

Pathways to Policies

A Report on National Security Researchers and Policy Makers' Sharing of Knowledge

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EXECUTIVE SUMMARY

Objective

The objective of this project was to determine what type of administrative intervention may be appropriate and effective in improving Public Safety Canada's security and intelligence policy analysts' (SIPA) access and use of academic research in the field of national security.

The project fulfilled this objective in two steps. First, it sought to identify where in the knowledge exchange process improvements could be made.

Research Question 1: How can the knowledge transfer and exchange process between Public Safety Canada and academia on national security issues be improved?

Sub-Research Question A: Where are improvements possible in what knowledge Public Safety Canada officials acquire from academia and how they do so?

Sub-Research Question B: Where are improvements possible in what knowledge academic researchers acquire from government and how they do so?

With potential needs identified, possible interventions to fill these needs were identified:

Research Question 2: What knowledge development and exchange interventions may benefit Public Safety Canada's national security analysts and academic national security researchers?

Methodology

Two different methods were used to collect the data required to answer the two research questions.

To identify how the knowledge transfer process could be improved, a survey was delivered to national security policy officials at Public Safety Canada and national security academic researchers participating in the Canadian Network for Research on Terrorism, Security, and Society. The survey asked participants when in the policy or research process they currently do, and ideally would, use their counterparts' knowledge process. It also asked how this knowledge is used and what barriers exist to that usage.

To identify potential models for improving the knowledge transfer relationship, a jurisdictional scan was conducted. The scan looked at how Canada and its main security allies promoted the transfer of existing security knowledge to government.

This research was grounded in a review of the relevant academic literature on knowledge transfer. In particular, academic understandings of knowledge, knowledge transfer, and the use of knowledge within public policy was reviewed.

Key Results

The survey found that the participating public policy officials and academics look to exchange information at three points in the public policy process:

1. One-way communication from Public Safety Canada to researchers to inform them of the issues and problems the government is facing.
2. Collaboration as part of SIPAs' analysis of those problems, including to assist academics in interpreting their results and to transmit those results to Public Safety Canada.
3. Collaboration as part of Public Safety Canada's consultation of potential options.

SIPAs reported internal barriers in completing these transfers. In particular, they cited time, a lack of access to academic knowledge, and a lack of knowledge on where to find academic information. Both academics and government officials also noted that each other's work is not relevant or applicable to their interests.

The jurisdictional scan found that efforts by Canada and its allies to support knowledge sharing for national security policy making largely fall into three categories:

1. the integration of knowledge transfer requirements into research grants;
2. the creation of dedicated teams to engage with academic counterparts; and,
3. the funding of specific engagement opportunities, such as conferences and events.

The literature review showed that these exchanges consist of two types of knowledge: explicit and tacit, with tacit knowledge being exchanged only through face-to-face interactions. Research into public sector organizations validated that community-like bonds are required to effectively facilitate knowledge sharing. However, academics and public officials are often described as existing in two different communities.

Recommendation

This report provides three different paths forward. The choice of path depends on whether Public Safety Canada intends to make a foundational update to its approach to national security, an incremental update to key policies, or monitor for new changes and developments. Depending on the goal, Public Safety Canada would engage with academic researchers respectively through a conference, through the development of a report, or directly through a direct engagement strategy. Other tools could then be used to fine-tune the collective understanding and move the Department towards making a decision. Given the current national security environment, the time since the last major national security policy, and the number of trends starting to take on security dimensions, it is recommended that Public Safety Canada begin engaging with researchers by holding a major national security conference to solicit foresight and theories for the changing world.

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INTRODUCTION

Officials at Public Safety Canada (PS) have a unique and important role. The department’s statute indicates that officials are responsible for, on behalf of the Minister of Public Safety and Emergency Preparedness, “exercising leadership at the national level relating to public safety” (s. 4[2]) and “[establishing] strategic priorities for those entities relating to public safety” (s. 5). These responsibilities extend to “all matters over which Parliament has jurisdiction and that have not been assigned by law to another department, board or agency of the Government of Canada relating to public safety” (s. 4[1]). This stands in contrast with other departments and agencies which have specific mandates for different pieces of the security puzzle. For example, the Canadian Security Intelligence Service is responsible for investigating four specified types of threats (s. 2).

Parliament has thus given Public Safety Canada the responsibility for identifying emerging security issues—those issues not already identified and assigned to a department. PS staff must assess and determine what to do about those issues (establish strategic priorities) and drive the Government of Canada forward in action (exercise leadership).

If the widely-used heuristic of a “policy cycle” (Jann & Wegrich, 2007) is adopted, this places an emphasis on the first two steps of developing a policy: problem identification and research/analysis. Information from academia can be useful for both these steps in many ways. In particular, with respect to problem identification, knowledge from academia can enable a type of “early warning” capacity. When the pace of change in the national security environment is considered, it seems likely that the preeminent national security issue of the future might be identified by a sociologist, a chemist, or a computer scientist who would not consider themselves to be national security specialists, but may be part of or participate in the same networks. Engagement with academic networks can enable this information to flow to public policy officials sooner, enabling quicker public policy responses.

<p>The Public Policy Cycle</p> <ol style="list-style-type: none">1. Identify a problem2. Research the problem and analyze the findings3. Develop options4. Consult stakeholders5. Propose the options to decision makers6. Implement a solution7. Evaluate the solution <p>(Adapted from PolicyNL, n.d.)</p>

Policy analysts working in the field of security and intelligence (referenced hereafter as security and intelligence policy analysts or SIPA) have unique capacities for conducting research and analysis. There are few other areas where covert collection of information is justified. It is tempting in such situations to believe the government has all the information it needs. However, reliance on only government-created knowledge raises the risk of a tunneled, incomplete understanding of issues. Academic understandings are essential to rounding out the understanding of government.

Public Safety Canada relies on information from researchers and policy professionals outside the Government of Canada to help identify new policy issues and to fill in gaps in the information produced internally. But what does this information exchange relationship

with researchers look like? And how can it be improved? These questions are at the heart of this project.

In addition to the direct benefits of knowledge sharing, there are several potential secondary benefits to a strong relationship with academia. For example, strong relationships with professors and graduating scholars develops a better ability to recruit from universities into government's research and policy institutions. Increased engagement can ensure that the understanding of issues develops concurrently in both academia and government, rather than having understanding "catch up" at certain moments of convergence, such as during Parliament's consideration of policy measures announced by the Government of Canada.

Research Questions and Project Objectives

The objective of this project is to determine options for PS to improve knowledge transfer between national security policy officials and academia.

The project fulfills this objective in two steps. First, it determines where in the knowledge exchange process improvements could be made. This is done both with respect to what academic information would benefit SIPA as well as in the reverse direction, what Government information would benefit academic researchers. As a field with government as a major actor, this flow of information is equally important, and vital to producing research which accounts accurately for government's important interventions

Research Question 1: How can the knowledge transfer and exchange process between Public Safety Canada and academia on national security issues be improved?

- **Sub-Research Question A:** Where are improvements possible in what knowledge SIPAs acquire from academia and how they do so?
- **Sub-Research Question B:** Where are improvements possible in what knowledge academic researchers obtain from government and how they do so?

With these two needs identified, potential interventions to fill the needs can be identified:

Research Question 2: What knowledge development and exchange interventions may benefit Public Safety Canada's national security analysts and academic national security researchers?

Organization of Report

This report itself follows the general steps of the policy process. First, a literature review fleshes out the problem within current academic understandings of knowledge, knowledge sharing, and the use of knowledge within the public service. In the Methodology and Methods section the report describe how the problem was researched. In particular, it

explains how the researcher obtained the additional knowledge needed to understand the details of Public Safety Canada's situation and the potential options to address it. The results of this research are reviewed in two findings sections, one for each data collection method. A discussion section consolidates the findings, updates the conceptual model, and identifies areas of concern. The final section "completes" the process for this report by discussing the tools to address the areas of concern, and recommending an approach to implementing them, along with outlining implementation steps.

BACKGROUND

This report is prepared for the National Security Policy Directorate (NSPD) of PS. As the policy centre for Public Safety Canada's national security responsibilities, NSPD develops policies on strategic issues facing the Government of Canada's national security and intelligence community. This section will provide a high-level overview of the various research initiatives and linkages PS and NSPD currently rely on and point to the key gap this study seeks to address.

Sources of Research for SIPAs

Public Safety Canada, and the agencies of the Public Safety Portfolio (Government entities that also report to the Minister of Public Safety), have limited programs to formally engage with the academic community. The Department's "Kanishka Project," named after the Air India aircraft bombed on June 23, 1985, has funded nearly 70 research projects and hosted several events. The project has concluded. Its legacy lives on, however, through the Canadian Network for Research on Terrorism, Security and Society, partially funded by Kanishka. This research network supports some research activities while also serving as a forum to bring researchers with mutual interests together.

PS's most formal entry into national security research is now through the newly established Canada Centre for Community Engagement and Prevention of Violence. The 2016 Budget announced that the Office will "provide leadership on Canada's response to radicalization to violence, coordinate federal/provincial/territorial and international initiatives, and support community outreach and research" (Department of Finance Canada, 2016). The Department as a whole also has a research budget, though the Departmental Plan for 2017-18 highlights, as focus areas of research, crime prevention, policing and corrections, the safe reintegration of offenders, and emergency management (Public Safety Canada, 2017).

Defence Research and Development Canada (DRDC), an agency of the National Defence Portfolio, runs a Canadian Safety and Security Program. In aiming to better "anticipate, prevent/mitigate, prepare for, respond to, and recover from acts of terrorism, crime, natural disasters, and serious accidents through the convergence of Science and Technology (S&T) with policy, operations and intelligence," the Program has a broad focus (DRDC, 2017). In its most recent call for proposals, it supported research in the areas of border security, critical infrastructure resilience, cyber security, community safety and resilience, and threats and hazards mitigation. There is an operational focus to DRDC's program as well. It's current research priorities focus on "developing capabilities" (2017).

The Government of Canada also supports knowledge creation within its institutions. As exemplified by the Recruitment of Policy Leaders program, individuals with substantial research experience are often sought out as policy analysts. These recruits often continue to complete research and engage with academia, though under different structures and

outside the academic structures. In addition, institutions such as the Canadian Security and Intelligence Service or the Privy Council Office's Intelligence Assessment Secretariat analyze trends to identify phenomena that could affect Canada's interests. Much of this knowledge results in classified assessments, unavailable to academic peers.

Portfolio agencies also engage with academia to fulfil their mandates. In particular, the Canadian Security Intelligence Service has an Academic Outreach program to draw in research conducted in Canada and abroad. This work, like the mandates of the agencies, is operationally-driven, to respond to demands in their respective activities and programs.

The Challenge: Efficiency while Searching, including for the Unknown

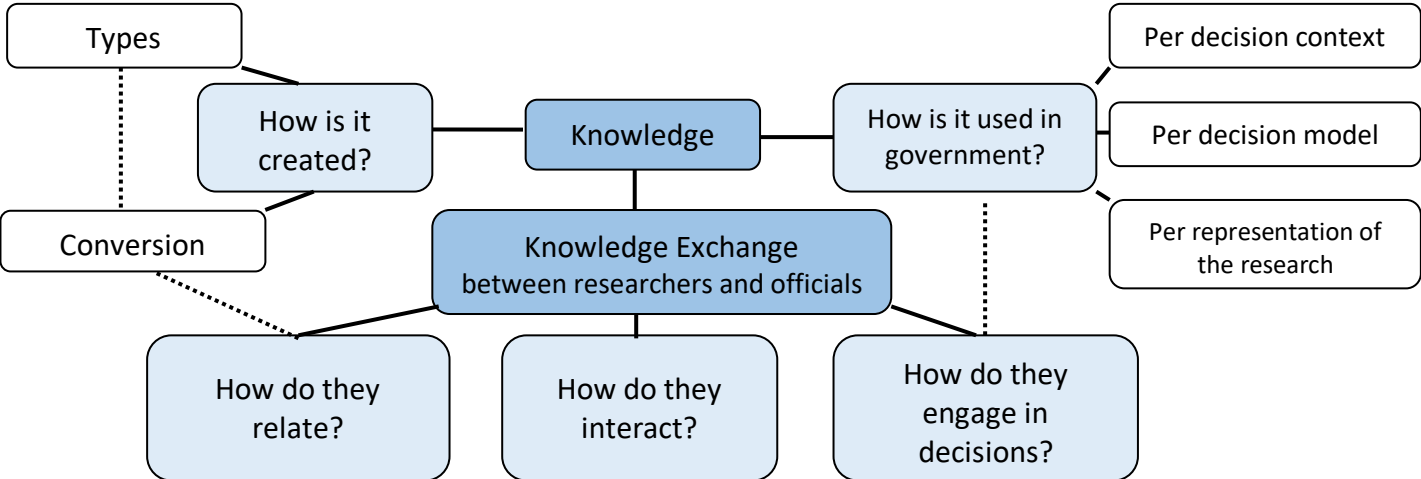
The research processes of the Government of Canada can thus be described as quite purposeful. Research funding is directed towards the major priority of today (countering violent extremism). Internally created research will likely reflect current programs and priorities, as in the case of DRDC-supported research, or driven based on known threats and issues, in the case of intelligence-supported assessments or hiring of researchers. This makes sense, given the organizational contexts and mandates of the initiatives outlined above. Resources are, of course, scarce, so are prioritized for what is known to be needed.

The current framework of knowledge acquisition places it after program development. The "what, how, and when" is subsequent to, and determined by, program and policy development. There is thus an opportunity to look at knowledge transfer in its own right, as a tool for developing new insights and new areas of interest, which could instead lead to program/policy development. In particular, current research exchange may be limited with those engaging in more exploratory research, the type of research that could assist Public Safety Canada in its role of identifying emerging and developing problems. This study will look at the *what*, *when*, and *how* of knowledge transfer processes to understand how useful knowledge can be transmitted to PS at the right time and in an efficient manner, in accordance with its mandate and the resource realities of today. Doing so will require a solid understanding of knowledge, of knowledge transfer, and of the mechanisms for doing so. The ample academic literature on these three subjects is where this report begins in the next section.

LITERATURE REVIEW AND ANALYTIC FRAMEWORK

The purpose of the literature review is twofold. First, it aims to situate the research questions and empirical research within an academic understanding of knowledge and knowledge transfer by breaking down these concepts into usable pieces. Second, it aims to identify how knowledge transfer and the use of knowledge have been studied in a public administration context. To complete the literature review, the researcher primarily depended on academic articles found through the University of Victoria Library’s summon search and Google Scholar. Specifically, the review examines how understandings of knowledge are operationalized in processes where governments use evidence for policy making (“evidence-based policy making”) and where governments exchange information with academia and others. The review seeks to, synthesize themes and concepts (see Figure 1) from the literature and arrives at a usable analytic framework to guide this study.

Figure 1 - Literature review's themes and concepts



How is Knowledge Created?

There is a rich history of studying knowledge, including knowledge transfer. An early, seminal entry into the field includes Wilensky’s book *Organizational Intelligence* in 1967. Carol Weiss’ research into program evaluation lead her to analyze the uptake of evaluation results (1972) before generalizing to the uptake of social research more generally (1977) and onto a specialization on these issues. More recently, after reviewing over a hundred definitions John Girard and JoAnn Girard proposed the following definition for the field of knowledge management:

Knowledge Management is the process of creating, sharing, using and managing the knowledge and information of an organization. (Girard & Girard, 2015)

In academic literature, *knowledge* is defined in contrast to *information*. While *information* consists of a piece of data, *knowledge* imports other elements: namely truth and belief. The dominant concept in academic literature sees knowledge defined as a “justified true belief.” While this concept may have fallen into “disfavor in recent times” (Binmore, 2011), its lasting influence is evident as more modern works debate variations of this definition (see, for example, Bogardus, 2014, where a modern debate on a “safely formed” true beliefs is overviewed). Indeed, modern discussions, such as by Bogardus (2014) or Turri (2012), still maintain those three elements as essential. An example of the constituting components of a “justified true belief” is provided in Table 1.

Table 1 - Break-down of “justified true belief”

Is “the cat is black” a justified true belief?		
Component	Requirement	Requirement applied to the example
Justified	Element of information or evidence.	There is evidence in the cat is black.
True	Element of truth.	The cat is actually black.
Belief	Element of personal belief.	The speaker believes the cat is black.

Types of Knowledge

In *The Concept of Mind* (1949) Gilbert Ryle created a categorization of knowledge that has been influential to today. Ryle separated “know-that” from “know-how.” For example, while one knows *that* the cat is black one knows *how* to play tennis. The focus of Ryle is on how the mind functions for these two types of knowledge. Ryle’s distinction has limited utility from an educational perspective (Lum, 2017), but its simplicity and intuitive appeal has created a lasting legacy (e.g. Gottlieb, 2015).

It is possible to see Ryle’s influence in an influential paper by Polanyi (1966). Polanyi broke human knowledge into two categories: *explicit* and *tacit*. Explicit knowledge (alternatively, *codified knowledge*) refers to knowledge that can be expressed in a statement. “The cat is black” would be one such example. Tacit knowledge (alternatively, *implicit knowledge*) is personal, cannot be expressed in a statement, and is better explained as understanding. A good example the ability to ride a bicycle (Fantl, 2008). Polanyi’s distinction continues to be used as a foundation in work on knowledge transfer, generation, and evidence-based practices (e.g., Rycroft-Malone et al., 2004; Stolper et al, 2009; Eraut, 2000; Thagard, 2006).

Polanyi (1966) suggests that tacit knowledge exists on a spectrum. At one extreme is knowledge that would be impossible to describe, such as how to ride a bike. At the other extreme is knowledge which could be codified, but has not yet been converted. For example, how a certain chef makes a soufflé could be made explicit, with effort, by writing a detailed recipe. Between these two extremes is knowledge that could be partially transformed into explicit knowledge. For example, a professional could make recommendations on how to run effective meetings and a pilot could give instructions on how to pilot a plane. However, the recommendations and best practices would represent some—not all—of the professional’s ability to “read the room” and the pilot’s ability to respond to changes.

Stolper et al. (2009) has applied Polanyi's distinction to the work of professionals. They explain that tacit knowledge manifests in practitioners through feelings of alarm and reassurance. They point to how medical professionals sometimes feel concern or worry, despite the objective indicators pointing to a normal situation. Similarly, practitioners sometimes feel calm, despite indicators of a chaotic or dramatic situation. The authors suggest this is tacit knowledge at work. Others, such as McCormack (1992), have suggested that tacit knowledge is the source of intuition. In contrast to the definition of knowledge discussed above, they defined intuition as an "immediate, *unjustified* true belief."

One important implication of this distinction between tacit and explicit knowledge is that what may appear to be a complete transfer of knowledge is not. To read Public Safety Canada's Departmental Plan provides the explicit form of the Deputy Minister's priorities. However, the Deputy's tacit knowledge about the priorities is not conveyed. In order to fully understand something, interactions will likely need to occur in both modes. What these interactions consist of is the subject of the next sub-section.

Conversions of Knowledge: Creating and Changing Knowledge

Adopting explicit vs. tacit knowledge as an operating taxonomy is in keeping with most recent studies of knowledge management (Nonaka, Van Krogh, & Voelpel, 2006). This section considers how explicit and tacit knowledge is created, and how each is furthered by moving between them.

Ikujiro Nonaka is a leading author on how individuals, in an organizational context, manipulate and transform knowledge to create more knowledge. In a seminal article, Nonaka (1994) proposes four "modes" of knowledge creation, based on what type of knowledge the individual starts and ends with:

- building on tacit knowledge to form more tacit knowledge is socialization;
- conversion from tacit knowledge to explicit knowledge is externalization;
- building on explicit knowledge to form more explicit knowledge is combining; and,
- conversion from explicit knowledge to tacit knowledge is internalization.

Nonaka's theory is often referred to using the first letter of the four modes, making it the "SECI model." These four modes will be discussed in turn below, along with a review of some of the relevant literature written on each respective mode.

Socialization: To Nonaka, the key to transferring and sharing tacit knowledge is shared experiences. In business, these take the form of apprenticeships or on-the-job training. In these exchanges, the learner takes in a senior's knowledge through observation, imitation and practice. However, such processes can be perceived as a cost both to the employer and to the involved employees. This may explain why a review of the literature on socialization identifies a trend where authors discuss how to overcome the costs of such processes (e.g., Bock & Kim, 2001; Bartol & Srivastava, 2002; Cabrera & Cabrera, 2007; Lin, 2007).

A common way for employers encourage employees activities is through rewards. However, in all cited theoretical and empirical studies, it is found that the “attitude” of sharing is a more important factor to the sharing environment than the use of rewards. Rewards are useful, insofar as they contribute to an environment conducive to sharing (e.g. by contributing to trust in management). Motivational factors, such as reciprocity, are more important. Similarly, informal socialization mechanisms (e.g. social events) were effective in facilitating knowledge sharing, while formal mechanisms (e.g. cross-functional teams) were also effective not for their own sake, but because they caused informal socialization and knowledge sharing (Lawson et al., 2009).

Externalization: Externalization, the first of Nonka’s “conversion” modes, sees individuals convert and transfer their tacit knowledge into explicit knowledge by verbalizing a part of their knowledge. Nonka singles out the use of metaphor as a key method of externalizing tacit knowledge. Nonka’s example highlights what Tua (2000) has identified as the main barrier to diffusing tacit knowledge: language and perception. Tacit language is non-verbal, so finding the appropriate words can be a difficult and imperfect process. Tua also points to three other barriers to conveying tacit knowledge:

- time: conveying tacit knowledge can be a lengthy process;
- value: tacit knowledge is not always valued equally to more observable, concrete forms of knowledge; and
- distance: tacit knowledge usually requires face-to-face interaction.

Combining: Combining is likely the most familiar or intuitive of Nonka’s modes. He lists meetings and telephone calls as common knowledge exchange methods that exemplify “combining.” Combining explicit knowledge leads to more explicit knowledge. In both Nonka’s 1994 paper and more contemporary literature, combination is discussed with a focus on the group work unit or team. These discussions focus on how intra-team dynamics can change the knowledge management process. For example, Patel and Fiet (2011) look at family firms versus non-family firms, and Collins and Smith (2006) discuss human resource practices that affect social climate conditions for knowledge exchange and combination.

Internalization: Nonka’s other conversion mode, happens when we move from “knowing something” to “understanding something.” Internalization refers to the conversion of explicit knowledge to tacit knowledge. For Nonka this mode is similar to the “traditional notion” of learning. However, Nonka contrasts our usual image of learning (students absorbing a lesson) by emphasizing that internalization of knowledge requires action. Moving to personally use knowledge requires reflection and the addition of contextual elements. For example, to act on the knowledge “the library is at the corner of Metcalfe and Laurier streets” requires the contextualization of the knowledge by adding personal aspects (e.g., your present location) and through reflection (e.g., what does that location mean *for me*: is it easy to get to? comfortable to get to? safe to get to?). Tsai & Lee (2006) discuss how this concept of acting on knowledge mirrors discussions in education, which often view some form of acting on knowledge as the final stage of the learning process.

Since perspective is so important to the internalization of knowledge, Nonka discusses the importance of face-to-face dialogue to the process. Dialogue, in contrast with other forms of communication, requires the participants to first form a common perspective (a common context) before discussing within it. This lays the groundwork for the internalization of knowledge more effectively than other forms, where the recipient must infer the sender's perspective correctly in order to understand the full meaning of the communication.

While Nonka discusses the movement between types of knowledge, other scholars have discussed the importance of considering the objective behind these transfers. Jim March has suggested that in pursuing learning, organizations must balance between *exploitation* and *exploration* (March & Levinthal, 1993). Exploitation involves learning to advance concepts towards implementation. Exploration involves learning to add new concepts.

Institutions can become trapped, tempted to further the success of implemented projects through focusing exclusively on exploitation (success trap) or to find the perfect idea without putting sufficient effort into implementation (failure trap). Of the two, the tendency is to focus on exploitation over exploration.

James March (1991) discusses that the prioritization of exploitation over exploration is both explicitly and implicitly reflected in organizations. Explicitly, exploitation provides “certainty, speed, proximity, and clarity of feedback” (p. 73), advantaging it to those consciously looking to make the best choice. As a result, exploitation becomes the organizing feature of the organization and becomes embedded in the “procedures, norms, rules, and forms.” One has to only look at the standard organizational chart to appreciate that people are organized and incentivized around existing business lines, rather than areas of exploration or development to appreciate the power in this. March echoes Nonka in concluding that a degree of “friction” may be required, “an influx of the naïve and ignorant,” to keep the organization from resting in established patterns (p. 86).

How is Knowledge Used in Government?

March's work has a focus on the corporate organization. Exploitation and exploration reflect the processes behind product development, but the theory can nonetheless be applied to the public sector. There has also been significant research focused on the public sector specifically and how research is utilized. Rather than organize around the concept of product or business line development, the organizing concept in public administration literature is problem solving. Carol Weiss (1972, 1977) identified seven different models showing how research is used in this central task:

1. The knowledge-driven model adopts the research approach of the natural sciences, where basic research evolves into applied research which is developed and then applied. Weiss noted there are few examples of these steps being carried out in the social sciences, and that other factors, such as political will, determine whether a problem is “taken up” or not.

2. The problem-solving model also suggests linear steps, but rather than being driven by the knowledge, it is driven by the inputs demanded by decision makers. Either decision makers locate the information they need or they commission it. Weiss noted this was the “prevailing imagery” of research utilization.
3. The interactive model recognizes there are other inputs into decision making, such as experience, political insight, pressure, social technologies, and judgement. Rather than seeing research as a one-way input, it allows for discussions between the decision makers and researchers, who perhaps may not have completed the work that is relevant to the decision at hand.
4. The political model sees research used to justify pre-determined beliefs.
5. The tactical model sees the *conduct of* research as political ammunition. In this way, “looking into the matter” becomes the policy rather than a step to forming a policy.
6. The enlightenment model recognizes that the largest impact of social science research may not be the results of the research, but the approach, the concepts, and the theoretical perspectives that influence the policy-making process.
7. A final model views research, along with policy as part of the intellectual enterprise of society. Rather than viewing social research as a precursor to a decision, this perspective sees research, alongside policy, as venturing forward in the human endeavor of understanding the world. Policy, just like research, creates meaning by identifying problems, creating parameters, and defining issues.

Similarly organized around problem solving as the central function, Beyer and Trice’ (1982) identify three central types of research utilization. Many of Weiss’s models can be seen as falling under one of these types, as summarized in Beyer (1997):

1. instrumental utilization, where the knowledge is *applied* specifically and directly to solve a problem and implement the solution;
2. conceptual utilization, where the knowledge *influences* decisions or enlightens the problem; and
3. symbolic utilization, where the knowledge legitimizes a previous decision.

Lindquist (1988) suggests that not all decisions are equal, and that the scale of decision will have an influence on the information the organization seeks and how it might be used. In particular, he suggests there are three decision regimes, each which call for different types of information and uses of that information.

- When making a fundamental decision on the approach to a problem, decision makers seek *research* and *data* on how different factors (variables) interact.
- When making an incremental decision on how to implement or improve a selected approach, decision makers seek *data* on the different factors at play and *analysis* that makes comparisons between alternatives within the pre-determined approach.
- When making routine decisions decision makers will seek *data* that monitors key variables for changes and *analysis* that could indicate a need to make a change.

When the rare opportunity arises where a new policy area may be explored, *scanning* helps identify where may be the best area to act. In contrast to other discussions of research utilization, Lindquist's article recognizes that not all decisions are equal and that decision makers will seek different forms of input depending on what they need at that time. Recent work on research utilization, such as Migone & Brock (2017) or Avey and Desch's (2011), omit this nuance. For example, the latter study asks whether fundamental theories in international relations (e.g., Clash of Civilizations) are "useful" without considering whether the decision maker is at a time where she or he is considering a change at the level that would engage theories of world order.

How do officials and researchers relate?

That academic researchers do not appreciate the cycles of government and the roles of decision makers suggests that these two groups exist at some distance. This separation has been the focus of a substantial amount of research. Following an empirical study (Caplan, Morrison & Stambaugh, 1975), Nathan Caplan developed the "two-communities theory" (1979). Caplan synthesized different discussions about the barriers of exchanging information between government and academics into the communities metaphor, which is intended to communicate that the two groups have different cultures, values, priorities, and separate networks. Caplan argued that simply providing the articles and study results to decision makers might help with micro-decisions, the approach is short-sighted. In order to truly bring the two communities together, engagement must occur at earlier stages, with academics and policy officials engaging to define the problem and consider what parts are suited to academic inquiry.

Research that adopts the "two communities" view has seen little to evidence a change in the gap between decision makers and academic researchers. There have been at least three systematic reviews of evidence-based policy literature, including Invaer (2009), Oliver (2014), and Massaro (2015). The goal of the reviews was to identify trends in the utilization of research by policy makers. All three highlight that there is a disconnect between academics and policy makers. Invaer concludes that an absence of personal contact continues to be a major barrier. Both Massaro and Oliver observe, somewhat ironically, that even studies about how policymakers and researchers should collaborate do not show much evidence of collaboration, many even omitting policy officials from the data collection process.

These studies, as well as Caplan's theory, suggests a "producer" and "user" dichotomy and provide evidence the roles are not being fulfilled well. Lindquist (1990) observes that this dichotomy overlooks several other actors involved in the transfer of knowledge to decision makers, which he refers to as a 'third community'. Policy institutes, interest groups, government councils and commissions, consultants, and others are distinct from the policy decision-making community and academic researcher community. Indeed, the staff that support decision makers may also be part of this "third community." This view is also reflected in Newman, Cherney and Head's (2015) research. While the specific aim of each

actor may vary, they are united in a quest of providing policy relevant information to the decision maker community.

The research of Lindquist (1990) and Newman, Cherney & Head (2015) take issue with the two-communities theory's characterization of there being two roles: "user" and "producer" taken on by two distinct actors. Other work, such as Paul Sabatier's (1988), takes issue with the two-communities view that these groups have different interests. Sabatier suggests that policy advances when decision makers, brokers, and researchers form an "advocacy coalition," united by shared values and belief systems, leading to common views on issues. Information sharing within advocacy coalitions involve "policy-oriented learning," where information about the world is integrated to further the shared policy objective.

How do officials and researchers interact?

Others have sought to understand knowledge patterns by examining the motivations behind the sharing. This includes information sharing involving "gossip" or "idle talk" (Feldman & March, 1981; March & Sevon, 1984). These theoretical discussions question why, if information is shared to support decisions, there is so much information being exchanged that is not relevant to the decision at hand ("idle talk.") They, like Sabatier, suggest that an education or learning lens may better explain the flow of information.

In some cases, what makes the difference between a high degree of engagement and a weak relationship may be very practical. Malange (2017) and Doberstein (2017) note that public sector analysts often depend on proxies to evaluate the quality of a study. Malange found peer-review as an important indicator and Doberstein's experiment found that the sponsoring organization had a heavy influence on how the study was interpreted. As Malange notes, analyst-level uptake of research requires that superiors will also value that work, suggesting that an organization-wide approach must be taken.

The value placed on research can also manifest in other ways. In their survey of Australian public servants, Adrian Cherney and others (2015) identified that time was the most cited barrier to reading and using academic research. Focusing on national security policy makers in the United States, Avey and Desch (2014) found the same result. However, overcoming this barrier would involve much more than writing shorter, more direct papers for public policy analysts. In addition to aligning incentives for utilizing research, the results from these surveys also suggest the development of more direct relationships, that cast academics as informal advisors, helping officials to understand the world around them.

Knowledge management scholars generally concur that a failure to create one community could severely suppress knowledge sharing. In Amayah's (2013) study of contributing factors to knowledge sharing within public sector organizations, she found that community-related considerations were the strongest predictor of knowledge sharing. As determined in Chiu et al.'s 2006 study, three factors were most important to defining a community and enhancing knowledge sharing:

- social interaction ties (i.e., personal relationships);

- a value of reciprocity; and,
- identification (i.e., personal identification as a member of the community).

Amara, Ouimet and Landry (1993) and Lin (2009) also highlight these factors, but suggest that trust, not simply reciprocity, is important to facilitating knowledge sharing. In any case, the importance of community values aligns with Nonka (2009) on how further inquiry into his theories has identified social considerations as central to successful knowledge conversion, innovation, and development.

How do officials and researchers engage in decisions?

Some researchers that have recently begun investigating research utilization in the public sector have done so under the banner of “evidence-based policy” (EBP). A research stream with an agenda, EBP has even has been described as “a movement.” The “evidence-based policy movement” has met varying differing levels of success in institutionalizing research utilization in different jurisdictions. While the EBP stream of research is somewhat disconnected from the other discussions above, the experience of these researchers in attempting to influence the culture of government can nonetheless illuminate important factors to research utilization.

Brian Head (2010) suggests that there are two factors common to jurisdictions that have taken up EBP-based policies. First, EBP requires a “favourable” political culture, which allows “substantial elements of transparency and rationality in the policy process.” Second, EBP requires a research community with a commitment to rigorous methodologies that can result in policy-relevant evidence. Head uses other academic evidence to highlight four “crucial enabling factors” to EBP. These are:

1. “high-quality information bases on relevant topic areas”;
2. “cohorts of professionals with skills in data analysis and policy evaluation”;
3. “political and organisational incentives for utilizing evidence-based analysis and advice”; and,
4. “substantial mutual understanding between the roles of policy professionals, researchers, and decision-makers.”

Richards (2015) echoes Head’s finding that highest level of researcher-policy maker interaction, “co-production,” requires clear political will and direction. This in turn impacts the type of communication, and influence of that communication. In particular, Richards identifies aspects of communication as the key catalysts to deepening the relationship between scientists and policy makers. Important aspects include what is messaged, which should incorporate both informality and effectiveness, and how it is messaged (e.g., frequently and collaboratively) (Richards, 2015).

Head notes that “EBP seems to have less standing and relevance in those areas where the issues are turbulent or subject to rapid change.” While examples of academic inquiry in EBP are evident in education (Slavin, 2002), health care (Brownson, Chriqui & Stamatakis,

2009), and other social services (Stoesz, 2014), not one article spoke to national security issues, a turbulent area prone to rapid changes.

Overtime EBP has evolved and been tested, and come closer to aligning with the greater field of research utilization by appreciating that it is not possible to build policy systems that rely exclusively on scientific evidence (Pawson, 2006). There has been a shift from evidence-based policy to evidence-*informed* policy. This shift is in part to recognize the competing factors on decision makers, but also the limits of scientific knowledge, which may not have relevant evidence needed to base a program, or may not provide the evidence in a way that allows a policy decision to be based on it.

Conclusion: An Analytic Framework to Guide this Study

This wide-ranging literature review has traced the process of knowledge sharing with government from the basic conceptualization of knowledge through to its processing within the organization and the necessary social factors to make knowledge sharing effective. The major findings are summarized in the analytic framework presented in Figure 2. It highlights three communities: “academia,” Public Safety Canada, and institutes. As institutes do not play a particularly major role in the Canadian discussion of national security, the focus is on Public Safety Canada and academia.

The analytic framework identifies a cycle, whereby knowledge is diffused from academia through Nonka’s modes of knowledge creation, transferred to government either as research, analysis, or data, which is integrated into the policy cycle through one of Lindquist’s modes of policy making. Enabling these exchanges are the key factors of the relationship identified in the literature, including identification, social interaction, and the value of reciprocity. What follows in the next section is an overview of the methodology this studies relied on in order to undertake empirical research to understand how knowledge is currently being shared and used by PS and academia and how those processes can be improved.

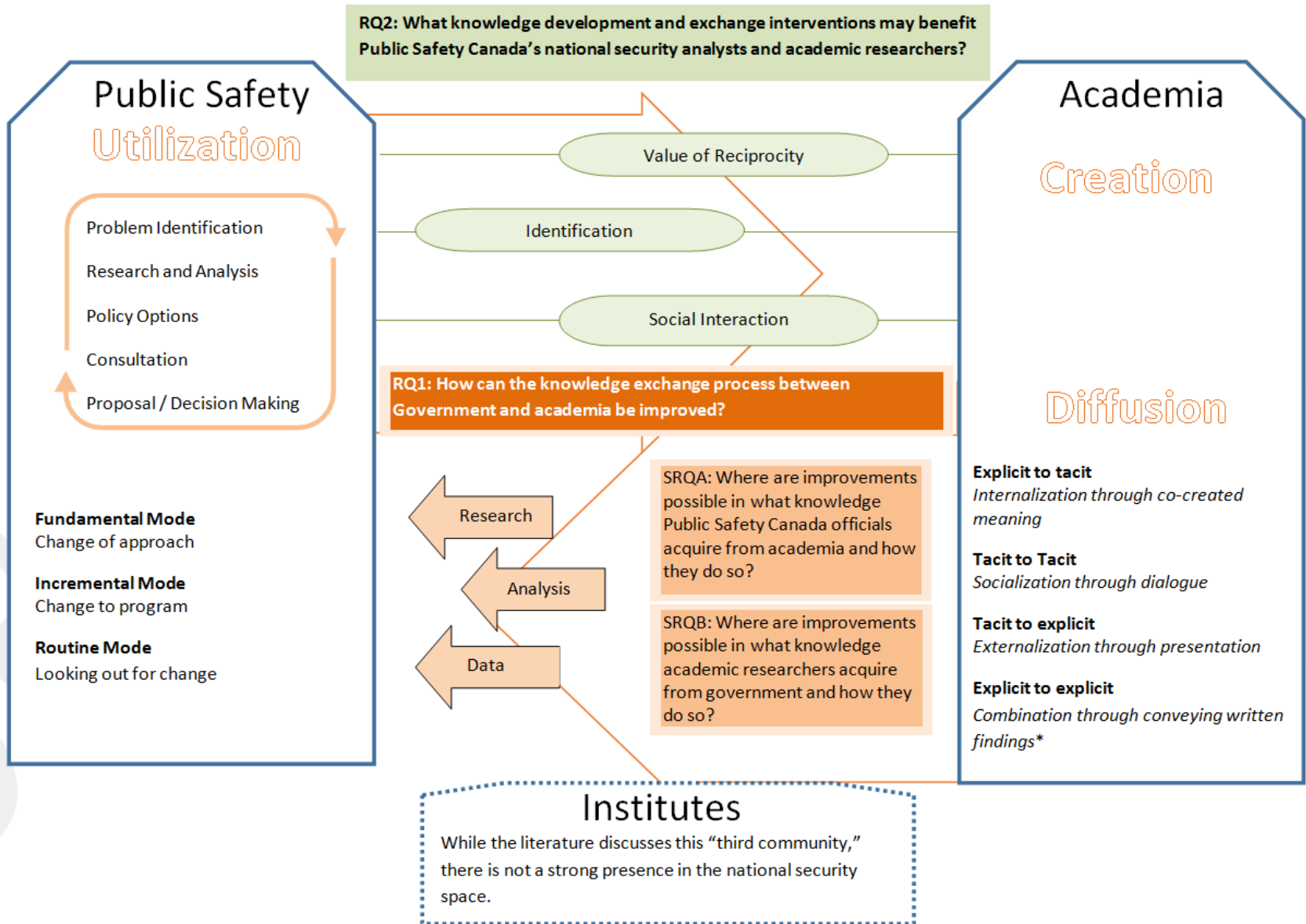


Figure 2 - Analytic Framework

METHODOLOGY AND METHODS

The objective of this project is to determine what type of administrative interventions may be appropriate and effective in improving public policy practitioners' access and use of academic research in the field of national security. This section overviews the methods used to achieve that goal.

Research Questions and Broad Methodological Approaches

This study adopted a two-stage process, using different methods to sequentially address the primary research questions. The first was a survey, followed by a jurisdictional scan.

Research Question 1: How can the knowledge transfer and exchange process between Public Safety Canada and academia on national security issues be improved?

- *Sub-Research Question A:* Where are improvements possible in what knowledge SIPAs acquire from academia and how they do so?
- *Sub-Research Question B:* Where are improvements possible in what knowledge academic researchers acquire from Public Safety Canada and how they do so?

As a first look into this issue at Public Safety Canada, and with little research that looks into knowledge sharing from the perspective of the Canadian government, it is important to “cover the waterfront” of the issue. It would be impossible, for example, to conduct key informant interviews since it was not known who was affected by the issue or in what way.

For this reason, a survey was chosen as the primary data collection method. The survey included both quantitative and qualitative questions. Quantitative questions ensured that answers could be compared. Qualitative questions provided opportunities for respondents to provide additional insights.

Research Question 2: What knowledge development and exchange interventions may benefit Public Safety Canada's national security analysts and academic national security researchers?

After the survey determined potential areas for action, the next step was to review what has been done in other jurisdictions to address these issues with a jurisdictional scan. A jurisdictional scan identifies the practices of other governments to inform potential action in each jurisdiction.

Part of the jurisdictional scan consisted of seeking information on the success of the programs and activities, where such information exists. To do so, evaluation results were obtained for Government of Canada programs and activities. Academic literature referencing the captured programs and activities was also reviewed.

Surveys of Officials and Researchers

Survey of Public Safety Canada Policy Practitioners

The University of Victoria's online survey platform FluidSurveys, was used to collect data from SIPAs at Public Safety Canada. The survey population was selected relying on two criteria. First, participants had to be working on national security issues. This was ensured by including officials within the National and Cyber Security Branch. Second, participants had to have experience with the policy process. To ensure that participants have a role in the entire policy development process, rather than being delegated a role for just part of that process, officials were invited to participate from the Economics and Social Sciences Services (EC) group at the 06 (Senior Policy Advisor) and 07 (Manager) level and the executive (EX) group at all levels within the Branch, including the 01 (Director), 02 (Senior Director), 03 (Director General), and 05 (Senior Assistant Deputy Minister) level.

To ensure maximum participation, the questionnaire (attached as Appendix A) was kept brief, with questions limited to three areas:

1. when in the policy process to engage academics.
2. how researcher knowledge is engaged in the policy development process; and,
3. barriers to accessing research for policy making purposes; and,

For the second two areas of questioning, the questionnaire (attached at Appendix A) provides examples of research use and barriers and asks respondents to identify those that apply to them. To inform the potential responses, potential responses and questions were drawn from the literature. In particular, Avey and Desch's (2011) Policymaker Survey was relied upon for this portion of the survey. As part of the Carnegie Policy Relevance Project, Avey and Desch explore similar questions in the United States.

However, no previous research was found that applied knowledge transfer to the policy process. Thus, the researcher developed his own questions for the first part of the survey. Two questions were asked, one about current use of research in the policy process and another on the ideal use of research in the policy process. This allowed for the answers to be compared to identify where improvements could be made. Participants responded using a Likert scale, where 1 means that the respondents' counterpart's knowledge is used at that stage "not at all" and 5 means "to a great extent."

This operationalization was chosen in order to obtain insight on current practice and, indirectly, where improvements could be made. However, the findings on improvements must be interpreted in a manner similar to reviewing an unemployment rate or vacancy rate: a healthy process always suggests room for improvement, since not all government or academic information is used. If current usage matches ideal usage, then it suggests the process is running at maximum capacity. Thus, while the approach to the question is quantitative, the interpretation requires qualitative judgement by the researcher.

For quantitative questions, Likert Scales were employed to transform abstract concepts into comparable results. These, and other questions were compared using simple measures

of central tendency (means). Where there was several write-in responses, these were coded and themes identified. Where respondents were asked to select from provided responses, the potential responses are mutually exclusive and exhaustive, including through the use of write-in “other” options.

Survey of Academic National Security Researchers

As with the survey of Public Safety Canada policy practitioners, an online-based survey was used to collect information from academic national security researchers. The affiliate database of the Canadian Network for Research on Terrorism, Security and Society was used as the study population, with a census approach (all affiliates with a PhD will receive an e-mail invitation). The questions (see Appendix B) were similar to those posed to Public Safety Canada SIPAs, but focused on how they gained information from government:

- how they access government information currently;
- how that information is used in the research process;
- ideally, how would government information be used in the research process; and,
- barriers to accessing government information for such purposes.

A similar analysis process to that used for public policy practitioners was used for survey results from academic researchers.

Translations of both survey instruments were produced by the Government of Canada’s Translation Bureau. Before deployment, both survey instruments were beta-tested by at least three individuals with experience in the fields, with at least one person testing each language. Minor modifications were made to ensure consistent interpretation of the questions.

Limitations of the Surveys

It is not possible to know whether the responses to the survey are representative of all views of the target population. As the survey solicits the input from the client organization’s employees on how they perform their duties, ethical considerations required that the survey be conducted in an anonymous manner. The survey was distributed via e-mail, and individual’s interactions with that e-mail and the survey platform were not tracked and neither was any information which could be used to identify employees collected within the questions. Since the study population was small, this precluded the inclusion of questions that, through comparison to the population, would help ensure a representative sample (i.e., ensuring responses reflect all teams, levels, and demographics).

The other major limitation of this method is a response bias. It is likely that not all individuals in the survey frame have an equal probability of responding. In particular, it can be expected that those who do not find the title relevant to their work or interests are less likely to participate. While topic interest as a source of non-response error is difficult to study, since it requires operationalizing topic interest without asking the participant about

their interest, Zillman, Schmitz, Skopek, & Blossfeld (2013) suggest topic can have an effect on response rate. Exploiting the large amount of information that online methods collect on non-respondents to determine if there is indeed a trend concerning who does not respond, and if so, leading to a bias in the survey. However, as mentioned, all forms of tracking and identification normally open to online surveyors were deactivated for this anonymous study.

It can be predicted that, for this survey instrument, officials who do not use academic research are less likely to respond and academics who do not use government information are less likely to respond. Unfortunately, these are also individuals that may be able to identify important barriers. Further, researchers who identify their current work as national security related are more likely to participate than those whose work *could* be national security-related, but do not identify it as such because they are unaware of its potential relevance. As a result of these two biases, the survey findings could point to a higher usage of government and academic knowledge and a higher interest in using government and academic knowledge than is really the case.

While the effect of the non-response error can be predicted, this likely error, as well as the lack of ability to ensure a representative sample, prevents the use of inferential statistics. Inferential operations are necessary to estimate whether the differences that the survey results reveal amongst the survey participants (the sample) are also present in the larger group of policy officials and academics (the population). As a result, this project is restricted to making findings informed by the sample.

Jurisdictional Scan

A jurisdictional scan identified models of intervening in the knowledge transfer process to enhance utilization of knowledge by public policy makers and academic researchers. The goal was to identify potential models that could meet the challenges identified through the survey and fit with the organizational context of Public Safety Canada.

The jurisdictions in the scan included both the Government of Canada and its allies. Given similarities in the national contexts, values, and approaches to policy making, the scan reviewed the other members of the Five Eyes intelligence alliance (Australia, New Zealand, the United Kingdom, and the United States). To conduct the scan, the researcher visited the web sites of relevant institutions and searched to identify any programming relevant to the project. Where available, academic writing on the models identified was also reviewed.

To maintain a feasible scope, the scan focused on the areas of national security, defence, and intelligence policy. Since the goal was on how to influence policy development, rather than operational practices, the focus was on the transfer of knowledge rather than technologies.

Limitations

Given that the jurisdictional scan was conducted mainly by reviewing the public websites of the governments, it is limited to the information that these departments and agencies chose to place online and likely does not represent a complete set of practices. In addition, as someone unfamiliar with the details of all of the governments structures, it is possible that relevant institutions were not reviewed.

Conclusion: Strengths, Limitations of Overall Approach

This project represents an initial inquiry into the issue of information exchange between security and intelligence policy analysts and academic researchers. The methodological approach is intended to “cover the waterfront,” by reviewing the general issues of the exchange process and surveying the approaches used elsewhere. From those findings, general frameworks for supporting the exchange process can be suggested.

As a project, its weakness is in that it does not provide the detailed findings that will generate an understanding of the motivations, perceptions, and challenges that these actors experience in working with their counterparts. It can, however, set up a framework for future work, and future study, in this area by identifying the general areas that study and support should focus on. In particular, it can identify where in the policy process improvements are possible.

FINDINGS FROM THE SURVEYS

This section reviews the key findings identified in the survey results. In particular, it identifies what the survey responses indicate about *when* to engage in knowledge sharing, *how* to engage in knowledge sharing, and what barriers are preventing such engagement. First, results from the survey of academic researchers are presented, then the results from the survey of SIPA at Public Safety Canada.

Survey of Academic Researchers

On November 8, 2017 the researcher e-mailed the academic population with an invitation to participate. This was followed by reminders on November 23, 2017 and December 5, 2017. In total, 10 academic researchers completed the survey, all in English, representing a 10.1% response rate.

When is government information used

The first part of the survey asked academic researchers the extent they use government information as part of the research process. In the second part of the survey, the same questions were asked as the first part, but for an “ideal” scenario. A Likert scale was used for both sets of questions, with 5 representing “to a great extent” and 1 representing “not at all.” By comparing the results from current and ideal, it was possible to see patterns of use currently and where there was most room for improvement to get closer to an “ideal world.”

When looking at where in the research process researchers use, currently and ideally, government information, two peaks in the measures of central tendency stand out. First, a relatively high mean in reported use of government information is found at the first stage, the identification of problems and issues. The importance of this step was also reflected in a number of write-in responses by participants. 30% of respondents voluntarily added that they use government information to identify policy issues, priorities, and areas of concerns. Second, researchers reported a relatively high mean for using government information as part of data analysis. When asked about government information use during these two stages in an ideal world, the peaks persisted, with the highest option on the scale (i.e., 5) being the most common response.

In terms of where the use of government information could be improved, respondents saw limited need for improvement. They identified a slim 5% gap between current and ideal engagement at the initial stage of issue identification, rising to a 10% gap at the methodology design and data analysis stages.

Table 2 - Measures of central tendency for researchers use of government information during research process

STAGE	CURRENT		-	IDEAL		=	GAP	
	MEAN	MODE		MEAN	MODE		MEANS	MODES
Problem/issue identification	3.4	2		3.6	5		-0.2	-3
Methodology design	1.8	1		2.4	2		-0.6	-1
Data analysis	3.4	4		4.0	5		-0.6	-1
Proposal/decision making	3.0	3		3.5	3		-0.5	0

Derived from Likert Scale-based question on use of government information at each stage of research process with a relation to policy, with 1 representing “not at all” and 5 representing “to a great extent.”

How to engage government officials

A second set of questions in the survey provided some insight into how researchers could collaborate at the points of knowledge transfer identified above. In particular, the second part of the survey asked researchers about the role their government counterparts could play as part of research processes.

As shown in Figure 3 below, academic respondents had limited responses supportive of room for policy makers to play a new or expanded role in research. While 60% of respondents ideally saw a role for officials as informal advisors, 50% already see officials filling that role. Similarly, 50% of respondents saw a role for officials as formal participants on research teams, a 30% increase from respondents who reported that role currently occurs on their teams.

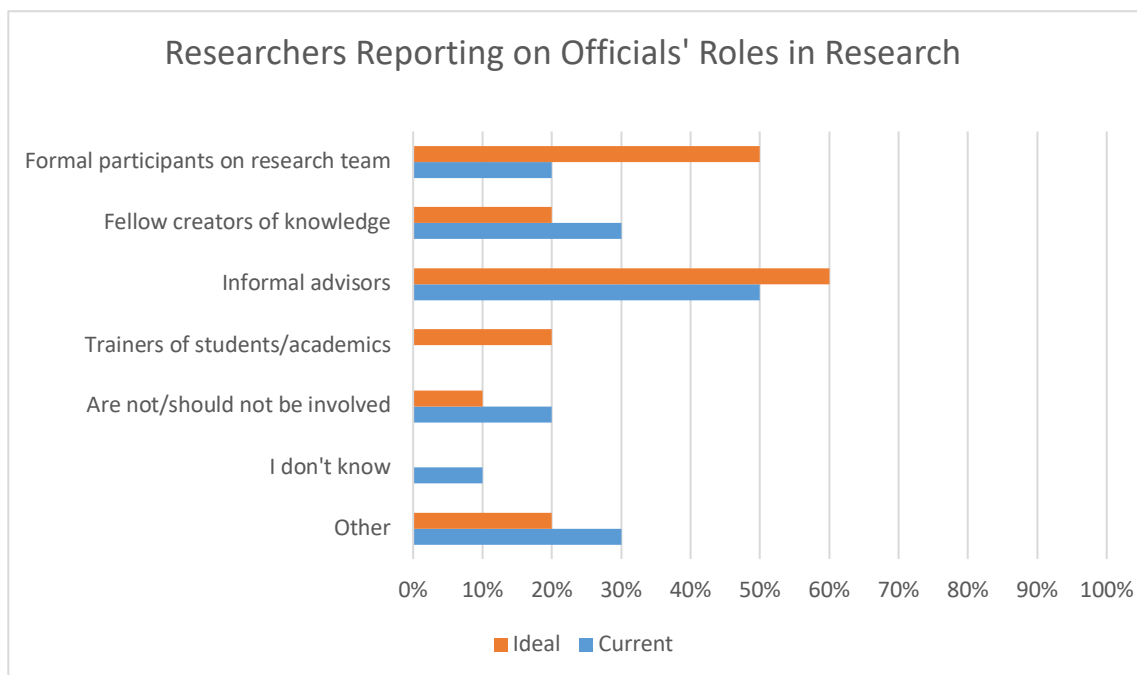


Figure 3 - Percentage of researchers reporting officials currently and ideally play certain roles in research

Barriers to engaging government officials

The final section of the survey asked academic researcher respondents about the barriers to using government information. Respondents were asked to identify factors that “hinder” access (makes it difficult) and “prevent” access (makes it impossible).

Academic researchers responding to the survey clearly pointed to two barriers to using government information, as can be seen in Figure 4. Both relate to the information not existing, either at all or in an accessible place. One write-in comment suggests a perception that the work’s security classification is preventing its release. It is interesting that such a high proportion of respondents responded that the barrier “relevant government information doesn’t exist” *hindered* their use of government information. Since they report it as a hindrance, rather than a barrier preventing use altogether, it suggests that somehow government information is being applied, perhaps by drawing inferences or conclusions from less relevant information.

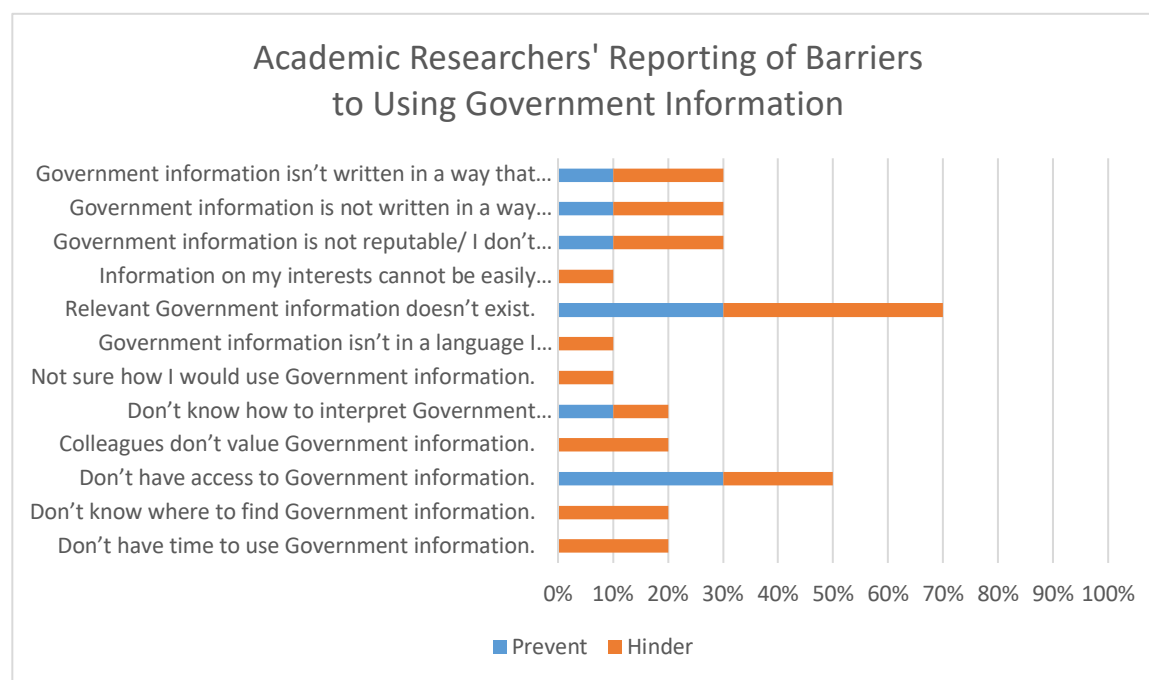


Figure 4 - Percentage of researchers identifying various barriers to using government information

Survey of Public Safety Canada SIPAs

On November 10, 2017, the client e-mailed the Public Safety Canada population with an invitation to participate. This was followed by reminders on November 23, 2017 and December 5, 2017. Over this time, 21 SIPA from Public Safety Canada completed the survey, 19 in English and 2 in French, representing a 54% response rate.

When is academic information used

Similar to the survey of academic researchers, the first part of the survey asked SIPAs about the extent they use academic research as part of the policy formation process. In the

second part of the survey, the same questions were asked but for an “ideal” scenario. The same Likert scale was used as with academic researchers, with 5 representing “to a great extent” and 1 representing “not at all.” The results, and the resulting gap between current and ideal questions, are shown for policy official respondents in Table 3 below.

Both currently and ideally, the highest mean of SIPAs’ responses was for the research/analysis stage. The mean results decreased, for both current and ideal scenarios for the development of policy options. However, means results were somewhat higher than for the stage when those policy options are consulted on with stakeholders. When speaking to the ideal situation, it was most common for respondents to rate this consultation stage as where research should be used “to a great extent.”

Table 3 - Measures of central tendency for officials' use of research during policy process

STAGE	CURRENT		-	IDEAL		=	GAP	
	MEAN	MODE		MEAN	MODE		MEANS	MODES
Problem/issue identification	3.0	4		3.6	4		-0.6	0
Research/analysis	3.5	4		4.3	4		-0.8	0
Development of options	2.7	4		3.5	4		-0.8	0
Consultation	2.9	3		3.9	5		-1.0	-2
Proposal/decision making	2.5	1		3.3	4		-0.8	-3
Derived from Likert Scale-based question on use of research at each stage of policy process, with 1 representing “not at all” and 5 representing “to a great extent.”								

The responses also provided insight into where improvements are most needed to move the knowledge transfer process closer to ideal. As the questions moved on through the stages of research and development of options, SIPA respondents generally reported an increasing gap between the difference in means for current practice and ideal, exempting the final stage of proposal/decision-making. SIPA responses showed a 13% gap in engagement at the problem identification stage and increasing to a gap of 21% at the stage where potential options are consulted on.

How to engage academic researchers

The second set of questions in the survey provided some insight into how officials could collaborate with academic counterparts at the points of knowledge transfer identified above. Similar to the survey of academic researchers, the second part of the survey asked officials about the role their academic researchers could play as part of policy processes.

SIPAs’ responses (provided in Figure 5, below) to this section aligned with the two moments of knowledge transfer from academia to government identified above. In line with providing information into the analysis stage of policy development, over 90% of officials saw researchers having a role as “creators of knowledge.” In line with collaborating as part of the consultation on potential options, over 80% of officials saw researchers having a role as “informal advisors.”

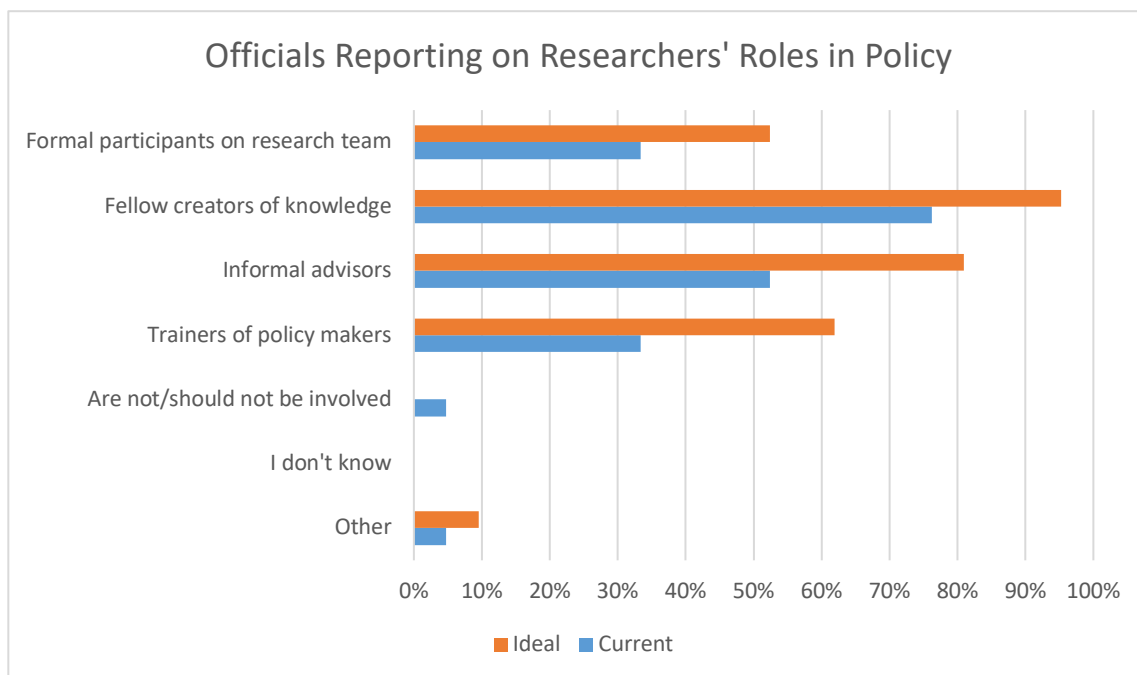


Figure 5 - Percentage of officials reporting researchers currently and ideally play certain roles in policy development.

Officials also highlighted two additional roles for researchers in addition to the roles of “creators of knowledge” and “informal advisors.” A majority of policy practitioner participants also saw researchers having a role as “trainers of policy makers” and “formal participants on research teams.” Interestingly, while 62% of officials respondents saw researchers having a training role in an ideal scenario, only 33% of officials saw them currently having that role.

Barriers to using academic researchers

The last section looked at barriers to filling these roles. Specifically, as shown in Figure 6 below, the three most commonly cited barriers point to internal issues. Over 80% of Government officials cited “not enough time” as a reason for not using academic research. Nearly 60% indicated that they don’t have access to academic research and another 57% don’t know where to find it.

The second grouping of barriers, identified by 52% of officials, is related to problems with applying research to policy development, either because of how the research is written or otherwise. 38% also indicated that “relevant research doesn’t exist.”

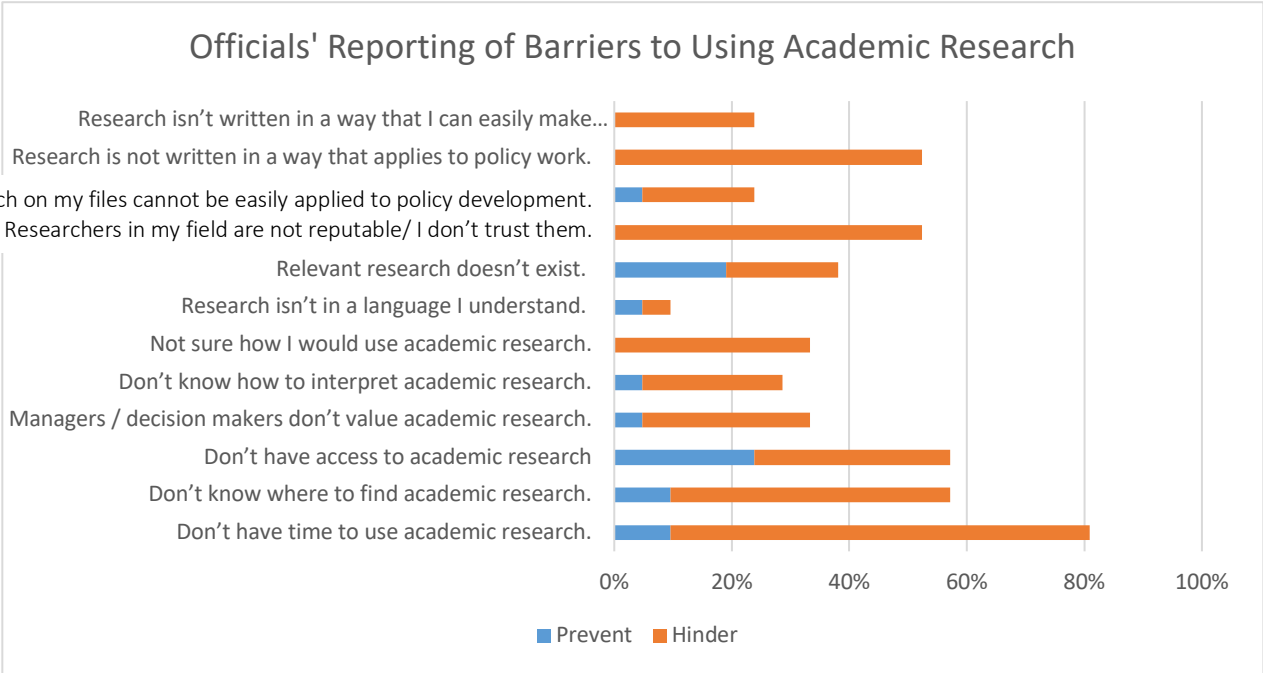


Figure 6 – Percentage of officials identifying various barriers to using academic research

Conclusion

The survey of Public Safety Canada SIPA and academic national security researchers provides insight into when knowledge is potentially shared between the two groups of participants, how they would share that knowledge, and what is preventing such sharing today. It shows the responding policy officials saw current engagement being substantially less than ideal, particularly later in the policy process. They reported looking to researchers to be creators of knowledge, informal advisors, and trainers, but, especially for the latter two roles, did not report academics participating ideally in those capacities. For their part, responding academics cited a lack of access to the information they need.

JURISDICTIONAL SCAN FINDINGS

For this jurisdictional scan the websites of national security-mandated departments and agencies to identify approaches to facilitating knowledge transfer between academia and policy makers. The search was limited to the Canadian government, as well as allies that share Canada's values and security approach. Specifically, this included the members of the Five Eyes (i.e., Australia, New Zealand, the United Kingdom, and the United States).

As this report is prepared for a group concerned with the creation of public policies, the search was limited to the transfer of scientific and social scientific knowledge, rather than technologies or other capabilities. In addition, the focus was on the transfer of knowledge, rather than the creation of knowledge. While many governments engage in activities that commission the creation of knowledge, these were beyond the scope of the scan.

This report section searches for approaches that either aim to:

- move knowledge already being created so it may reach government and be useful to government; or
- draw out knowledge that already exists by demonstrating government interest in it.

The section below reviews the three major categories of such innovations found amongst the in-scope jurisdictions. These are: the integration of the approach into research agency mandates, the establishment of academic liaison groups, and targeted knowledge transfer grants to researchers.

Research Agency Mandates

In Australia, Canada, and the United Kingdom, the government research-funding agencies have undertaken approaches that encourage knowledge transfers to those in a position to influence society, including policy makers.

In **Australia and the United Kingdom**, academics seeking a grant from the research agencies must now complete a statement on how the research will have an impact on society. The impact itself may take different forms. For example, an impact may consist of changing the way academics think about a major issue. The UK's Economic and Social Research Council (ESRC) also lists influencing policy as a potential type of impact (ESRC, 2018). In fact, the ESRC provides academics with a guide to influencing public policy, including engaging with the media.

The impact statements are a source of controversy amongst academics. To some, to make a funding decision on the "impact" of research is anathema to the spirit of basic research and the academic identity. Critics cite classic examples of research, such as the invention of the laser, that had modest goals, but resulted in massive changes for society. The conflict with academic values has potentially undermined the granting councils' aim, as Chubb &

Watermeyer (2017) suggest that it is common for applicants to lie or mislead on the impact statements in order to secure funding.

The Australian and UK approaches stand in stark contrast to the approach in Canada. As of the time of writing, the federal government is conducting a Fundamental Science Review into how Canada's science granting agencies operate and is presently considering the report of an expert panel. The so-called "Naylor Report," named after Dr. David Naylor, the Chair of the panel, argues definitively that it is impossible to predict the impact of research, and thus research should be judged on its intrinsic quality alone (Naylor et al., 2017).

Instead of making knowledge transfer a component of all research grants, Canada has set up a separate funding stream dedicated to supporting knowledge transfer between researchers and stakeholders. The Social Sciences and Humanities Research Council's (SSHRC) **Connection Program** aims to enable the use of research beyond campus by supporting the exchange and flow of information. In addition to a Connection Grant funding stream for one-time events (workshops, colloquiums, conferences, etc.) there is also a stream for multi-year collaborations called Partnership Grants. Unlike grants for conducting research (Insight Program), which are considered by subject-matter specific committees, all applications for Connection and Partnership grants are heard by general committees. SSHRC has also funded specific thematic areas, such as resettlement of Syrian refugees. A review of the website shows no themes funded over the last three years related to security issues.

The National Science and Engineering Research Council (NSERC) also has a stream of programming aimed at transferring knowledge from academia, called **Innovate**, but it is focused on transferring knowledge to the private sector. While the growing influence of SSHRC, NSERC and the granting councils has been discussed by academics (Polster, 2007) none have discussed the Connection or Innovate grants specifically.

As part of the jurisdictional scan, the researcher reviewed the most recent awards under the Connection Program. In 2017-18, no Connection grants were security related and the Government of Canada was identified as a collaborator in only one application. In 2016 (the most recent cycle), no Partnership grants were security related, though the Government of Canada was marginally better represented.

Dedicated Research Liaison Groups

The online review of national security institutions has identified instances where a team is dedicated to liaising with academics and integrating their work into an agency's processes.

The **Canadian Security Intelligence Service** has an Academic Outreach team which engages with academic researchers. The program aims to "to develop a long-term view of various trends and problems, to challenge our own assumptions and cultural bias, as well as to sharpen our research and analytical capacities" (CSIS, 2016). It primarily does this through holding events, such as seminars and conferences. The papers presented at a

number of these conferences are made available on CSIS' website. No academic research was found on CSIS' Academic Outreach Program. While a request for records related to evaluations and audits of the Program was made under the *Access to Information Act*, CSIS reported no such records exist.

The United States **Director of National Intelligence's National Intelligence Council** (NIC) is the group responsible for providing a longer-term vision to the Director and bridging the gap between intelligence and policy makers. As part of this work, the NIC identifies amongst its core mission areas "[tapping] into non-[US Government] experts in academia and the private sector to broaden the [Intelligence Community's] knowledge and perspectives" (ODNI, n.d.). In particular, every four years, to coincide with the election of a new President, the NIC prepares a "Global Trends" report. The most recent Global Trends report is the culmination of an expansive, two-year exercise which included visits to 36 countries and interviews or engagements with over 2,500 persons, including academic experts. Like CSIS' Academic Outreach program, the NIC also publishes the results of unclassified conferences online. While there is no academic discussion of the Global Trends report, there is evidence of its use amongst academic researchers. According to Google Scholar, the 2008 and 2012 versions of the report are being cited in academic work on average at least 16 times per year since their release. A search of these citations does not reveal any discussions focused on the reports themselves. Rather, likely as intended, the reports are used as part of the authors' discussion on related subjects.

The **Tutte Institute for Mathematics and Computing** is a group within the Communications Security Establishment which conducts classified research into cryptology and data mining. The recruitment is aimed at academics studying those fields, who are asked to come work at the Tutte for a classified project during a period of time (one week to multiple years; full-time or part-time). The compensation is targeted at university academics, who are given the option of coming during their sabbatical and having their compensation provided in the form of a research grant for use at their home institution. There is no academic writing on the Tutte Institute.

In 2017, an independent reviewer completed an assessment of Australia's intelligence community (the "2017 Independent Intelligence Review"). As part of that assessment, the reviewers determined that "Australian intelligence interests generally would benefit significantly if [stakeholder] engagement was more systematic and better coordinated" (Commonwealth of Australia, 2017a). To that end, they recommended the creation of a **National Intelligence Community Innovation Hub** to facilitate ways in which government, industry and academia could come together to discuss capability needs and solutions and to create new linkages." They use an annual conference as an example of what could be a flagship initiative of the new Hub. The Reviewers suggest the Hub would be housed within a proposed Office of National Intelligence. While it is unclear whether the proposed Hub will be established, the Australian Government has committed to moving forward with creating the Office of National Intelligence (Commonwealth of Australia, 2017b). As a new initiative, there is no academic writing on the proposed Hub.

Targeted Funding to Researchers

The final group of initiatives consist of targeted funding by Canadian government departments to transfer knowledge. In particular, the Department of National Defence and Public Safety Canada have programs to make targeted transfers to academia to support transmission of research in support of their policy processes.

The Department of National Defence's program aims to transfer knowledge already in existence to the Department. The **Defence Engagement Program** provides funding for events and publications that will inform "current and future defence policy thinking" in the Canadian context (DND, 2017). The program also provides "expert briefings" to defence policy personnel. In a 2014-15 evaluation, defence policy personnel reported that "the Expert Briefing Series has contributed directly to the general professional knowledge of departmental staff" (DND, 2016). In particular, employees reported that engagement on Russia and Syria "has informed and shaped departmental thinking up to senior levels." As a condition of funding, defence personnel must be permitted to attend the event.

In 2015-16, 31 events were funded with a total disbursement of around \$500,000. Funded events include both technological aspects of defence (e.g., automation) as well as more general issues, such as defence policy trends (DND, 2017).

Global Affairs Canada's International Security Research and Outreach Programme supports research that informs and supports Global Affairs Canada in developing Canada's international security policy. It does this through funding the development of research reports, which are then made available to GAC staff and through convening "Fast Talks," short, discussions on emerging issues. There has been no evaluation of the program and it is unclear whether the program is still active. The researcher's e-mails to the program have not been returned.

Public Safety Canada's **Policy Development Contribution Program** has a budget of \$362,000 (Public Safety Canada, 2016). Like DND's program, it funds communication and information exchange, but its broad mandate also includes funding of research and training/skills development. Unlike DND's program, PS's is not targeted at assisting the Department. The training and skills development, for example, could be for community organizations that contribute to enhanced public safety or national security. For instance, the Department provided \$7,500 to the Canadian Police Association to support the association in holding their executive meeting, which mainly conducted the Association's business (Public Safety Canada, 2016). No Public Safety Canada officials are reported to attend. The program is in demand, with \$6M in requests being received in 2015-16, the year an internal evaluation was conducted. However, over the past three years, only one contribution has been made related to the National and Cyber Security Branch, representing 3% of funded projects and 7% of funding allocated.

Conclusion

The jurisdictional scan identified three main categories of government intervention in the policymaker-academic researcher relationship, which are summarized below in Table 4 . Through the research granting agencies, targeted outreach teams, and funding for engagement, governments seek to enable the acquisition of knowledge from academic researchers. While the information on these programs is limited, it nonetheless provides insight into the general types of approach that could be considered by Public Safety Canada in improving the knowledge transfer process.

Table 4 - Summary of approaches from jurisdictional scan

Approach	Research Agency	Liaison Groups	Targeted Funding
Countries	Canada, Australia, UK	Canada, US, Australia	Canada
Programs	<ul style="list-style-type: none"> • Requirement for “impact statement” • Dedicated grants for knowledge transfer 	<ul style="list-style-type: none"> • Outreach program • Regular engagement process for major report • Integrated institute 	<ul style="list-style-type: none"> • Funding for events and research reports

DISCUSSION AND ANALYSIS

This section brings together the findings from the jurisdictional scan and survey, within the context provided by the literature review, to refine the conceptual model. In doing so, it identifies potential points of intervention where Public Safety Canada could consider making changes to enhance the knowledge transfer process between SIPAs and academic researchers. While the subsequent section discusses what form these interventions could take, this section focuses on identifying the *outcomes* that would shape a closer to ideal knowledge sharing relationship.

The stark difference in response rate between SIPA and academic researchers represents the first finding of the research. The response of SIPA roughly aligns with the average response rate for organizational research identified in a review conducted by Baruch and Holtom (2008). However, the response rate of academic researchers lags far behind.

Summary of Findings

Literature Review

The literature review provides two sets of findings that are helpful for interpreting the results of the jurisdictional scan and survey. First, it suggests operationalizing knowledge in terms of explicit knowledge and tacit knowledge. While both types of knowledge are useful, tacit knowledge is what is necessary for action. This type of knowledge is transferred face-to-face, since a common perspective is key to successfully conveying meaning. The process of sharing tacit knowledge can be referred to as “socialization” and is highly dependent on creating an environment conducive to sharing.

While tacit knowledge transfer takes place within strong social networks, the literature has recognized significant barriers to this taking place between officials and academics. In fact, public administration literature has debated a “two communities” theory which sees academics and policy officials existing in separate structures of values, norms, and priorities. Separate research has shown that interventions which enhance the feeling of community have been effective in facilitating knowledge sharing.

Survey

The first interesting point of analysis in the survey results is the difference in response rates between academic researchers (10%) and SIPAs Public Safety (54%). It is unlikely that intervening factors would explain the low response rate for academic researchers: the database belongs to an active network which has held meetings recently; the group is composed specifically of researchers interested in national security questions in Canada; and, as TSAS has always had a connection to Public Safety Canada, it is unlikely that researchers were disinclined to participate because of the client of the study. We are left with conclusions related to a lack of general interest in the sharing of knowledge with

Public Safety Canada, either because academics perceive little benefit from the relationship or because they perceive little potential for change in the relationship.

Nonetheless, in reviewing officials and academics' respective responses together, indications of a relationship do emerge. The survey results point to three points in the policy process where SIPAs and academics especially see potential engagement as part of the policy development process:

1. One-way communication from government to researchers to inform them of the issues and problems the government is facing.
2. Collaboration as part of the SIPAs' analysis of those problems, including to assist academics in interpreting their results and to transmit those results to government.
3. Collaboration as part of Public Safety Canada's consultation on potential options.

Earlier in the process, researchers and policy makers' mean ratings of current usage and ideal usage are closer together, suggesting greater take up of current opportunities for this type of use and engagement. This emphasizes the importance of the first exchange of information, which must be done well to enable relevant knowledge transfer at later stages.

SIPAs saw academics participating at these three points as independent creators of knowledge and informal advisors. SIPAs reported there was the most room for improvement in the number of researchers filling the roles of informal advisor and trainer. Researchers, on the other hand, were less interested in policy officials playing a greater role in their research, except for some increase as formal participants on research teams.

For academics, there is a basic barrier to the knowledge transfer process in that they perceive that the information they need does not exist. This could perhaps explain why direct involvement of policy officials on the research team is described as ideal. While relevant information may not be officially released in written form, SIPAs can help convey the appropriate implications directly as part of the research process.

For SIPAs, most of their barriers are internal in nature: officials don't have enough time to engage with academics, don't believe they have access to research, and wouldn't know where to find it if they did. These findings echo those discussed in the literature review. As discussed in Malange (2017) and found in the United States through Avey and Desch's research (2011), time and other internal factors play a large role in determining how research is utilized within organizations. As Malange notes, officials have perceived this barrier even where resources actually exist. This could be the case at Public Safety Canada, as the department does have a library, which collaborates in inter-library networks, facilitating access to a large breadth of scholarly work. In any case, this group of findings suggests that efforts to support research utilization will need to also align internal incentives and processes in addition to enabling more efficient knowledge transfer.

Another commonly cited group of barriers was those related to SIPAs' difficulties in applying research to policy development, either because of how the research was written or its relevance. The lack of applicable and relevant research is potentially an echo of the first finding discussed in this section. As was discussed above, the results suggest

respondents see room to improve how Public Safety Canada communicates on the emerging issues it is facing and brings researchers into that conversation. Without that first step, academics and officials could be at risk of proceeding down separate lines of inquiry, making each other's work irrelevant and inapplicable to their counterparts.

Jurisdictional Scan

The jurisdictional scan identified three different areas where governments have established interventions in the academic research process to provide knowledge to the public service.

First, Australia and the United Kingdom have made the transmission of knowledge to users a key component of funding applications to research grant agencies. This has been a source of significant controversy and seen as a derogation of the academic identity. Canada's approach is somewhat different. SSHRC and NSERC have developed separate funding streams specific to the knowledge transmission phase, where the agencies fund knowledge sharing initiatives specifically. However, NSERC's funding is focused on providing information to the private sector and there is little uptake of security issues in SSHRC's Connections program.

Second, security agencies have created dedicated research liaison groups to engage with academics. In the case of CSE, this involves hiring academics to conduct research within CSE for a temporary period of time. Australia is planning to create an Intelligence Community Innovation Hub to centralize this work. The American National Intelligence Council coordinates engagement for the Intelligence Community, including through the preparation of a medium-term report on the global trends impacting security issues.

Third, Canadian security departments have developed grant programs to support activities which can provide knowledge for their departments' activities. DND's program focuses on organizing knowledge sharing events and publications. Public Safety Canada's Policy Development Contribution Program has a much broader mandate, as it supports knowledge exchange, research, and training targeted at any group engaged on the public safety issues, whether or not departmental officials are involved. There is also very little or no usage of this program by national security policy areas.

Cross-Cutting Themes from Findings

In reviewing the findings four themes emerge. These themes speak to who needs to act (Public Safety Canada), what area is action most important (issue identification), and what prevents that action (the type of involvement and internal barriers). This sub-section reviews those themes before summarizing them in a revised analytic framework.

Public Safety Canada will need to act

One of the most striking themes in the above research, is that action to improve the relationship between SIPA and communities of academic researchers will likely need to be

initiated by Public Safety Canada. The main barrier cited by researchers is the availability and relevance of government information. At the same time, roughly half of researchers saw a role for policy makers in their research, with many already see that role being filled. That suggests that, researchers are taking in all the available government information and are looking for more.

SIPAs' responses, meanwhile show space for more involvement of academic researchers. Indeed, officials have the most to gain from a well-running knowledge transfer process. As the jurisdictional scan showed in reviewing the UK experience emphasizing impact, while government places emphasis on "evidence based policy," academia sees impact on public policy as a secondary benefit to basic research.

Identification of issues by Public Safety Canada is particularly important

In comparing how both policy officials and academics use the others information, the only area where current use is close to ideal use is academic researchers' reports on use of government information to identify research issues. Rather than suggesting that this step in the research process is working ideally, it speaks to the importance of this information from government and suggest that all of the information released is being put to ideal use, that is, that there are no missed opportunities.

When academic researchers identify barriers to using government information—an essential step to making policy-relevant findings—those barriers are within Public Safety Canada's control. Academic researchers report simply not having access to government information and the information they do have access to is not useful.

A look at the information released by Public Safety Canada could explain some of academic researchers' concerns. The only regular report on the national security environment is focused exclusively on terrorism, leaving out other national security concerns such as weapons proliferation or cyber security. While the Public Report on the Terrorist Threat to Canada confirms that extremist travelers are the greatest threat to Canada, it only provides two data points on that threat (the number of travelers who have left and who have returned), frustrating academics (e.g., Forcese & Carvin, 2017).

Of course, detailed information on extremist travelers is valuable. As a manifested threat, Canada's intelligence and security resources are being brought to bear on the activity. Rather than expect detailed information on current threats, it may be more promising to pursue identification of medium-term issues. If the year was 2011 and the Syrian Civil War was just beginning, it would be much easier to discuss the potential risks of the conflict to Canada's security and what may motivate individuals to travel overseas. Once the trend manifests, however, and the government begins learning about the risks and motivations of travellers, it is much more difficult to engage in knowledge sharing, especially in the frank, open manner the literature suggests is required.

Internal barriers prevent SIPAs from accessing research

The engagement process also breaks down in Public Safety Canada's second step in the revised conceptual model. SIPAs are not using academic information to develop policies or engage with their academic counterparts.

The first notable indicators of this theme are in the barriers identified by Public Safety Canada officials. Many of the most major barriers speak to internal affairs. Consistent with other empirical research on government's use of research SIPA report they don't have the time to use research (e.g., Avey & Desch, 2011), don't know where to find it or don't believe they have access to it (e.g., Malange, 2017). Given that Public Safety Canada does have a departmental library, these barriers represent places where Departmental leadership could make a difference by signaling the importance of academic research and ensuring employees are informed of the resources.

Academics are not participating in policy making as SIPAs want them to

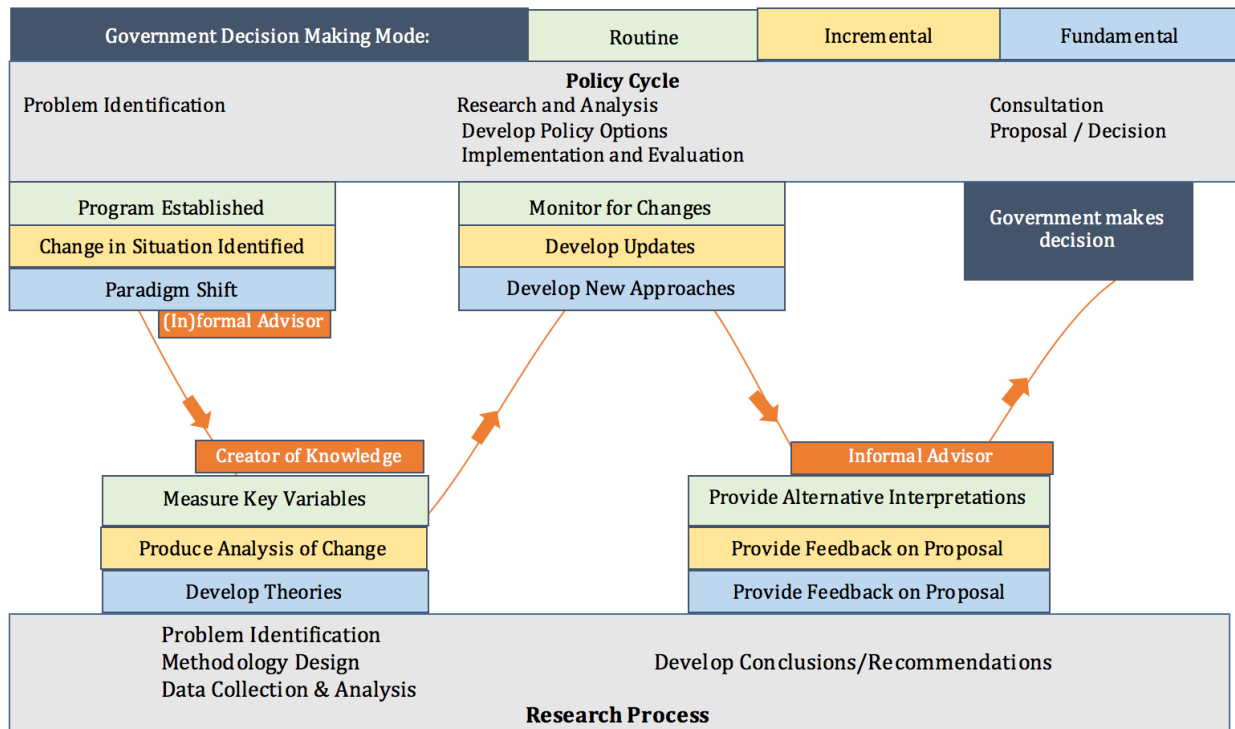
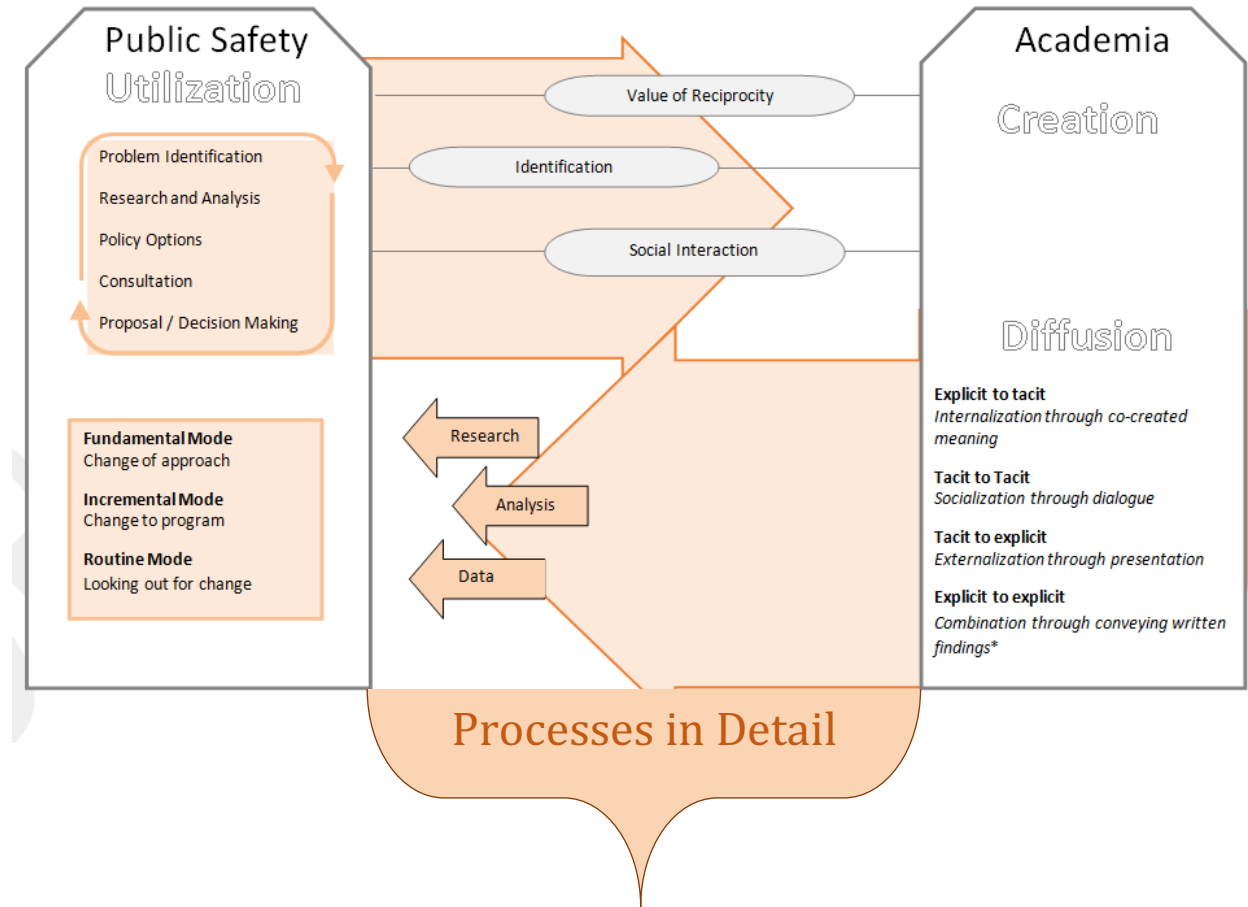
A majority of public policy official respondents see academic researchers playing four roles in the public policy process. However, there are large gaps between what role academic researchers currently play and the roles SIPAs would like them to play. Academic researcher respondents are less enthusiastic about public policy officials' roles in their process, and more likely to see it as closer to ideal. This suggests that policy officials will need to be the ones to reach out to academia, as an invitation from academia to begin a collaborative relationship is less likely. Perhaps this is why CSIS, DND, and CSE efforts all entail bringing people together in face to face venues. CSIS and DND's efforts centered around events, while CSE temporarily hires academics to conduct research within its offices

Without the ability to access explicit knowledge and without the relationships to transfer tacit knowledge, officials have limited means of using academic information when looking to understand an issue.

Revised Analytic Framework & Conclusion

Initially, the knowledge sharing process was conceived at a general level, with no temporal element for when knowledge sharing would take place. As a result of the research, it now possible to more precisely identify when knowledge would move between government and academia and transcribe it over the policy process. In Figure 7, the process components of the analytic framework are examined in detail in light of the findings.

Figure 7 - Revised Analytic Framework



From the perspective of Public Safety Canada, the revised analytic framework identifies three main knowledge sharing exchanges.

1. Public Safety Canada identifies issues to academic researchers.
2. Academic researchers engage with SIPA on the relevant research to that issue.
3. SIPA consults with researchers on potential policy interventions.

Viewing the policy process and the knowledge transfer as tied together, provides implications for how improvements may be pursued. In particular, the fact that the same officials responsible for policy will also bear some responsibility for conducting this engagement is important. The model recognizes that, before knowledge is integrated into decisions, there are two preliminary steps by SIPA and two by researchers to develop the required knowledge and input it into the policy development process.

What the specific form of these engagements will look like will depend on what Public Safety Canada is trying to achieve. Specifically, the expanded section of the analytic framework identifies three different modes, as discussed in Lindquist (1988):

- routine decision making mode, where it is maintaining programs by monitoring for changes in the environment;
- incremental decision making mode, where it is looking to update programs by seeking refined analyses and comparisons;
- fundamental decision making mode, where it is making a foundational update to how it approaches key questions of national security.

The findings suggest that, if Public Safety Canada wants to change the relationship policy analysts have with academic researchers, the Department will need to be the primary actor. After all, the steps in the revised process begin with Public Safety Canada identifying issues and concludes with the Department making policy recommendations modified by researchers' input. Those two key steps, however, currently inhibited by internal barriers. Public Safety Canada will have to adjust some processes and undertake business in a new way to address these issues. The next section discusses how the Department could begin to do so.

OPTIONS: TOOLS AND RECOMMENDATIONS

This section provides an overview of a few potential approaches to addressing the opportunities for improvement identified in the previous section. In particular, it discusses three tools drawn from the literature, jurisdictional scan, and survey findings:

- Publish a new “national security trends” report
- Hold a “national security trends” conference.
- Mandate policy teams to engage with academics issue by issue.

To analyse these tools, four major considerations that Public Safety Canada would likely take into account in reviewing the options are considered:

- **Readiness:** The degree to which Public Safety Canada has experience in the work required to implement the option.
- **Risk.** The likelihood of an adverse outcome occurring that affects the ability for the option to achieve the desired result.
- **Relationships.** The degree to which the intervention would complement and align with the work of partner departments and agencies.
- **Resources.** The cost to implement the option.

After reviewing each tool in further detail, the tools and the considerations are summarized in Table 5 on page 49. The section then makes a recommendation on how the tools can be used to improve how Public Safety Canada engages academic researchers.

Tool 1: Publish a new “national security trends” report to spur academic inquiry

Similar to the United States’ “Global Trends” report, the Government of Canada could develop a report on the trends facing national security. While the current Public Report on the Terrorist Threat to Canada (PTR) outlines events which have occurred and manifested as a threat to Canada’s security, along with the implemented government response, the proposed trends report would identify potential future changes that could impact national security. The report could pose questions that, if answered by academia, would help inform a government response.

Once published, academics will likely incorporate the themes and questions into their work and reflect them in their published papers. Such uptake would depend upon interesting and meaningful information that would contribute to academic discussions being included in the report. Once acted upon in research, Public Safety Canada officials would then be

able to retrieve this information through established journals and other sources. To ensure an ability to do so, as part of this option it is recommended that SIPAs be offered enhanced training on departmental library resources.

Apart from the formal effects of releasing the report, the preparation of the report could contribute to developing better knowledge transfer relationships. Developing the report could reflect the knowledge transfer process outlined in the revised conceptual model, enabling future uses of the process. Specifically, interviews could be conducted with experts when developing the outline of the report. These experts could be re-engaged on the draft synopses for each chapter. If the policy leads within Public Safety Canada are included in these conversations, it could be a start of a working relationship.

This option is intended to exchange information at the level of analysis. By its nature, a report must organize around identified central themes. Since Public Safety Canada would be identifying those themes, and then seeking academic input within them, it is not expected that the preparation of the report will challenge fundamental assumptions. However, it can make sense of the iterative changes occurring in the world and what they mean for national security.

The effects of the report will last long after it is completed. The report would act as an invitation and symbol of senior management's support for investigating new developments. The report establishes linages and sets these conversations up for policy officials to pursue later in the policy process.

To reflect the medium-term perspective and align with the general governance cycle, such a report could be produced every four years.

Readiness. Public Safety Canada has experience in bringing the security and intelligence community together to produce such reports, as it has done for the Public Report on the Terrorist Threat to Canada for the past four years. While producing a report would be a new output, the work would be useful for a number of internal processes. For example, the report would complement the medium-term policy (MTP) planning process undertaken by PCO.

Risk. The major risk with this tool is that subsequent conversations do not take place to transfer knowledge. This risk is mitigated, however, if the report work is substantive. The more the report presents new, interesting information, the larger a role it will play in academic discussions and subsequent work.

Relationships. This tool generally aligns with established working relationships. Public Safety Canada has worked on reports such as this with partners before. There is also evidence that partners work on similar types of reports (CSIS).

Resources. The resources required to complete this report would be substantial, especially if undertaken in a collaborative approach as outlined above. It can be estimated that each chapter of the report would require 0.5 of an analyst dedicated over a two year period.

Tool 2: Hold a “national security trends” conference

In the literature review, the importance of both tacit and explicit knowledge is emphasized. Relationships are key to developing shared tacit knowledge, but there are limited opportunities to build such relationships between government and academia. Similar to Tool 1, this tool would seek to communicate to academics the key issues facing national security policy makers over the medium term. Unlike Tool 1, it would do so by means of a conference, rather than through a report. This would provide the opportunity for policy makers to meet with academics and develop shared perspectives on issues. Similar to Tool 1, a conference would represent an invitation for follow-up work and ongoing dialogue with academic researchers. By fostering relationships, it would directly enable ongoing knowledge sharing and dialogue.

One of the unique features of a conference is that they are often loosely based around a central concept, and in presenting papers the participants maintain a high degree of autonomy. Through a conference, Public Safety Canada would therefore benefit from receiving theories, including theories that challenge the status-quo. Since the Department is not taking on the role of author, only convener, it is able to facilitate the airing of these ideas.

Similar to Tool 1, the development of the conference itself could model the intended future working relationship. For example, Public Safety Canada could partner with a Canadian university to host the conference. Public Safety Canada and the host university would jointly develop an agenda, including a mix of SIPA and academic participants.

One major benefit of a conference would be the off-program opportunities for social engagement. As the literature outlines, social relationships are often the building blocks of professional knowledge sharing. To continue building these relationships, conferences would need to be held on a biennial basis.

To allow for conference proceedings to serve as a “launch point” for academic research, the proceedings could be compiled and published. This could serve a similar purpose to the report outlined in Option 1, potentially becoming the basis for future academic work.

Readiness. While Option 1 builds off Public Safety Canada’s experience in delivering on major reports, such as the Public Threat Report, this option entails venturing into less well-travelled territory. While Public Safety Canada has limited prior experience in conducting symposiums, its staff does not regularly organize a major conference and would have to develop new repertoires and perhaps engage conference organizers.

Risks. Similar to Tool 1, the major risk of this option is that a conference does not spur ongoing dialogue. However, the risk is less in this option since face-to-face events will contribute directly to development of genuine relationships.

Relationships. This option may also require more intensive work with partners, who have generally opted for smaller internal events (e.g. CSIS) or rely on external events (e.g. DND).

Resources. Given Public Safety Canada’s level of readiness, this option would have new contractor costs to help organize the conference and provide logistical support.

Tool 3: Mandating policy teams to engage with academics issue by issue

Recognizing that national security is a broad field, and engagement patterns may differ from issue to issue, the final tool adopts a de-centralized approach to developing knowledge transfer relationships between government and academia. Tool 3 involves giving policy teams the tools and mandate to regularly engage with academics.

Specifically, the third tool would see Public Safety Canada develop a “policy development engagement policy,” which outlines who may engage academic experts, when they may do so, and what information can be shared. This would signal that engaging with academics is important as well as provide assurance that doing so is acceptable and supported.

Second, resources internally would be mobilized to assist policy SIPAs to fulfil the policy. For example, training would be arranged on utilizing academic research and funding would be made available for engaging with counterparts.

This approach acknowledges that different approaches are needed for each issue, which may also vary by stage of the policy process.

This approach is particularly well suited to integrating data. As outlined above, this tool calls for engagement to be formed as part of the day-to-day business of running programs. At that level, managers have the primary task of maintaining the program’s effectiveness, so the major need is data on the environment, so that changes and effects can be identified.

Readiness. This option falls under processes regularly used by Public Safety Canada.

Risk. The main risk with this option is that institutional support does not result in logistical support, and that officials continue to perceive insufficient time to engage in relationship building with academics. To mitigate this, senior management will need to ensure sufficient resources to support the policy and relationship building.

Relationships. This option would have minimal impact on relationships as it would not impact joint processes. That said, in the short-term, Public Safety Canada officials would benefit from meeting with partners to allay any fears that developing relationships with academics could result in sensitive information being disclosed.

Resources. While not requiring dedicated resources, building knowledge sharing into the policy process will require the investment of time.

Table 5 - Summary of Tools

Option	Knowledge Obtained	Readiness	Alignment with Partners	Resources Required	Major Risk to Success	Risk Remaining after Mitigation
Tool 1: NS Trends Report	Analysis Researchers would provide interpretations of common trends.	High Public Safety Canada has the experience and expertise.	High Reflects work of partners in MTP process and existing processes to develop PTR.	Medium Would require some resources, but can build off existing processes.	Other mechanisms would be required to transfer tacit knowledge.	Low A participatory methodology to developing the report would start conversations, but risk remains the conversations may not continue.
Tool 2: NS Trends Conference	Theories Researchers would be given a platform to identify foundational issues.	Low Public Safety Canada lacks experience in conferences.	Medium While partners use conferences to gain academic knowledge, it is usually on a smaller scale.	High Would require significant resources for a new undertaking.	While a conference provides an opportunity to build relationships, follow-up work required to ensure process benefits.	Low Mitigated by policies that enable opportunities for follow-up meetings (e.g., Connection grants, PDCP).
Tool 3: Mandate to Managers	Data Managers would look for information on program performance.	High Utilizes existing tools and responds directly to issues raised by SIPAs.	Medium In the short-term, Public Safety Canada would need to engage with stakeholders to allay fears that sensitive information could be shared.	Low Would require few new dedicated resources.	Risk that SIPAs will continue to perceive there is not sufficient time to engage with academics.	Low Sustained, strong signals of leadership support for engaging with academia would be required.

Options for Consideration

Each of these policy tools specializes in providing a different type of knowledge to Public Safety Canada. As discussed in the literature review and found within the survey findings, the needs of Public Safety Canada change depending on the stage of the public policy process it finds itself. The options thus propose a different use of these tools, depending on the general orientation of the Department to national security policy development. In Table 6 below, the tools are arranged into three options, sorted by the decision-making mode identified by Lindquist (1988) and adopted in the revised analytic framework.

Table 6 - Options for Consideration

	Option 1	Option 2	Option 3
Public Safety Canada’s Objective	<u>Routine</u> monitoring for new threats and developments	<u>Incremental</u> update to national security programming	<u>Foundational</u> update to national security programming
Information Needed	Data	Analysis and Data	Theories & Foresight, Analysis, and Data
Tool(s) Used	Direct Engagement	1. Report 2. Direct Engagement	1. Conference 2. Report 3. Direct Engagement

Option 1 would see Public Safety Canada develop a policy for engaging with academics to monitor for changes in the environment that would require a change to programming.

Option 2 would see Public Safety Canada engage with academics to produce a report on a change in the environment that will require a shift to programming. This would be used to support an incremental update based on a discrete change, such as an increase in Canadians travelling to participate in foreign conflicts. A direct engagement policy would flow from this work, to pursue the issues identified in the report in more granular detail, and to ensure that this developing change is appropriately tracked into the future.

Option 3 would see Public Safety Canada hold a conference around changes that represent a foundational change to national security, such as the development of a new type of threat or other foundational change. The rise of automated technology as well as the rise of “bulk data” represent ideas that could, if given further scrutiny, qualify as such as foundational changes to national security. Under this option, Public Safety Canada would convene a conference on these issues, encouraging the broadest input of ideas and theories. It would then analyse the contributions made at the conference to identify a theme for a report. It would engage academics to synthesize a report, collectively representing the “state of the art” on the issue. Further, direct engagement could fine-tune the analysis as Public Safety Canada proceeds to make policy proposals to government.

Recommended Option: Leading with a Conference

The choice between the three options depends, primarily, on what stage of the policy process Public Safety Canada finds itself, and the corresponding priority of decision makers. Option 1 is suited to routine monitoring to identify changes; Option 2 is ideal when the need for an update to programs or policies is identified; and Option 3 is appropriate for developing a general framework update.

As of writing, Bill C-59, An Act respecting national security matters, which makes a number of major updates to the national security legislative framework, is being considered by the House of Commons. That bill follows a number of others that have also made iterative updates to the security framework. These updates continue a legacy that has existed since the 9/11 attacks in the United States and the release of Canada’s first, and so far only, National Security Policy “Securing an Open Society.” As new trends such as climate change, artificial intelligence, and cloud-based and bulk data-based computing, change the rules of the game, the time is right to begin considering what the next national security policy should consist of. As a result, Option 3 is recommended as the starting point for Public Safety Canada’s efforts.

Implementation Plan for Recommended Option

A potential critical path for completing Option 3 is presented below. For Option 2 and Option 1, the implementation plan could be commenced at the report stage or the direct engagement stage, respectively.

Table 7 - Critical Path

PART 1 - CONFERENCE	
Kick-off meeting with policy teams and partners	July 2018
Identification of broad theme and boundaries by Deputy Minister	August
Engagement of specialized conference contractor	August
Call-out for papers and launch of promotions	September
Selection of papers	November
Invitations and announcements	December
Hold event	February
PART 2 - REPORT	
PHASE 1: PLANNING	
Kick-off meeting with policy teams and partners	February 2019
Development of data collection tools	March
Approval of data collection tools by Director General	May
PHASE 2: DATA COLLECTION	
Deploy survey	June 2019
Conduct follow-up interviews with stakeholders and academics, involving policy teams	July-August

PHASE 3: DATA ANALYSIS	
Review material to identify trends	September 2019
Develop synopses of main trends	October - November
Discuss synopses in issue tables with implicated partners, policy teams, and academic researchers	November-December
PHASE 4: DRAFTING	
Draft chapters for each theme	January 2020
Circulate for comments	February
Submit for approvals	March
Release	May
PART 3 - DIRECT ENGAGEMENT	
PHASE 1: MANDATE	
Identification of policy stakeholders	June 2020
Convene of discussion on considerations	July
Draft policy documentation	August
Consult with stakeholders	September
Obtain approvals	October
PHASE 2: TRAINING	
Identify required competencies	November 2020
Develop training materials	December-January 2021
Deploy training materials	February 2021

CONCLUSION

This report addressed the question of how to ensure national security policy makers are armed with the results of the latest academic research as they pursue the steps of the policy process. The response to the survey suggest that academics look to government to identify the major issues where inquiry is needed and begin research processes. Absent effective knowledge sharing at early stages, academic information could become irrelevant to the policy process. It also found that internal barriers (e.g. knowledge of resources, and time to access them) prevented participating policy makers at Public Safety Canada from accessing academic research.

To address these issues, the report provides three options. Depending on whether Public Safety Canada is seeking to inform a fundamental reset, an iterative policy update, or program maintenance, different tools are best suited. Specifically, the report recommends that Public Safety Canada convene a conference if it is looking to identify fundamental theories that challenge the status-quo. Otherwise, co-production of a national security trends report would infuse the department with current analysis in academia while an internal-facing engagement strategy would assist the department in maintain its programs and activities.

This report focused on knowledge transfer within the national security public policy making process. Further work could explore steps preceding and following the policy process. For example, preceding the policy process, what defines 'national security' in the eyes of policy makers, citizens, and stakeholders? Following the policy process, how can government communicate on the effectiveness of national security programming? Additional research could seek to better understand the national security research community in Canada.

National security is an evolving field. New threats can materialize quickly. At the same time, lingering issues can become dominated by a few voices and select points of view. Given the secrecy that surrounds national security work, it is easy for government officials to become isolated from other perspectives. Countering this requires conscious effort, but will result in policies that benefit from the full range of knowledge available.

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APPENDIX A: SURVEY FOR PUBLIC SAFETY CANADA POLICY OFFICIALS

CONSENT INFORMATION

Identifying models to improve exchange of national security knowledge between government and academia

You are invited to participate in a study that is being conducted by David MacIntyre entitled Pathways to Policies: National Security Knowledge Sharing.

David MacIntyre is a graduate student in the School of Public Administration at the University of Victoria and you may contact him if you have further questions by e-mailing dmacinty@uvic.ca. David is also a Senior Policy Analyst with Public Safety Canada. This study is not part of his duties in that position. As a graduate student, he is required to conduct research as part of the requirements for a degree in public administration.

This research is being conducted under the supervision of Dr. Evert Lindquist. You may contact him at 250-721-8416. This study is also being conducted for a client. Research results will be provided to Mr. John Davies, Director General, National Security Policy Directorate, Public Safety Canada.

Purpose and Objectives

The purpose of this research project is to investigate the knowledge transfer and exchange process between academic researchers and national security policy officials to identify how the process could be improved to meet mutual needs. Importance of this

Research

Research of this type is important because an effective knowledge exchange process contributes to informed, timely, and responsive policy development.

Participants Selection

You are being asked to participate in this study because you are a senior policy official at Public Safety Canada or an affiliate of the Canadian Network for Research on Terrorism, Security and Society with a PhD.

What is involved

If you consent to voluntarily participate in this research, your participation will include completing a brief survey (maximum 10 minutes duration).

Inconvenience

Participation in this study may cause some inconvenience to you, including the time to complete the survey and consider your responses.

Risks

There are no known or anticipated risks to you by participating in this research.

Benefits

The potential benefits of your participation in this research include a better understanding of how research may be used in the public policy development process.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. You may also skip questions if desired. If you do withdraw from the study prior to completing the survey your data will not be saved. If you withdraw from the study after submitting the survey it will be impossible to delete the information as the anonymous nature of the survey means it will be impossible to identify the relevant data.

Anonymity

In terms of protecting your anonymity, personal, identifiable information will not be requested by the researchers and the researchers will not be made aware of your decision to participate or not. Please do not provide your name or any other information that could be used to identify you. Your responses and your decision to participate will have no impact on any relationship, including employment, with the researcher, the client, or Public Safety Canada.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected by storing the information on secure systems with access restricted to the researcher and supervisor.

Dissemination of Results

It is anticipated that the results of this study will be shared with others in the following ways: a project report, presentations, and a report provided to Public Safety Canada.

Disposal of Data

Data from this study will be disposed of in five years by deleting electronic records.

Contacts

Individuals that may be contacted regarding this study include David MacIntyre, principal investigator (613-983-4268 or dmacinty@uvic.ca) and Dr. Evert Lindquist, supervisor (250-721-8416 or evert@uvic.ca) In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca). By completing and submitting the questionnaire, YOUR FREE AND INFORMED CONSENT IS IMPLIED and indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers. Please retain a copy of this letter for your reference.

PART 1: USE OF RESEARCH

The first questions are about how you currently use academic research when conducting national security-related policy work.

On a scale of 1 to 5, with 1 being “not at all” and 5 being “to a great extent,” please indicate the extent you usually use academic research during each of the following stages of the public policy process:

- | | |
|------------------------------|-------------------------|
| Problem/issue identification | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Research and analysis | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Generating policy options | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Consultation | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Proposal / decision making | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |

When using academic research during the public policy process, is it used:

Select all that apply.

- to better understand the issue,
- as evidence to support arguments and recommendations,
- as a source of options and policy proposals, or
- other (please explain). _____

How do scholars substantively contribute to the policy making process?

Select all that apply.

- Formal participants
- Informal advisors
- Creators of new information/knowledge

- Trainers of policy makers
- Scholars are not involved in policy-making processes.
- Other (please explain) _____
- I don't know

What forms of reports do you primarily use for public policy processes?

Select all that apply.

- Theoretical Analysis
- Quantitative Analysis
- Policy Analysis
- Historical Case Studies
- Contemporary Case Studies
- Formal Models
- Other (please specify) _____

The next questions are about how you would ideally use academic research when conducting public policy work.

On a scale of 1 to 5, with 1 being “not at all” and 5 being “to a great extent,” please indicate the extent you would, ideally, like to use academic research during each of the following stages of the public policy process:

- | | |
|------------------------------|---|
| Problem/issue identification | <input type="radio"/> 1
<input type="radio"/> 2
<input type="radio"/> 3
<input type="radio"/> 4
<input type="radio"/> 5 |
| Research and analysis | <input type="radio"/> 1
<input type="radio"/> 2
<input type="radio"/> 3
<input type="radio"/> 4
<input type="radio"/> 5 |
| Generating policy options | <input type="radio"/> 1
<input type="radio"/> 2
<input type="radio"/> 3
<input type="radio"/> 4
<input type="radio"/> 5 |
| Consultation | <input type="radio"/> 1
<input type="radio"/> 2
<input type="radio"/> 3
<input type="radio"/> 4
<input type="radio"/> 5 |
| Proposal / decision making | <input type="radio"/> 1
<input type="radio"/> 2
<input type="radio"/> 3
<input type="radio"/> 4 |

When using academic research during the public policy process, would you, ideally, like to use it:

Select all that apply.

- to better understand the issue,
- as evidence to support arguments and recommendations,
- as a source of options and policy proposals, or
- other (please explain). _____

Ideally, how should scholars contribute to the policy making process? (Select all that apply.)

Select all that apply.

- Formal participants
- Informal advisors
- Creators of new information/knowledge
- Trainers of policy makers
- Scholars should not be involved in policy-making processes.
- Other (please explain) _____
- I don't know

What forms of reports would you ideally primarily use for public policy processes?

Select all that apply.

- Theoretical Analysis
- Quantitative Analysis
- Policy Analysis
- Historical Case Studies
- Contemporary Case Studies
- Formal Models
- Other (please specify) _____

PART 2: BARRIERS TO USE

The final question is about what prevents you from using academic research in an ideal manner.

What barriers prevent you from using academic research, or prevent you from using it in the way you would like?

For each barrier that applies to you, please indicate whether the barrier hinders your use of academic research (makes it difficult) or completely prevents you from using academic research (makes it impossible).

Don't have time to use academic research.

- Hinders use
- Prevents use
- Doesn't apply
- Hinders use
- Prevents use

Don't know where to find academic research.

- Hinders use
- Prevents use

Don't have access to academic research.

- Doesn't apply
- Hinders use
- Prevents use

Managers / decision makers don't value academic research.

- Doesn't apply
- Hinders use
- Prevents use

Don't know how to interpret academic research.

- Doesn't apply
- Hinders use
- Prevents use

Not sure how I would use academic research.

- Doesn't apply
- Hinders use
- Prevents use

Research isn't in a language I understand.

- Doesn't apply
- Hinders use
- Prevents use

Relevant research doesn't exist.

- Doesn't apply
- Hinders use
- Prevents use

Research on my files cannot be easily applied to policy development.

- Doesn't apply
- Hinders use
- Prevents use

Researchers in my field are not reputable/ I don't trust them.

- Doesn't apply
- Hinders use
- Prevents use

Research is not written in a way that applies to policy work.

- Doesn't apply
- Hinders use
- Prevents use

Research isn't written in a way that I can easily make sense of.

- Doesn't apply
- Hinders use
- Prevents use

- Doesn't apply

Other please indicate whether the barrier hinders your use of academic research (makes it difficult) or completely prevents you from using academic research (makes it impossible).

Do you have any other comments on the use of academic research for policy making that you would like to provide to the research team?

Please do not include your name or any other information that could be used to identify you, such as a specific research topic.

This concludes the survey. Thank you for your participation!

Please click on submit below to submit your answers.

APPENDIX B: SURVEY FOR ACADEMIC NATIONAL SECURITY RESEARCHERS

CONSENT INFORMATION

Identifying models to improve exchange of national security knowledge between government and academia

You are invited to participate in a study that is being conducted by David MacIntyre entitled Pathways to Policies: National Security Knowledge Sharing.

David MacIntyre is a graduate student in the School of Public Administration at the University of Victoria and you may contact him if you have further questions by e-mailing dmacinty@uvic.ca. David is also a Senior Policy Analyst with Public Safety Canada. This study is not part of his duties in that position. As a graduate student, he is required to conduct research as part of the requirements for a degree in public administration.

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Purpose and Objectives

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Research of this type is important because an effective knowledge exchange process contributes to informed, timely, and responsive policy development.

Participants Selection

You are being asked to participate in this study because you are a senior policy official at Public Safety Canada or an affiliate of the Canadian Network for Research on Terrorism, Security and Society with a PhD.

What is involved

If you consent to voluntarily participate in this research, your participation will include completing a brief survey (maximum 10 minutes duration).

Inconvenience

Participation in this study may cause some inconvenience to you, including the time to complete the survey and consider your responses.

Risks

There are no known or anticipated risks to you by participating in this research.

Benefits

The potential benefits of your participation in this research include a better understanding of how research may be used in the public policy development process.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. You may also skip questions if desired. If you do withdraw from the study prior to completing the survey your data will not be saved. If you withdraw from the study after submitting the survey it will be impossible to delete the information as the anonymous nature of the survey means it will be impossible to identify the relevant data.

Anonymity

In terms of protecting your anonymity, personal, identifiable information will not be requested by the researchers and the researchers will not be made aware of your decision to participate or not. Please do not provide your name or any other information that could be used to identify you. Your responses and your decision to participate will have no impact on any relationship, including employment, with the researcher, the client, or Public Safety Canada.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected by storing the information on secure systems with access restricted to the researcher and supervisor.

Dissemination of Results

It is anticipated that the results of this study will be shared with others in the following ways: a project report, presentations, and a report provided to Public Safety Canada.

Disposal of Data

Data from this study will be disposed of in five years by deleting electronic records.

Contacts

Individuals that may be contacted regarding this study include David MacIntyre, principal investigator (613-983-4268 or dmacinty@uvic.ca) and Dr. Evert Lindquist, supervisor (250-721-8416 or evert@uvic.ca) In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca). By completing and submitting the questionnaire, YOUR FREE AND INFORMED CONSENT IS IMPLIED and indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers. Please retain a copy of this letter for your reference.

PART 1: USE OF INFORMATION

The first questions are about how you currently use government information (information produced by the Government of Canada) when conducting research into national security issues.

On a scale of 1 to 5, with 1 being “not at all” and 5 being “to a great extent,” please indicate the extent you usually use government information during each of the following stages of the public policy process:

- Problem/issue identification 1
 2
 3
 4
 5
- Methodology design 1
 2
 3
 4
 5
- Data analysis (Government information is analysed) 1
 2
 3
 4
 5
- Proposal / decision making 1
 2
 3
 4
 5

When using Government information during the research process, is it used (select all that apply):

Select all that apply.

- to better understand the issue,
- as evidence to support arguments and recommendations,
- as a source of arguments and proposals, or
- other (please explain). _____

How do Government officials substantively contribute to the research process?

Select all that apply.

- Formal participants on the research team
- Informal advisors
- Fellow creators of new information/knowledge
- Trainers students/academics
- Government officials are not involved in research processes.
- I don't know.
- Other (please explain) _____

What forms of reports do you primarily use for research processes?

Select all that apply.

- Public analyses (e.g., Public Threat Report; CSIS Academic Outreach reports)
- Statistical reports (e.g., reports required under Part VI of the Criminal Code)

- Analysis / briefing notes obtained under the Access to Information Act
- Statistics / quantitative data obtained under the Access to Information Act
- Court documents
- Other (please specify) _____

The next questions are about how you would ideally use Government of Canada information when conducting research.

On a scale of 1 to 5, with 1 being “not at all” and 5 being “to a great extent,” please indicate the extent you would—ideally—like to use Government information during each of the following stages of the public policy process:

- | | |
|--|-------------------------|
| Problem/issue identification | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Methodology design | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Data analysis (Government information is analysed) | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |
| Proposal / decision making | <input type="radio"/> 1 |
| | <input type="radio"/> 2 |
| | <input type="radio"/> 3 |
| | <input type="radio"/> 4 |
| | <input type="radio"/> 5 |

When using Government information during the research process, it would—ideally—be used (select all that apply):

Select all that apply.

- To better understand the issue
- As evidence to support arguments and recommendations
- As a source of options and policy proposals
- Other (please explain) _____

Ideally, how would Government officials substantively contribute to the research process (select all that apply)?

Select all that apply.

- Formal participants
- Informal advisors
- Creators of new information/knowledge
- Trainers of students/academics
- Government officials should not be involved in policy-making processes.
- Other (please explain) _____
- I don't know

PART 2: BARRIERS TO USE

The last question is about what may prevent you from using Government information in an ideal manner.

What barriers prevent you from using Government information, or prevent you from using it in the way you would like?

For each barrier that applies to you, please indicate whether the barrier hinders your use of Government information (makes it difficult) or completely prevents you from using Government information (makes it impossible).

Don't have time to use Government information.

- Hinders use
- Prevents use
- Doesn't apply

Don't know where to find Government information.

- Hinders use
- Prevents use
- Doesn't apply

Don't have access to Government information.

- Hinders use
- Prevents use
- Doesn't apply

Colleagues don't value Government information.

- Hinders use
- Prevents use
- Doesn't apply

Don't know how to interpret Government information.

- Hinders use
- Prevents use
- Doesn't apply

Not sure how I would use Government information.

- Hinders use
- Prevents use
- Doesn't apply

Government information isn't in a language I understand.

- Hinders use
- Prevents use
- Doesn't apply

Relevant Government information doesn't exist.

- Hinders use
- Prevents use
- Doesn't apply

Information on my interests cannot be easily applied to research.

- Hinders use
- Prevents use
- Doesn't apply

Government information is not reputable/ I don't trust it.

- Hinders use
- Prevents use

Government information is not written in a way that applies to research.

- Doesn't apply
- Hinders use
- Prevents use
- Doesn't apply
- Hinders use
- Prevents use
- Doesn't apply

Government information isn't written in a way that I can easily use.

Other. Please specify and indicate whether the barrier hinders your use of Government information (makes it difficult) or completely prevents you from using Government information (makes it impossible).

Do you have any other comments on the use of Government information for research that you would like to provide to the research team?

Please do not include your name or any other information that could be used to identify you, such as a specific research topic.

This concludes the survey. Thank you for your participation!

Please click on submit below to submit you answers.