (OAG 2021). This was followed by *The Global Public Health Intelligence Network (GPHIN) Independent Review Panel Final Report*, on May 28, 2021 (Bloodworth, Breton and Gully 2021). While some of the concerns highlighted in these reports were related to current plans not being updated or tested, the pandemic has also revealed more fundamental flaws. Especially troubling was the absence of a pre-existing strategy for border security in the event of a pandemic, despite the expressed need for one based on lessons learned from the SARS outbreak. The post-pandemic review must closely scrutinize the role that cross-border movement played in the pandemic, as well as the way the pandemic affected the border.

The Customs Act[1] and the Quarantine Act[2] provide a strong legislative foundation for dealing with health issues at the border. However, effective border security also rests on a combination of surveillance, intelligence, risk assessment and targeting. If these elements are not working well, any actions to mitigate and deal with threats will be seriously compromised. One area identified by both the OAG and the Independent Review Panel as a weakness in dealing with the COVID-19 pandemic, was the lack of a fully integrated surveillance and risk assessment process within PHAC, along with insufficient appreciation of the relevance of surveillance information at some levels in the organization. GPHIN has been in existence for more than 20 years and is a critical tool to identify potential health threats across the globe. PHAC uses this system in conjunction with other sources of information to undertake risk assessments and issue alerts. An effective, fully integrated risk assessment process is necessary if decisions are to be made in a timely manner, which, in turn, is necessary to minimize the potential impacts of any future outbreaks.

Given that every major epidemic disease that has affected Canada has originated outside the country, the border plays a significant role in health security. Decisions on how to manage the border during health crises, including whether temporary closures are necessary, are fundamental to the management of any pandemic. In the early days of an outbreak, it will likely be difficult to discern whether drastic measures such as border closures are warranted. Therefore, the quality of information and risk assessment, as well as the speed at which information is disseminated, is critical. This requires linkages between various levels of government, and with key areas of the private sector.

Management of Health at the Border

The likelihood of future pandemics means that border closures are a tangible possibility. However, given the dependency of Canada's economy on cross-border trade and travel, the duration of such closures must be minimized. More than CDN$1.6 billion in goods and services typically crosses the US-Canada border every day. After the September 11 attacks, it became clear that

1 See https://laws-lois.justice.gc.ca/eng/acts/c-52.6/page-1.html.

2 See https://laws-lois.justice.gc.ca/eng/acts/q-1.1/page-1.html.

mechanisms were needed to ensure that commerce continued to flow even in times of crises, and steps were taken to enable essential traffic to continue despite heightened border security.

A vexing issue for Canada throughout the COVID-19 pandemic has been the inconsistency between Ottawa and Washington in terms of policy actions and public messaging. It should be recognized that each country has its own domestic issues that influence its decisions. However, the greater the divergence between national policies, the more public trust and confidence are undermined. The pandemic has provided first-hand experience of what works well and what does not. As borders closed to non-essential traffic, the early agreements on how to preserve the flow of commercial goods, the effective binational connections between agencies (both at the national level and at border-crossing facilities), and the pre-existing linkages with industry stakeholders proved effective in supporting the needs of both countries.

However, other questions remain to be addressed. Future efforts should aim to clarify when border closure is warranted, specify which forms of cross-border traffic should be exempt, and identify situations where community transmission undermines the efficacy of border closure. This will entail providing greater clarity as to what qualifies as "essential," setting detailed criteria for allowing exceptions, and ensuring consistent application and enforcement of rules. To the extent possible, the closure and opening of the border needs to be done in alignment with the United States, with better transparency when national approaches differ. Public engagement, communication and better coordination between different levels of government are also required. This includes clarifying the distinction between the advice of health experts and the decisions made by elected leaders, the latter of which take into account other factors that are not always apparent to the public.

Since health security will have a more prominent place in border management moving forward, it is clear that there is a need to introduce lasting border clearance mechanisms that provide confirmation of individual health status. Given that the CBSA and other border agencies are increasingly using various forms of pre-arrival information and clearance to determine admissibility, it is important that these processes and systems are updated to verify any health requirements. It would be advisable to deal with issues as far away from the perimeter as possible to minimize potential health threats before they arrive.

In the immediate term, verification of vaccination status will be part of the strategy for dealing with the ongoing COVID-19 pandemic. Canada has been using the ArriveCAN application to allow travellers to submit mandatory information, including vaccination status, before they arrive in the country. Presumably, this process could be used in future situations where vaccines have been developed for protection against a virus.

Concerns that have been raised include the impact on unvaccinated individuals and possible incoherence with the policies adopted by other countries (in particular the United States). Certain countries may only accept specific versions of a vaccine (if multiple doses are required, combinations of the different versions would further confuse matters). Greater international harmonization on the use of vaccine information would improve global health security. Another potential issue is that the information required by other countries may impinge on the privacy of Canadians travelling abroad. The recognition of COVID-19 vaccines as relevant to travel is the most recent example of an area where efforts need to be made to ensure that measures taken do not compromise the privacy and security of health data.

While the deployment of vaccines will likely prove pivotal in turning the tide of any pandemic, future outbreaks will require policy strategies to slow the rate of infection prior to vaccine development. The ability to undertake large-scale testing before and at the time of arrival into Canada in an efficient manner will be crucial. Developing improved contact-tracing abilities should also be prioritized. Maintaining control over the volume of cross-border inflows will largely depend on the speed with which effective testing infrastructure can be established.

As the immediate threat to public health recedes, Canada has an opportunity to engage with international partners and take stock of lessons learned over the previous two years. Given Canada's close relations with the United States and unique border, an obvious first step would be to engage in a binational effort with the United States, carefully reviewing the often-frenetic events of the COVID-19 pandemic and examining how to align policies going forward.

Climate Change and Borders

Impacts of Climate Change

Climate change is an issue of immense importance to Canadian border security. While there is increasing recognition that urgent action is needed on this front, there has been no acute crisis to prompt decisive action in the same manner as the September 11 attacks or the COVID-19 pandemic. Rather, climate change has unfolded gradually, and exhibited an incrementally rising impact on Canadian security.

Migration Patterns

Recent years have seen large groups of people displaced in many areas of the world. Political instability, oppression and war account for much of this movement, but the impacts of climate change exacerbate this trend due to prolonged drought, natural disasters and other effects on habitability. While there remain gaps in the data compiled globally on environmental migration, there were roughly seven million displaced persons worldwide at the end of 2020. Disasters in 2020 triggered more than three-quarters of the new internal displacement, with more than 98 percent of these weather events occurring in East Asia, Southeast Asia and the Pacific (Migration Data Portal 2021).

The terms "climate refugees" or "environmental refugees" have been used to refer to individuals who have been forced to flee their homes and, in some cases, their countries of origin, due to weather events and environmental conditions attributed to climate change. While the 1951 Convention Relating to the Status of Refugees does not specifically include weather-related disasters as a criterion related to refugees, there is growing recognition that this is a pressing problem that needs attention (Office of the United Nations High Commissioner for Refugees [UNHCR] 1951). Climate change and environmental degradation are contributing to widespread displacement of people, which could dramatically impact migration patterns in the future (Ida 2021).

While the impact of future climate refugees on Canada remains unclear, there is a global imperative to monitor developments and to identify possible climate-driven migration emergencies in advance. Canada has an excellent track record in the resettlement of refugees and has been recognized as a world leader by organizations such as the UNHCR. In addition to welcoming large groups of refugees in response to crises in other parts of the world, Canada has a responsibility to support international efforts that provide assistance to the developing countries where these crises are most likely to occur, and to those that must accommodate the displaced individuals.

While there are many facets to international aid, from peacekeeping operations and capacity building to emergency response and relief operations, the predicted impact of climate change needs to be factored into any priority-setting process. Given the current dearth of data on environmental migration, an early area of focus of Canadian efforts should be to maximize engagement with international groups, such as the UNHCR, that are trying to better understand the climate trends and potential future impacts on displacements. Undertaking work with academic institutions in Canada that conduct research in this domain could provide another avenue for gaining improved data, which could be used to prioritize international development assistance.

Refugees who want to enter Canada are subject to a multi-layered screening process, including security reviews. These measures are important to maintain the integrity of the asylum process and to ensure public confidence. The recent situation in Afghanistan focused public attention on the challenge of conducting such a process rapidly enough to ensure the evacuation of impacted individuals in the midst of an emergency. This event has highlighted the need to continually look for methods of balancing rapid crisis response with robust security measures. It also demonstrated the importance of intelligence and foresight in emergency preparedness planning. This same logic also applies to climate-driven crises. Canadian missions around the world are actively engaged in climate "hotspots" where crises occur. With eyes on the ground and local contacts, these missions can be tapped to provide information that is pertinent to both enhancing Canada's anticipation of refugee crises and informing response strategies.

The Canadian Arctic

One area where the impact of climate change has become especially clear is Canada's Far North. Temperatures are rising several times faster in the

Arctic compared to other locations. The extent of sea ice is rapidly shrinking. As waterways open, this is increasing the accessibility of the North to commercial activities, shipping, scientific research, tourism and other activities. Increased traffic in the North is also supported by a number of government initiatives, such as the addition of a deepwater port in the Nunavut community of Qikiqtarjuaq (Canadian Broadcasting Corporation 2021). The Arctic is also of growing interest for its newly accessible natural resources, causing a number of foreign governments to focus attention on the region.

The increased marine traffic poses a number of threats, including potential accidents, environmental risks, disruption to wildlife, the irregular movement of people and goods, and sovereignty challenges. There are a limited number of CBSA ports of entry, and few border services officers stationed in the Canadian Far North. It will be critical to have alternative methods of reporting and clearance.

Pre-arrival risk assessment and pre-clearance activities would greatly aid matters but will require processes adapted to Northern realities. There are distinct groups of individuals travelling in the North, and processes should be tailored to deal with their particular border-crossing requirements. Risks are likely to differ between individuals from local communities (primarily Inuit and First Nations) who want to visit relatives in small villages in Greenland or Alaska, and those individuals coming from outside of the Arctic for business or pleasure.

Border operations in the Arctic are hindered by a lack of robust communications infrastructure and monitoring and enforcement capacity. The Arctic is a unique environment; its expanse is vast and climate harsh. It comprises many small communities widely scattered over an immense territory. These factors make monitoring and providing security a daunting challenge, and solutions that might be employed in other areas of the country are unfeasible in the Arctic. Domain awareness and surveillance should be emphasized.

Border security in the region requires a multilateral approach taken with other organizations and Indigenous peoples. This could include branches of government and non-governmental organizations (NGOs) present in the North such as the Department of National Defence (including the Canadian Rangers), the Royal Canadian Mounted Police, the Coast Guard, Fisheries and Oceans, Oceans North and many others. In addition, there are already various Indigenous groups that are working with governments to monitor traffic and environmental changes. Using existing networks and creating new avenues to share monitoring information could be of great benefit to border security as well.

Unfortunately, communications networks and high-speed internet connectivity continue to be inadequate in many areas, making technological solutions difficult to implement. Without such infrastructure, the common methods of border management utilized elsewhere in the country simply cannot be implemented. Canada's closest neighbours in the North, Greenland and Alaska, already have fibre optic networks in place. Rectifying this gap in capabilities should be a priority. Doing so would enable remote clearance processes and identity verification capacity in the Arctic region.

The federal government does have a connectivity strategy for Canada with a goal of providing high-speed internet to remote rural Canadians over the next 10 years. Under this plan, the most remote five percent of the population (presumably in the Arctic) would not have access to this service until 2030. This will place Canada even further behind its peers and impair its ability to properly secure and service its Arctic population. If at all possible, the deployment of infrastructure necessary for monitoring and control of cross-border movement in the increasingly accessible Arctic should be accelerated. Canada may have an opportunity to leverage low Earth orbit satellite internet to address this challenge while reducing capital-intensive infrastructure investments.

The changing geopolitical landscape has produced a heightened level of foreign interest in the Canadian Arctic. The issue of Canadian territorial sovereignty has taken on greater significance in recent years as other nations seek to exert their influence within the Arctic region. Climate change has created greater opportunities to access this area. With technological advances in strategic weapon systems such as cyber, space and hypersonic platforms, Canada's adversaries have been afforded greater capacity to penetrate and threaten the sovereignty and territorial security of Canada and its allies in the Far North. In addition to making communications networks a priority, Canada needs to ensure that its strategy for the Arctic includes rethinking and modifying defence

capabilities to contend with new geopolitical realities. It is critical that the government has a visible presence in the region capable of asserting control of, and defending, its territory. This will take a concerted approach with other organizations in the region (including government, Indigenous and private sector actors). It would also be advisable to forge renewed partnerships with the United States and European countries that possess a stake in the joint defence of this region from actors such as Russia and China.

Technology

Technology as Enabler

Newly deployed, emerging and anticipated future technologies have the potential to address some of border security's most vexing problems. Facial and object recognition technology promises to greatly enhance border services' ability to confirm individual identities and the nature of goods transiting the border. The application of mundane but practical technologies, such as apps that would enable travel documents to be uploaded in advance of an individual reaching the border, could also be of great benefit. Amid the COVID-19 pandemic, a tool of this nature has already been used to relay vaccination status to border security personnel prior to the passenger arriving at the point of entry. Technology can also be used to bridge gaps in policies between different jurisdictions, removing some of the most frustrating, tedious and costly parts of the international travel experience and border management interventions.

However, technologies cannot be repurposed from other sectors without careful consideration of the other governance issues that may result. The technologies that will be of greatest benefit to border security rely on access to the personal information of travellers. Deploying these technologies further embroils border services with rising concerns about protection of privacy and cybersecurity. Hence, the use of personal data and surveillance technology must be carried out in a transparent fashion.

Recent headlines concerning the use of artificial intelligence (AI) applications in the public safety sector often cloud the fact that the use of such technologies in border security is not a new development. Nevertheless, its application must be understood from a governance perspective to maintain and strengthen public trust. Legal requirements, public opinion, the interests of key stakeholders and data sovereignty considerations all influence the appropriateness of deploying a given technology. It would be advisable for the adoption of new technologies into border security to be subject to multiple layers of governance oversight to ensure these considerations are adequately addressed. This could include internal governance, as well as consultation with stakeholders including the Office of the Privacy Commissioner of Canada and the National Security and Intelligence Committee of Parliamentarians (NSICOP). Transparency on the use of new technologies at the border should also be standardized. The use of such technologies should be proactively disclosed by default, unless the act of disclosure would compromise national security. In this event, operators should be required to outline their case for both internal governance and parliamentary oversight.

Consequently, government procurement of technologies for border management must become more agile in order to attend to these numerous objectives, and to keep pace with the rapidly developing technology sector itself. To this end, it would be sensible to establish proof-of-concept "sandboxes" to foster innovation in the application of advanced technology to border security. Ambition and resolve on the part of government will be critical to any such endeavour's success. Sandbox projects perform best when executed with a spirit of risk tolerance unimpeded by fear of failure, along with a commitment to bestow adequate funding on ideas with demonstrated success in the testing environment.

Reliance on digital technologies will inevitably instill vulnerability to cyberthreats. Amid the ceaseless barrage of infiltration attempts to which digitally connected systems are subjected, it will be vital to preserve widespread trust in essential systems. This will require investments in appropriate technologies, training for personnel and devising standard operating procedures.

Technology Transiting Borders

The cross-border movement of modern technologies can also present a challenge for border security and stymie progress toward other

key policy objectives. The number of digitally connected devices, such as phones, tablets and other smart devices, moving across borders continues to grow. At the same time, each device's appetite for data is also rising, resulting in an exponential increase in international data flows.

The challenge lies in learning to manage a phenomenon that clearly involves the transmission of valuable assets and information across national boundaries, but which equally clearly defies many of the conventional attributes of a "border issue." Data and other intangible assets effectively transit borders without interacting with the bricks-and-mortar infrastructure that handles most facets of border management.

It has been possible to inspect, search or seize digital devices in the possession of travellers using established procedures. Such measures have been used sparingly, given the general public's concern for digital privacy. From 2017 to 2021, only 0.014 percent of all travellers transiting the border had their devices examined. Despite such restraint, the Alberta Court of Appeal's 2020 decision in *R v Canfield* found that the CBSA's use of its examination authorities to review digital devices at the border is inconsistent with section 8 of the Charter of Rights and Freedoms pertaining to the right to be secure against unreasonable search and seizure.[3]

Addressing the legal ambiguity on the lawful review of digital devices transiting the border that the court's ruling has created is a pressing short-term concern. However, the trend toward storing data in the cloud, often residing in other jurisdictions rather than on the devices themselves, will likely present an even more complicated challenge in the long term.

These data flows are so essential to economic prosperity in the modern age that they cannot plausibly be widely curtailed. Yet Canada must acknowledge that this approach presents a host of novel security risks. At present, the majority of internet traffic between Eastern and Western Canada must transit through the United States. This presents a vulnerability to national sovereignty, as well as a potential infringement on individual citizens' privacy, as they may be subject to foreign laws without knowledge or consent. The ease of cross-border data traffic also complicates matters such as duties and taxes. Given that cross-border data flows are projected to continue rising at an accelerating pace, clear and decisive leadership from the Government of Canada is needed to address inevitable growing pains.

Legal mechanisms will be needed to grant the capacity to conduct lawful searches in pursuit of money laundering, terrorism, child sexual exploitation, hate speech and intellectual property protection. This task will be rendered more difficult by the deployment of certain general-purpose technologies designed to evade oversight, including advanced encryption techniques, blockchain technology and cloud data storage. These issues are global in nature and would benefit from greater governance cooperation at bodies such as the Organisation for Economic Co-operation and Development, the Group of Seven and the Five Eyes alliance (consisting of Australia, Canada, New Zealand, the United Kingdom and the United States). Similarly, the use of biometric identification and AI in border security poses challenges for how the requisite data is shared and used by different nations. The importance of global standards, agreements and interoperability has only grown in response to technological advancement.

The government's approach to regulating the use of technology must become more purposeful and directed. Lack of new legislation has effectively delegated regulation of novel technologies to the judicial system, meaning that judgments about the appropriate use of technologies are made based on interpretations of existing laws, which predate the technology's existence. Facial recognition technology, and biometric identification more generally, is already being deployed in the field without a clear policy delineating the appropriate limits on its use. AI is actively being incorporated into decision making about immigration, travel, imports and exports. The time has come for a principle-based updating of legislation that balances security, economic prosperity and individual liberties.

Beyond the intangible digital realm, physical transportation technologies on the horizon such as autonomous vehicles can also be expected to usher in changes to border security operations. In some instances, this could be to the benefit of the safety of Canadians. For example, fully autonomous vehicles could eliminate the risks posed by drivers in cross-border transit. However, Canada's current

3 *R v Canfield*, 2020 ABCA 383 CanLII.

border strategy is premised on forms of transport that allow for interventions to take place at the border. Autonomous air and land transportation technologies may not afford the same opportunity. Taking advantage of these technologies while mitigating their inherent risks will require the creation of new physical and policy infrastructure.

Border Policy — The Global Border

Bilateral Management of the US Border

Canada's relationship with the United States is unique, given that the two countries share the largest land border in the world and an immense volume of trade. Any Canadian border policy review must have a strong focus on this relationship and the management of the shared border. There have been many joint initiatives between the two countries in the past that have shaped the border management programs in existence today. While priorities routinely differ, these nations experience many of the same threats and are aligned in their efforts to combat them.

Canada and the United States have a history of working together through a number of bilateral organizations. Perhaps most obvious are the long-established binational organizations, such as the North American Aerospace Defense Command, which provides aerospace warning and control as well as maritime warning in the defence of North America. Similarly, the International Joint Commission has a role in protecting the shared waters of the Great Lakes.

Another form of joint border management used in recent years is to bundle a series of initiatives together under a joint declaration. In the wake of the September 11 attacks, the two governments announced the US and Canada Smart Border Declaration, which provided an action plan for creating a secure and smart border for the flow of people and goods.[4] Another example of this form of border management came in 2011 with the Beyond the Border Action Plan: A Shared Vision for Perimeter Security and Economic Competitiveness (Public Safety Canada 2011). These action plans, as well as others before them, resulted in many advancements in border management, such as the Trusted Traveler and Trusted Trader programs, improvements to risk assessment through the receipt of advance passenger and commercial data, and the introduction of pre-clearance.

Additionally, numerous initiatives have been undertaken jointly by Canadian government agencies and their US counterparts to deal with specific issues. However, it is evident that most significant joint progress is made when there is a shared commitment at the prime ministerial and presidential levels, with a more formal structure to monitor progress and ensure accountability. The most recent framework for partnership on border concerns came on February 23, 2021, when the prime minister and the president announced the Roadmap for a Renewed U.S.-Canada Partnership, which focuses on combatting the COVID-19 pandemic and other key areas of interest (Office of the Prime Minister of Canada 2021). Specific items of relevance to the border include an agreement to take a coordinated approach based on science and public health criteria to considering measures to ease border restrictions in the future; re-establishment of the Cross-Border Crime Forum with a cross-border task force to address gun smuggling and trafficking; and coordination of work in the Arctic in several areas, including on issues related to climate, security and sovereignty. The success of the road map will be dependent on commitments to real action and achieving tangible results.

It is also important that outstanding commitments not be ignored. While previous joint work has resulted in very similar border programs, not all initiatives were successful. The level of harmonization is varied. Not only does this make it difficult for businesses trying to navigate the border, but it also impedes progress toward certain security goals. One gap is that initiatives intended to improve security at the common US-Canadian perimeter in order to allow a more open US-Canada border (based on the concept of "cleared once, accepted twice") have not been fully implemented. An example is the pilot project conducted on marine cargo arriving in Prince Rupert, Canada, and continuing by train across the border to the United States. The measures put

4 See www.legislationline.org/documents/id/7543.

into place to screen the cargo on the first point of arrival in Prince Rupert were not sufficient to ease the process at the US-Canada border (Public Safety Canada 2018). Without harmonization or greater mutual recognition of each other's risk assessment and border processes, this is unlikely to change.

Given that most of the two nations' border processes are aligned in terms of ultimate goals, it is quite possible that the verification performed by one country could be recognized by the other, allowing goods or people that have entered either Canada or the United States to cross their mutual border into the other country without further interference. This is an area where a group of experts could be mandated to examine current border-related processes, similar to the health security recommendations of this report.

An expert group could be charged with identifying areas where mutual recognition of each nation's border security measures could be possible, as well as specifying the changes necessary to achieve mutual recognition. As an example, a potential goal would be to have measures of this kind in place for the 2026 FIFA World Cup, which is being hosted jointly by Canada, Mexico and the United States. Both Canada and the United States have visa and travel authorizations in place. Canada currently allows certain travellers to transit through Canada to the United States without needing a valid Canadian visa if they have one from the United States. One of the goals of the expert group would be to look at how the two governments could reach agreement on one single visa process recognized by the other for "two nation vacation" situations (and whether Mexico might fit into this concept). Finding ways to run pilot tests for the acceptance of each other's processes, and making adjustments where required, would be of benefit to both governments and could be expanded to other situations.

International Collaboration

A strategic border policy cannot be limited to removing bilateral obstacles between the United States and Canada. Multilateral collaboration on the movement of people, goods and data will be important to future prosperity and security. Traditional border agencies will likely not play the primary role in monitoring the movement of data. However, coping with the knock-on effects of digital technology will force border agencies to adopt a more integrated approach, both with international allies and with other levels of the Canadian government.

Canada possesses well-established relations with like-minded countries and active security associations in fora such as the Five Eyes. Participation in organizations such as the International Civil Aviation Organization; the World Customs Organization; the World Trade Organization; the World Health Organization; the United Nations' Global Compact for Safe, Orderly and Regular Migration; and many others provides a global perspective in various areas. These organizations aid in establishing international standards to create some level of harmonization for the national processes adopted by different countries, a function that has grown in importance in the current era.

The growth of technology has intensified the need to have international standards in this area, given that data and digital systems operate globally. Governments and the private sector both have an interest in standards considering that, once set, they influence the cost and ease of technological development, marketing, how the technology is used and competitive advantage. Two areas of grave concern to the Government of Canada are what actors are driving the development of standards that become enshrined in law and accepted by industry, and whether these standards are conducive to protection of individual privacy, human rights and national security. A prime example is the United Nations' International Telecommunication Union (ITU), where work is being undertaken to develop standards related to facial recognition, video monitoring and vehicle surveillance, among other things. An article in the *Financial Times* in December 2019 described the high level of influence that Chinese companies exercise within this group, and the potential impact, should the standards promoted by this body reflect Chinese preferences with regard to surveillance and privacy (Gross, Murgia and Yang 2019).

This is an interesting example, as North America and Europe have other bodies that typically set standards in technology. However, nearly 200 member states are part of the ITU, potentially resulting in a large part of the world adopting standards that might not be acceptable in Canada. Where Canada is part of international fora working on standards, it is able to exert its influence. It is critical that close attention be paid to other groups such as this one that may affect national security.

The Role of the Private Sector

The private sector also has a meaningful role to play in any border security review. Private sector service providers perform vital functions in border management. This ranges from the collection of advance information on cargo and travellers for risk assessment and targeting, to the development of systems and infrastructure to ensure security of people and goods prior to clearance. In recent years, more sophisticated technology has been required to deal with security threats and to interact with travellers and business entities, often in real time. Public-private partnerships are increasingly used to develop these systems and processes at a faster pace than government is typically able to operate. An example would be the kiosks used today in airports for identity verification and clearance of arriving travellers, a result of a partnership between the CBSA and the Vancouver Airport Authority (CBSA 2013). The bridge and tunnel operators are another private sector group that has worked in partnership with government agencies.

There are many examples of successful partnerships and a near infinite number of possibilities for others. One of the pillars of the new Roadmap for a Renewed U.S.-Canada Partnership is "Accelerating Climate Ambitions," which includes a commitment to accelerated joint policy action to achieve a zero-emissions vehicle future. Although emissions from cross-border vehicle traffic represent only a small fraction of both countries' emissions, efforts to curtail them could serve as an exemplary initiative. The strategies and best practices developed from pursuing this low-hanging fruit could then be generalized to more impactful bilateral climate efforts.

Approximately 60 percent of trade between the United States and Canada crosses the border in trucks, creating one of the most carbon-intensive trade relationships in the world. Additionally, the CBSA's security efforts target the entire trade chain, including the goods, the conveyance and the driver. In the longer term, a move to autonomous, zero-emission vehicles would not only significantly reduce carbon emissions but would also reduce the need for risk assessment on one part of the supply chain (the driver). This would also reduce the risks of individuals (drivers) crossing as an exception during future pandemics while maintaining critical supply chains. Work is currently being done in both the public and the private sector to look at these and other options to reduce emissions. The border might offer a potential to pilot some initiatives as this work moves forward.

With the expansion of public and private partnerships, there is also a need to ensure appropriate accountability and oversight. The governance model established may vary depending on the nature of the partnership, but it clearly needs to ensure such things as strong policy direction, as well as the setting of targets and measurements. Of critical importance is the need to develop a framework that does not create an undue burden by imposing unnecessary requirements that would dilute the benefit of the partnership.

Recommendations

Health Security

→ Border management strategies and operations must include health as a key pillar for any future border vision, and more detailed measures should be integrated into its operational plans.

→ Establish a Canada-US special advisory body with a specific mandate to conduct a review of the COVID-19 pandemic experience, with the goal of creating a bilateral process that would afford closer collaboration on border management in the face of future health threats. This group should include epidemiologists or infectious disease specialists. Some possible items of interest would be:

- a common definition of essential traffic, and criteria to determine exceptions;
- sharing of information and modelling pertinent to decision makers; and
- shared messaging on decisions (including those cases where the actions taken by the respective national governments diverge).

→ Ensure that the early warning system (GPHIN) and associated intelligence processes (i.e., surveillance, information collection and risk assessment) are fully functioning. The resulting information distribution process should ensure all relevant parties (applicable levels of

government and private sector organizations), including the senior-level decision makers, can obtain this information in a timely manner.

→ Management at the border requires expansion of pre-clearance processes to include health information, an ability to confirm vaccination status and differentiate clearance processes based on the results, and a system that can quickly ramp up large-scale testing and contact tracing of inbound travellers. Privacy of sensitive health data and strong cybersecurity will be critical in the establishment of these processes.

Climate Change and Borders

→ Incorporate environmental events related to climate change as one of the priorities in developing international developmental assistance plans, including as a first step in work to enhance data and modelling with international organizations and academia.

→ Develop an approach for examining security and sovereignty through the lens of climate change and increasing geopolitical competition in the Arctic, forecasting the potential impacts, and devising an action plan to address the issues identified. This should include a strategy for Canada, as well as partnerships with allies for defence of the polar region.

→ In line with the Arctic and Northern Policy Framework, develop an integrated approach for monitoring, domain awareness, surveillance, and enforcement activities that includes government, NGOs and Indigenous organizations.

→ Prioritize the creation of a robust communications network, including low Earth orbit satellite internet, in the Far North, working with other governments, Indigenous groups and the private sector as required.

→ Develop a pre-clearance model that is tailored to the Arctic's particular conditions, making use of existing government agencies, NGOs and Indigenous groups to ensure a sufficient "border presence" to safeguard the border while facilitating clearance.

→ Develop a clear process that supports the movement of Indigenous groups between Canada and Greenland, as well as Canada and Alaska.

Technology

→ Develop key policy principles for technologies being developed to achieve border objectives.

→ Establish a clear policy on the review of devices transiting the border consistent with the border objectives and the Charter of Rights and Freedoms.

→ Develop purpose-built technologies and standard operating procedures that enable devices transiting with passengers to be lawfully inspected when required, while respecting privacy and other rights.

→ Develop a sandbox for testing purpose-built technology aimed at achieving border objectives internally and in collaboration with other public sector entities, academia and the private sector.

→ Develop a governance framework, both internal and external, including parliamentary oversight, to ensure technologies being utilized to achieve border mandates are in compliance with all laws, policies and strategic policy objectives. The use of citizens' personal information for these purposes should be proactively disclosed, unless doing so would compromise national security. In this event, operators should outline their case for internal governance and parliamentary oversight (NSICOP).

→ Develop a cybersecurity readiness plan to ensure continuity at the border.

→ Collaborate with other government department leads (in particular Transport Canada) to conduct exploratory policy development on issues such as data and autonomous vehicles transiting borders.

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→ Create a new strategic vision for the border to account for non-traditional threats, technology development, the digital economy and the current geopolitical environment:

- Develop a border security strategy paper to guide consultations and public discussions to support the new vision.
- Provide clarification on the lead agencies for non-traditional border issues.
- Focus on a whole-of-government integrated approach to the border.

- Identify areas where the use of public and private partnerships would be beneficial and could accelerate the speed of innovation of border initiatives.

→ Establish a binational expert group with the United States to take stock of the current environment and identify areas where there continues to be a need, and an opportunity, to expand harmonization and/or mutual recognition of border processes that would benefit both countries.

→ Develop a plan for moving forward that identifies areas of work or pilot projects that could assist to streamline processes for visitors to Canada and the United States (for example, visa work for the 2026 FIFA World Cup).

Conclusion

With vast oceans on three sides and only a single neighbour on land, Canada has long been afforded a degree of border security above that of most other nations. Yet it would be a grave mistake to allow this blessing to give rise to complacency. Innovations in transportation and communication technology continue to facilitate long-range interaction across the globe, and climate change is gradually transforming the Canadian Arctic into a new border region. As the COVID-19 pandemic has demonstrated, Canada's sheltered geography does not count for as much as it once did. Having roused government to drastic action, the recent plague provides a window of political opportunity to implement decisive policy change that would safeguard Canadian security in the future. Careful management of Canada's bilateral relationship with our southern neighbour, sober preparation for future epidemics, improvements to border management capacity in the Arctic and the creation of new legal mechanisms to contend with new technologies will be essential to Canadian border security.

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Works Cited

Bloodworth, Margaret, Mylaine Breton and Paul Gully. 2021. *The Global Public Health Intelligence Network (GPHIN) Independent Review Panel: Final Report.* July 12. Ottawa, ON: PHAC. www.canada.ca/en/public-health/corporate/mandate/about-agency/external-advisory-bodies/list/independent-review-global-public-health-intelligence-network/final-report.html.

Canadian Broadcasting Corporation. 2021. "Feds announce long-awaited deepwater port for Qikiqtarjuaq, Nunavut." Canadian Broadcasting Corporation, August 4.

CBSA. 2013. "Archived — Automated Border Clearance Program."

Gross, Anna, Madhumita Murgia and Yuan Yang. 2019. "Chinese tech groups sharing UN facial recognition standards." *Financial Times*, December 1.

Ida, Tetsuji. 2021. "Climate refugees — the world's forgotten victims." World Economic Forum, June 18.

Migration Data Portal. 2021. "Environmental Migration."

OAG. 2021. *Pandemic Preparedness, Surveillance, and Border Control Measures.* COVID-19 Pandemic Report 8.

Office of the Prime Minister of Canada. 2021. "Roadmap for a Renewed U.S.-Canada Partnership." February 23. https://pm.gc.ca/en/news/statements/2021/02/23/roadmap-renewed-us-canada-partnership.

Public Safety Canada. 2011. *Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness.*

———. 2018. *Beyond the Border Action Plan — Horizontal Initiative Report 2016–2017.*

UNHCR. 1951. *Convention and Protocol Relating to the Status of Refugees.*

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