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Trading Secrets: Canada's Comparative Advantage in Signals Intelligence Sharing, 1947 to Present

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Trading Secrets:

Canada's Comparative Advantage in Signals Intelligence Sharing, 1947 to Present

by

Maria Robson

A THESIS

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Abstract

Canada is a member of the world's strongest intelligence-sharing relationship, the Five Eyes. Why has Canada been a valued partner for the United States and the United Kingdom, states with greater absolute intelligence capabilities? Canada's intelligence capabilities are understudied; existing scholarship has suffered from a lack of access to material. The declassification of archival materials surrounding the establishment of Five Eyes allow this thesis to make a new contribution to the literature, illuminating Canada's unique value to its strategic partners.

This thesis demonstrates that Canada has a comparative advantage in signals intelligence (SIGINT). While directly benefiting national security, Canadian SIGINT was built and leveraged to ensure value to its most powerful intelligence-sharing partners. Canada has acted on gains from trade, identifying comparative advantages in geography and analytical capabilities and leveraging them to ensure access to intelligence, military support, and political relationships to further its national security.

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Introduction

Canada is part of the world's most powerful and long-lasting multilateral intelligence-sharing relationship: the Five Eyes.¹ The five-state alliance, comprising the United States, Britain, Canada, Australia, and New Zealand, was founded around the sharing of signals intelligence (SIGINT), which Canada defines as “the interception and analysis of communications and other electronic signals.”² Originally a means of intercepting radio signals, including radio and traffic sent by telegraph, SIGINT in 2015 encompasses all electronic communications and more traditional physical methods. The value of SIGINT to a country is straightforward; it opens a window into the communications of others, revealing adversaries' plans and thereby supporting one's ability to bolster national security. SIGINT has enjoyed an unexpected spotlight since 2013 due to the revelations of extensive programs by the Five Eyes collecting intelligence on private citizens, disclosed by National Security Agency (NSA) contractor Edward Snowden. While these revelations prompted international awareness, SIGINT sharing among these five countries has flown mostly under the radar since its origins in the 1940s, while providing their states with products that have substantial implications for national security and political and diplomatic relationships. This thesis's focus is on international cooperation in exchanging SIGINT, and in particular Canada's role in these exchanges. It asks why the United States and Britain, states with far more powerful intelligence capabilities, have valued Canada as an intelligence partner. It also asks how Canada has benefited from these partnerships.

¹ The alliance will be explained in detail in this study by both its names, Five Eyes (contemporary) and UKUSA (historical).

² Communications Security Establishment Canada. “Foreign Signals Intelligence”. Last Modified 24 July 2014. Last Accessed 28 December 2014. <http://www.cse-cst.gc.ca/en/inside-interieur/signals-renseignement>.

The framework underpinning this thesis is comparative advantage in international trade, a concept first expressed by economist David Ricardo in 1816. These issues can be illuminated by drawing parallels to theories of international trade. Trade allows people to enjoy more goods and services than would be possible if they had access only to the production of their home country. They can specialize in producing more of the goods and services in which they have a comparative advantage, and trade exports in these items for imports of goods and services in which they have a comparative disadvantage. Intelligence too is a product and can be traded. Canada has long exchanged SIGINT goods and analytical services to obtain intelligence and support from Canada's partners, and to further its own security by shedding light on emerging threats.

A key insight of international trade theory is that comparative, not absolute, advantages in production are what allow gains from trade: a pair of countries in which one is more efficient at producing everything than the other still can gain from trading with each other.³ The law of comparative advantage can be expressed in economic terms as: $a_1/a_2 \leq p_1/p_2 \leq a^*_1/a^*_2$, where a_1 and a_2 are the cost of production in the home country for goods 1 and 2, p_1 and p_2 are the prices of these goods, and a^*_1/a^*_2 are the cost of production in the foreign country. If the equation did not hold, one good would be substantially more appealing to produce than the other due to lower costs, which would gradually drive up the price of the other good until equality was established. The home country will produce good 1 and trade for good 2 to minimize cost and maximize benefit. Even in situations where the home country's cost of production is lower for both goods than the foreign country, both will be more efficient and maximize gains through trade.⁴

³ For more on international trade theory and comparative advantage, see Richard G. Lipsey and Wendy Dobson, eds. (1987), *Shaping Comparative Advantage*, Toronto: C.D. Howe Institute.

⁴ Roy J. Ruffin, (2002), "David Ricardo's Discovery of Comparative Advantage", *History of Political Economy*, 34(4), 729-730.

The incentives to trade include concentrating resources in specialized areas, thereby minimizing costs and avoiding stretching resources too thin trying to cover all outputs for which the home country has a demand. The result is to maximizing the products available for consumption in the home market.

The concept of comparative advantage holds true in intelligence, where the government is the consumer and the agencies can maximize the products available through specialization and trade. In international trade, governments set trade regulations but companies produce and purchase goods and services. Likewise in the intelligence domain, policymakers – and courts – set the parameters and agencies within the government engage in the trading relationship.

In place of goods, states can also trade intelligence products. When exchanging SIGINT, states with smaller absolute capabilities, such as Canada, which cannot deploy resources on the same scale as its more powerful partners, can still have a comparative advantage if they play to their strengths. This is true even when two states have the same relative efficiency in producing goods and services. Certain factors still can induce trade; Ricardo argued that even if the English and Portuguese produced wool and wine with the same relative efficiency, they would benefit from trading Portuguese wine for English wool. Even if Canadian and British SIGINT capabilities had historically been identical in terms of relative efficiency of resource allocation, geography has given Canada access to radio signals inaccessible to Britain, rendering Canadian SIGINT a tradable product.

A key element of intelligence sharing between states is the issue of trust. While a lack of trust does not preclude sharing, trust plays a key role in the scope and endurance of intelligence sharing. Economics illuminates why states with no level of trust to speak of may still trade intelligence in limited cases: if one state does not have the resources required for production of a

good, trade is a solution to get the good into the home market. The overarching incentive to engage in intelligence sharing is its ability to essentially expand a state's intelligence capabilities. A key motivation for intelligence sharing is a shortcoming in a state's capabilities that cannot be remedied unilaterally except at great cost in resources and time, such as lack of access to a collection target; in such circumstances, intelligence sharing may be viewed as essential for successful pursuit of policy objectives. An example of such a scenario is intelligence cooperation in the detection and capture of one of the perpetrators of the September 11th terrorist attacks on the United States.⁵ In this case, the Americans did not have the intelligence necessary to detect the target's location without Pakistan's cooperation. This type of cooperation is limited, however, without mutual trust. In international trade, while trust is not a precursor to trade, it can serve as quality control for products; this also holds for intelligence.

When exchanging intelligence, unlike with international trade, the decision of whether to exchange rests not purely on economics but also the national security implications. However efficient Iran might be at human intelligence, for example, the United States would have qualms about trading with a partner that might use the intelligence product to attack its partner's national security. Intelligence sharing therefore can be best understood by combining international relations theory with the framework of international trade, based on calculations of gains from exchange resulting in net benefit to both parties – this theoretical perspective reflects realist explanations of intelligence sharing, wherein both partners achieve relative gains over states that are not part of the arrangement.

The field of intelligence-sharing normally involves a high level of mistrust, in which states share with one hand and collect intelligence on their intelligence-sharing partners with the

⁵ James Igoe Walsh, *The International Politics of Intelligence Sharing*, (New York: Columbia University Press, 2010), 3-4.

other. This is not the case with the Five Eyes. The parallel with international trade in other goods and services applies in this respect also, since common language, culture and legal systems tend to support higher levels of exchange than other indicators, such as proximity and economic size, would predict on their own. Canada's reliability and unique importance to its Five Eyes partners from the earliest days of the relationship will be examined in detail in Chapter 3.

Since Canada established autonomous SIGINT capabilities in 1946, Canadian SIGINT has served as the country's main source of foreign intelligence. In the intelligence realm, Canada's strength has historically been SIGINT. It has provided useful leverage to further Canadian military and diplomatic objectives by ensuring the country's inclusion in powerful intelligence-sharing relationships. Canada historically has determined its SIGINT targets based on American and British policies, which emphasizes that Canada's production of SIGINT has been shaped by demand in its major partners. It has been valuable as a means of maintaining ties and access to our allies' intelligence.

Canadian SIGINT capabilities are substantial and understudied. In the existing intelligence literature notable gaps surround both Canadian SIGINT and the Five Eyes alliance. This paper seeks to fill these gaps by drawing on newly-declassified archival materials. The scant literature regarding Canadian signals intelligence, however, invariably mentions the Five Eyes, which is an illuminating point. Intelligence sharing has always been a paramount motivation for Canada to engage in signals intelligence collection, as in the Canadian decision to establish an autonomous agency following World War II.

States collect intelligence in order to improve national security. Intelligence expands policymakers' understanding of the threat environment, enabling them to make more informed decisions to support national security. Despite the secrecy surrounding intelligence collection

and usage, there are cases in which Canadian SIGINT is known to have directly benefited Canada's national security.⁶ Canada, however, is a smaller power – in terms of military and intelligence capabilities – than nations such as the United States, and it has benefited substantially from sharing intelligence with them. SIGINT exchange is understudied primarily because documents have been scarce due to high levels of secrecy. However, there are known cases in which sharing among the Five Eyes benefited Canada, and material from Canadian SIGINT benefited other Five Eyes nations.

SIGINT has had three core benefits for Canada: first, directly bolstering Canadian national security, second, indirectly bolstering it through increased knowledge of threats to Canada stemming from partners' intelligence products, and third, strengthening ties with diplomatic allies.

The case for trading may seem counterintuitive when considering a state with vast capabilities, such as the United States. The U.S. has long surpassed its Five Eyes partners in raw intelligence capability. The economics of international trade demonstrate, however, that all states benefit from trade. And in this case the American superiority is less clear-cut than it appears on the surface. Between 1945 and 1954 the Government Communications Headquarters (GCHQ) in Britain contributed roughly as much to the pool as did the NSA. Since then it has maintained significant capabilities. All of the lesser members of the Five Eyes have pursued comparative advantages to ensure they pay their dues to the club, with their strengths including analytical power, or access to different physical methods of communication or chains of discussion through which to collect SIGINT. Even those with an absolute advantage in all categories benefit from specialization and reliance on trading partners to fill in gaps; thus, the United States enhances the

⁶ These cases will be examined in Chapter 3.

quantity and quality of intelligence at its disposal by sharing with Canada and its other Five Eyes partners. Furthermore, the U.S. has always had a vested interest in ensuring Canada's security due to geographic proximity and economic and diplomatic ties. Analysis of intelligence sharing during the Cold War will examine the direct benefit to the United States in bolstering Canada's security.

The geographic motivation parallels incentives in international trade. States with common borders face lower costs for trading; this efficiency of exchange of products played a role in the Americans' negotiations with the British in 1946 surrounding the terms of Canada's inclusion in what would become the Five Eyes alliance.⁷ In addition, states often choose their trading partners based on diplomacy, strengthening political ties through economic benefit and mutual reliance. Similarly, trading intelligence with friendly states can strengthen ties between the states, and vice versa.

Canada as a Producer of Intelligence

An unattributed witticism holds that Canadian intelligence agencies must be the best in the world because nobody knows they exist. While oversimplified, this highlights the lack of awareness of Canadian intelligence production, in contrast to discussions of intelligence activities in the United States and Great Britain. In Canada, crises occasionally prompt public awareness – these may include problems with intelligence or security – however, such awareness fades until the next incident temporarily propels intelligence into the foreground. The literature on Canadian intelligence is scanty and only a small subset, primarily by Canadian Dr. Martin Rudner, focuses on signals intelligence. This study addresses that gap in Canadian intelligence

⁷ Chapter 2 will examine discussions of Canada in the UKUSA negotiations from the original archival materials.

and international relations literature; intelligence is a little-studied but essential component of international relations, particularly for lesser powers such as Canada, which must rely on stronger relations and sharing to bolster their national security. Martin Alexander emphasizes intelligence's role in international relations, describing the importance of studying intelligence "as a truly integral and integrated part of international history and strategic history" rather than an isolated activity.⁸

An examination of the history of Canadian SIGINT challenges the conventional wisdom surrounding Canadians and then international relations. Canadians commonly embrace the image of the friendly international peacekeeper. By contrast, since the 1940s Canada has covertly collected substantial intelligence on other states, including friendly ones; a recent example being the 2014 revelations of Canadian SIGINT collection on Brazil.

Second, when knowledgeable academic and practitioners contend that Canada should have a foreign intelligence service,⁹ they overlook the fact that the Communications Security Establishment (CSE) is by definition a foreign intelligence agency. Its mandate in the National Defence Act prohibits deliberate collection of intelligence on Canadians or on any individual within Canada without a warrant.¹⁰ In a 1993 Library of Parliament paper, senior analyst Philip Rosen stated that CSE fits "most, if not all, the elements of [the] definitions of an intelligence organization with responsibility for foreign intelligence."¹¹

⁸ Martin S. Alexander, "Introduction: Knowing Your Friends, Assessing Your Allies – Perspectives on Intra-Alliance Intelligence", in *Knowing Your Friends: Intelligence Inside Alliances and Coalitions from 1914 to the Cold War*, edited by Martin S. Alexander, (London: Frank Cass, 1998), 1.

⁹ For example, see Jerome Mellon, "The Missing Agency: The Case for a Canadian Foreign Intelligence Service, 2nd Edition", Canadian Intelligence Resource Centre, Accessible at <http://circ.jmellon.com/docs/view.asp?id=370>.

¹⁰ Communications Security Establishment Canada, "Foreign Signals Intelligence", <http://www.cse-cst.gc.ca/en/inside-interieur/signals-renseignement>.

¹¹ Rosen, Philip, Senior Analyst, "The Communications Security Establishment – Canada's Most Secret Intelligence Agency", (Ottawa: Parliamentary Research Branch, Library of Parliament, 1993), Accessed at <http://www.parl.gc.ca/Content/LOP/researchpublications/bp343-e.htm>, 2.

The third contrast is with the perception of Canadians as being open and friendly, and Americans as unfriendly and secretive. The United States has had an open dialogue about intelligence since the 1940s, whereas the Canadian government did not even acknowledge the existence of its SIGINT agency until 1974, when induced to do so by a Canadian Broadcasting Corporation documentary “The Fifth Estate: The Espionage Establishment”.¹² The author’s experience with official archives bears out this contrast, with archival intelligence material being more extensive and easier to access through the U.S. government than in Canada. Ray Boisvert, former Assistant Director of the Canadian Security Intelligence Service (CSIS), asserted in an interview with the author that “Americans have the most open society in the world” with regard to acknowledgement of intelligence activities, including open references to how SIGINT aids national security. Boisvert expressed surprise at the American approach to acknowledging operational intelligence; by contrast “the Brits are often circumspect and the Canadians are even more circumspect.” Boisvert noted “the Canadian tradition of not talking about defence and security.”¹³ Canadian intelligence culture will be examined further, as will the practical implications of such conceptions, notably in the postwar debate over whether to establish autonomous Canadian intelligence capabilities.

There is a contrast among the public reactions in the member states to the Edward Snowden affair within the Five Eyes countries. The United States has experienced considerable backlash against perceived government intrusion in private lives, leading to political debate and legislative changes, including the creation of new oversight mechanisms. Similar public outcry has taken place in Canada, where the public was far less aware of the existence of Canadian

¹² Bill Robinson, “Fifth Estate X three”, Lux Ex Umbra, Last Modified 1 November 2013, Last Accessed 28 December 2014, <http://luxexumbra.blogspot.ca/2013/11/fifth-estate-x-three.html>.

¹³ Ray Boisvert, Former Assistant Director, Canadian Security Intelligence Service, Telephone Interview with Author, March 2013.

SIGINT activities until the revelations and has since been concerned with the potential for intrusion, although the public has not maintained the high level of public outcry. The United Kingdom has witnessed parliamentary proposals for increased oversight but did not face public protests and the public has maintained its faith in British intelligence, primarily due to a historic trust dating back before Five Eyes. As described by *The Economist* in an assessment of the British public's reaction, the word "intelligence" invokes, for Americans, intelligence failures such as Pearl Harbour, whereas for British citizens it invokes successes, primarily Bletchley Park.¹⁴ In all three countries, moreover, public attention to the matter has waned.

Public awareness of intelligence, not only in Canada but in all the Five Eyes countries, commonly focuses on human intelligence. The CIA, MI6, the KGB, and other HUMINT agencies grip the imagination and have been the focus of many film and literary works. In 2014, cryptanalysis enjoyed unusual public attention through actor Benedict Cumberbatch's portrayal of British codebreaker Alan Turing in World War II; however, human intelligence still vastly outstrips its signals counterpart in popular culture, through James Bond, Jason Bourne, and many others. The public does not have nearly the same level of awareness of SIGINT as HUMINT, despite the former's value in safeguarding national security. Most Canadians are unaware that their country has a signals intelligence agency, let alone that it predates the Canadian human intelligence agency, the Canadian Security Intelligence Service. CSIS was formed in 1984 from the intelligence branch of the national law enforcement agency, the Royal Canadian Mounted Police (RCMP). The Communications Security Establishment came into being under its current title in 1975 and was originally established in 1946, as the Communications Branch of the National Research Council (CBNRC).

¹⁴ The Economist, "A great place to be a spy: British spies are bruised by Edward Snowden, trusted by the public and need better oversight" *The Economist*, 8 March 2014.

Canada as a Consumer of Intelligence

Signals intelligence products – both produced internally and obtained through exchange – have long benefited Canadian national security. Chapter 3 examines in detail SIGINT’s value to Canada, involving both security and diplomatic benefits, although these issues are covered by secrecy. Even so, on the security side, SIGINT is known to have contributed to the identification and thwarting of numerous terrorist threats involving Canadian targets or perpetrators. Terrorist cases with Canadian implications and SIGINT involvement include the Toronto 18 terrorist plot that was uncovered in 2006.¹⁵ Signals intelligence directly bolstered Canadian national security, thwarting a plan to bomb targets in Canada’s largest city and assassinate the country’s Prime Minister. Canadian soldiers benefited from tactical SIGINT and analytical support, from Canada and its Five Eyes partners, as they participated in Operation Enduring Freedom in Afghanistan. Canada also has benefited on the diplomatic, or political, side through SIGINT exchange; SIGINT has allowed Canada to maintain and bolster ties with its closest friends on the international stage, and to pursue its diplomacy with greater effect than otherwise could be possible.

Canadian SIGINT always has served as leverage to obtain intelligence from allies with greater capabilities in absolute terms. Canada’s capabilities have been and continue to be far smaller than those of the United States of America and the United Kingdom. Canadian intelligence is inescapably dependent on that of its allies. However, on the basis of “give to get”, Canada has managed remarkable importance within intelligence-sharing, obtaining substantial intelligence because it has managed to produce its own products of value. SIGINT is a valuable

¹⁵ This and other cases will be examined in detail in Chapter 3. Sources referencing SIGINT involvement in the Toronto 18 include: Anthony Depalma, “Terror Arrests Reveal Reach of Canada’s Surveillance Powers”, *New York Times*, 8 June 2006.

tool for furthering cooperation and intelligence sharing, when one's partners have superior capabilities or access to additional sources.

Canada's International Trade in Intelligence

How has Canada merited inclusion in intelligence-sharing relationships with partners that have far greater capabilities in absolute terms? As in any good trading partnership, each state has a contribution that is valued by its partner and obtained at lower cost than if that partner produced it itself – a comparative advantage. Despite having smaller collection capabilities than its allies, Canada has produced a valued SIGINT contribution in intelligence-sharing relationships through two core characteristics: first, geographic advantage, and second, analytical capability. Finally, another factor contributes to Canada's inclusion that cannot be attributed to any Canadian merit: American exposure to Canadian security vulnerabilities. Given the close political, diplomatic, and geographic connections between the United States and Canada, it is in the former's interests to bolster the security capabilities of the latter. This effectively provides an additional comparative advantage that works in Canada's favour; it is in the United States' interests to have a strong, secure partner on its northern border rather than having to bolster itself against an additional threat from the north. This provides an added incentive for the Americans to trade intelligence to strengthen Canadian national security, thereby minimizing their own threat exposure. This thesis will examine all of these factors in detail through recently-declassified evidence from original intelligence-sharing agreements, allowing this research to make a new contribution to the intelligence literature.

Since the 1940s Canada's SIGINT agency has been a valued contributor to the security of Canada and its intelligence-sharing partners. Signals intelligence served as Canada's main source of foreign intelligence during the Cold War and was the type of intelligence that most affected

Canada's relations with its allies in terms of intelligence sharing. SIGINT, not HUMINT, ensured Canada's long-standing participation and value in the strongest and most enduring intelligence-sharing alliance in history, the Five Eyes alliance.

The Five Eyes was historically termed "UKUSA", to the limited extent it penetrated the general consciousness outside intelligence and policymaker circles: primarily within the realm of intelligence-focused academics. This name derives unoriginally from the initials of the two founding member states, the U.K. and the U.S.A. Building on the 1943 wartime BRUSA agreement – titled by Britain and the U.S.A. through a similar process – the two member states reconstituted their intelligence-sharing relationship into UKUSA to address the security environment after World War II. The arrangement was not a formalized alliance but rather a loose framework established through a collection of documents, the earliest of which date from 1946. The relationship did not constitute a single treaty, but rather a set of agreements.

UKUSA expanded in its infancy to include first Canada, secondly Australia, and finally New Zealand. The special input of Canadian, Australian, and New Zealand COMINT authorities was required in order to establish parts of the UKUSA Agreement.¹⁶ Multilateral external meetings both formal and informal, including specifically-stipulated informal meetings, were held to discuss certain parts of the treaty pertaining only to certain states.¹⁷ The UKUSA agreement was further revised in 1955. Its Appendix J illuminates the special significance of Canada, Australia, and New Zealand as integral additions to the relationship beyond the original two signatories, in contrast to other states that were relegated to Third Party status with limitations on sharing; these states include South Korea and Japan.¹⁸

¹⁶ National Security Agency. UKUSA Agreement Release 1940-1956. (Last Accessed 20 March 2015). https://www.nsa.gov/public_info/declass/ukusa.shtml, HW-80-10, 6.

¹⁷ Ibid.

¹⁸ National Security Agency. UKUSA Agreement Release, EIDER, Appendix J, 1.

The relationship is agency-driven, with many parallel relationships being established at later times among the five corresponding services within the member states, such as the HUMINT agencies, and the militaries. Over time, the name changed, with members beginning to call it “Five Eyes.” The name is a reference to the classification system on intelligence documents; for example, a file might state “For Canadian Eyes Only”. As the documents in this relationship would specify that they were for American, British, Canadian, Australian, or New Zealander eyes only, the alliance became commonly known as Five Eyes. The terminology in this analysis will mirror – as closely as possible with an informal concept – the timeframe employed by the members, employing the term “UKUSA” for the historical, postwar and Cold War analysis, and “Five Eyes” to refer to the alliance in the modern, post-Cold War period.

Retired Canadian Brigadier-General James Cox has described Five Eyes as “the world’s most exclusive intelligence-sharing club”.¹⁹ Its cohesion and endurance are unparalleled in intelligence history. While the member states did not avoid friction throughout the Cold War, and the alliance was marked, in the words of Michael Handel and John Ferris, by “competitive cooperation, and political strains”, the five SIGINT agencies worked more closely with each other, than with other military and intelligence components of their own countries’ security systems.²⁰

The modern CSE acknowledges its reliance on Five Eyes. Its website identifies four and only four organizations with which “CSEC maintains unique partnerships”: NSA, GCHQ, ASD, and GCSB, concluding with the statement that “Canada benefits immeasurably from this allied

¹⁹ James Cox, “Canada and the Five Eyes Intelligence Community”, (Ottawa: Canadian Defence and Foreign Affairs Institute, 2012), 2.

²⁰ John. R. Ferris and Michael I. Handel, *On Intelligence* (Draft, 2011), Cited with permission, 112.

partnering arrangement.”²¹ CSE’s official description of its SIGINT operations likewise mentions that “CSEC relies on its closest foreign intelligence allies - the US, UK, Australia and New Zealand to share the collection burden and the resulting intelligence yield. Canada is a *substantial beneficiary* of the collaborative effort within the partnership to collect and report on foreign communications” [emphasis added].²²

This analysis will examine the Five Eyes alliance through the lens of Canada’s role from the outset as a lesser power with a comparative advantage that warranted its inclusion on special terms. The existing literature has a substantial gap surrounding both Canadian SIGINT and the Five Eyes alliance. This analysis addresses that gap, incorporating primary source research, including the recently-declassified Five Eyes materials, to illuminate Canada’s value in signals intelligence sharing.

²¹ Communications Security Establishment Canada, “CSEC’s International Partnerships”, Last Modified 27 June 2013, Last Accessed 2 December 2013, <http://www.cse-cst.gc.ca/home-accueil/about-apropos/peers-homologues-eng.html>.

²² Communications Security Establishment Canada, “Signals Intelligence (SIGINT)”, Last Modified 27 June 2013, Last Accessed 2 December 2013, <http://www.cse-cst.gc.ca/home-accueil/what-que/sigint-eng.html>.

Chapter 1: Theoretical Foundations

1.1 Definitions

This analysis employs CSE's definition of signals intelligence as "the interception and analysis of communications and other electronic signals."²³ Different countries have different approaches to what constitutes intelligence, with factors of contention including whether intelligence can include open source information or must be solely covert, and whether intelligence can be raw collected material or must necessarily include analysis. There is no consensus of definition among nations, although the original UKUSA agreement employed the definition that communications intelligence (COMINT) comprises "all processes involved in the collection, production, and dissemination of information derived from the communications of other nations."²⁴ This definition illuminates a further lack of clarity in electronic intelligence terminology; the UKUSA agreement uses the terms SIGINT and COMINT interchangeably, reflecting British and American terminology, respectively, to describe the same intelligence product. Not all practitioners and scholars of intelligence agree that the two are synonymous, with some defining SIGINT as the sum of COMINT and electronic intelligence (ELINT), drawing a distinction between electronic communications and other more traditional types of communication.²⁵ According to this line of thinking, the term SIGINT encompasses all of these practices.

This thesis employs Canada's terminology and definition since it focuses on Canada's usage of SIGINT as leverage within intelligence-sharing relationships. As it examines how the

²³ Communications Security Establishment Canada, "Foreign Signals Intelligence", <http://www.cse-cst.gc.ca/en/inside-interieur/signals-renseignement>.

²⁴ National Security Agency. UKUSA Agreement Release, HW-80-4, 5.

²⁵ For example, see Cox, 5.

Canadian government uses SIGINT, this thesis defines SIGINT as the Canadian government does.

Signals intelligence is an understudied and significant means to further national security. As stated by Christopher Andrew, “Despite its obvious importance to the course of the Cold War”, most historical accounts “tend to ignore or downplay the importance of signals intelligence”.²⁶

The utility of SIGINT is demonstrated in a 1945 Memorandum authored by Canadian Chiefs of Staff chairman General Charles Foulkes: “One supreme value of signals intelligence is that it is a short road into the mind of others. One reads what the originator actually says and what, for the purposes of his own, he is transmitting to others.”²⁷ As explained by former Brigadier General James Cox, “While it cannot always reveal what an opponent is thinking, sigint can tell you what he is saying and doing, from which adversarial capability and intent might be deduced.”²⁸ Ralph Bennett explains that “high grade signals intelligence” can do what no other source of intelligence used prior to World War II could: to produce “reliable insight into the enemy’s strategic thinking.”²⁹ SIGINT provides the direct words known to be used by the adversary, as opposed to HUMINT, which is prone to uncertainty regarding proven value of the product and to human failings such as imperfect memory. Foulkes’s memorandum elaborated that wartime experience had shown the value of wireless intelligence. His statement is particularly relevant for this analysis given its context: General Foulkes was emphasizing the

²⁶ Christopher Andrew, “Intelligence, International Relations and ‘Under-theorisation’”, *Intelligence and National Security*, Vol. 19 (2), 2004, 170.

²⁷ Quoted in Wesley K. Wark, “Cryptographic Innocence: The Origins of Signals Intelligence in Canada in the Second World War”, in *Journal of Contemporary History* 22(4), 1987, 660.

²⁸ Cox, 5.

²⁹ Ralph Bennett, *Ultra and Mediterranean Strategy*, (New York: William Morrow and Company, Inc., 1989), 15.

value of Canada engaging in joint SIGINT operations with the United Kingdom and the United States.

1.2 Intelligence Theory

While intelligence is a valued tool to advance state interests, it is, in the words of historian Christopher Andrew, “all but absent in most contemporary international relations theory.”³⁰ Intelligence literature tends to be historical rather than theoretical, and the scant approaches to the latter issue are inconsistent regarding the role and nature of intelligence.

Several factors explain the scarcity of intelligence studies and the theorization of intelligence. First, intelligence activities are shrouded in secrecy, which has long been considered necessary for effective intelligence operations. Intelligence studies are a relatively new domain of scholarship as official recognition of intelligence activities, even to a state’s own citizens, is a recent phenomenon. This first factor is correlated with the second: a lack of public discourse and reluctance to explore a field often considered disreputable. The act of covertly obtaining information on a state’s population or actors abroad, notably friendly states, is often negatively perceived, as was the case with the 2013 Snowden disclosures. Third, scholars and policymakers alike cannot reach a consensus on defining intelligence. Approaches are heavily influenced by country of origin; in the words of Philip Davies, to define intelligence is not as productive as to inquire: “how do different countries and institutions define intelligence?”³¹ Common definitions tend to divide along state lines; studies of intelligence in the United States often adopt Sherman Kent’s approach that “intelligence is knowledge”, where intelligence is defined as information, stemming from covert or open-source channels, and necessarily

³⁰ Andrew, 170.

³¹ Philip Davies, (2002), “Ideas of Intelligence: Divergent National Concepts and Institutions”, *Harvard International Review*, 24(3), 1.

containing an analytical component.³² In Canadian and British scholarship, by contrast, definitions of intelligence include secrecy and encompass raw collected material, rather than solely analytical product.³³ Nonetheless, contrasting definitions about intelligence within states have not precluded sharing the product among them.

Why do states share intelligence? What factors cause states to make intelligence-sharing arrangements, and, subsequently, whether they adhere to them? Given international agreements fall within the framework of international relations, it is worth exploring theories of international relations as they apply to intelligence sharing – an undertheorized area of study.

The importance of international intelligence sharing is reflected by Michael Herman's statement that "modern intelligence is a multinational activity."³⁴ States adopt cooperation in modern intelligence activities, rather than acting unilaterally and relying on their own collection and analysis capacity. The benefits of intelligence sharing lie both in political calculations and in the potential to facilitate a bigger and better understanding of threats and policy priorities than an individual state can do solely through its own intelligence-collection and analytical capacities.

The existing literature employs several distinct terms to explore intelligence sharing: "cooperation", "liaison", and "alliance". Intelligence scholarship has not reached consensus in defining these terms, with some treating them as synonymous and others considering them distinct.³⁵ Most significantly for the purposes of this research, these terms parallel common terminology in international relations theory. This thesis employs the terms intelligence

³² Mark M. Lowenthal, (2009), *Intelligence: From Secrets to Policy*, Fourth Edition (Washington, DC: CQ Press), 29.

³³ Davies, 3.

³⁴ Quoted in Don Munton, (2009), "Intelligence Cooperation Meets International Studies Theory: Explaining Canadian Operations in Castro's Cuba", *Intelligence and National Security*, 24(1), 122.

³⁵ For an example of the usage of "alliance", see Ferris and Handel, 112.

cooperation and sharing in the most inclusive sense, encompassing a variety of relationship levels.

International relations theory has not commonly been applied to intelligence operations. Much of the writing on intelligence has been conducted by practitioners who are not accustomed to removing themselves from the gritty elements of intelligence activity to consider its broader theoretical explanations. In a survey of the existing literature, Timothy Crawford concludes that studies of intelligence sharing have focused on “getting to the facts” to the exclusion of identifying the broader patterns in international relations.³⁶ Within an already-secretive field, intelligence sharing is a still more covert activity, consequently understudied and under-theorized. In addition, as mentioned by Adam Svendsen, “rigorous investigation of intelligence liaison is officially discouraged”,³⁷ reinforcing the notion of policymaker and agency emphasis on secrecy.

Alliances are formal agreements among states that perceive their national interests to align and anticipate positive gains from cooperation, notably enhancing mutual security.³⁸ Kupchan identifies alliances as potentially involving: joint operations or military assistance, policy compromises, or economic contributions to defence capabilities,³⁹ which closely resemble levels of intelligence cooperation. Utility is not the only reason to share intelligence. Trust is also a major factor in whether states share intelligence, and states that enjoy a high level of mutual trust can be further motivated to trade to bolster each other’s security. Cultural similarities can

³⁶ Timothy W. Crawford, (2010), “Intelligence Cooperation”, *The International Studies Encyclopedia*, Denmark, Robert A. Blackwell Publishing, Blackwell Reference Online, 7 October 2012, 1.

³⁷ Adam D.M. Svendsen, (2009), “Connecting Intelligence and Theory: Intelligence Liaison and International Relations”, *Intelligence and National Security*, 24(5), 707.

³⁸ Adapted from Charles Kegley and Gregory Raymond, (1990), *When Trust Breaks Down: Alliance Norms and World Politics*, (Columbia: University of South Carolina Press), 52.

³⁹ Charles Kupchan, (2009), “NATO and the Persian Gulf: Examining Intra-Alliance Behavior”, *International Organization*, 42(2), 323.

bolster trust. This is further illustrated by an accusation by a member of France's National Assembly, Rene Galy-Dejean, in 2000 that a Five Eyes program, Echelon, is an "Anglo-Saxon eavesdropping network".⁴⁰ In Five Eyes, the five nations share factors such as a common language, societal similarities, similar political systems, and a common history.

Various approaches and tools estimate when states will form alliances. Through an analysis based on game theory, one can envision a prisoner's dilemma scenario in which each state faces a binary choice of whether or not to cooperate. Through this approach Glenn Snyder identifies two motivations to select the alliance option: because it increase one's security, or avoids isolation if other states form alliances. In an additional scenario, an absence of conflicting interests may provide sufficient grounds for an alliance.⁴¹

Alliances give members many benefits. Charles Kegley and Gregory Raymond identify several, including: lowering costs for foreign policy actions through cost-sharing among partners; accessing additional resources and capabilities; and influencing friendly states' foreign policies.⁴² These incentives have clear parallels in intelligence sharing, in which a state supplements its resource capacity through trade. The motivation to ally with another state so to influence its policy is particularly significant for drawing parallels with intelligence cooperation.

Not all interests must align for states to cooperate. International cooperation can occur between actors with, in the words of Robert Axelrod and Robert Keohane, "a mixture of conflicting and complementary interests."⁴³ States A and B may be ideologically united against State C, whereas B and C may have compatible territorial interests on which grounds they might

⁴⁰ Quoted in Martin Rudner, (2007), "Canada's Communications Security Establishment, Signals Intelligence and Counter-Terrorism", *Intelligence and National Security*, 22(4), 481.

⁴¹ Glenn H. Snyder, "The Security Dilemma in Alliance Politics", *World Politics*, 36:4 (1984), 465.

⁴² Kegley and Raymond, 54-55.

⁴³ Robert Axelrod and Robert O. Keohane, (1985), "Achieving Cooperation under Anarchy: Strategies and Institutions", *World Politics*, 38(1), 226.

unite against A. This further illustrates the economic underpinnings of cooperation. Gains from trade do not depend on mutual liking or cooperation in other spheres; while trust and liking can increase motivation to share, comparative advantage nonetheless applies between unfriendly partners.

Policymakers often have only limited information to support the pursuit of policy priorities, leading to uncertainty in the costs associated with strategies, or in understanding the intentions and capabilities of adversaries or even allies.⁴⁴ Sun Tzu emphasized above all else the importance of knowing one's enemy and oneself. Intelligence is a valuable tool in pursuing these objectives.

Realists depict an anarchic system in which states face a security dilemma that normally should preclude collaboration; they will cooperate only when their preferences can be optimized through collaboration.⁴⁵ Despite focusing on the inherent competition among actors in the system, realism does not preclude cooperation; it differs from liberalism in that realists do not believe in the existence of untapped potential for cooperation.⁴⁶ The realist mindset is reflected in John Mearsheimer's statement that while cooperation can and does occur, it is "sometimes difficult to achieve and always difficult to sustain."⁴⁷ Mearsheimer identifies two factors that impede international cooperation: a fear that partners will extract greater relative gains from cooperation, or else cheat, or defect, gaining a substantial temporary advantage.⁴⁸ These concerns have clear parallels to intelligence cooperation.

⁴⁴ Walsh, 6.

⁴⁵ Nicole Deitelhoff and Harald Muller, (2005), "Theoretical paradise – empirically lost? Arguing with Habermas", *Review of International Studies*, 31(1), 167.

⁴⁶ Robert Jervis, (1999), "Realism, Neoliberalism, and Cooperation: Understanding the Debate", *International Security*, 24(1), 47.

⁴⁷ John J. Mearsheimer, (2001), *The Tragedy of Great Power Politics*, (New York: W.W. Norton and Company), 51.

⁴⁸ *Ibid*, 52.

Given these impediments to cooperation, how does one explain the persistence of international alliances in an anarchic system, particularly those that have outlasted their original purpose? Several scholars begin their study of this quest with a realist interpretation of the constraints on actors in an international system, but can explain the endurance of alliances only by departing from a realist mindset to invoke additional factors, such as norms.

As explained by Celeste Wallander, “in realist terms, alliances should not outlive the threats they were created to address”. However, examples such as the North Atlantic Treaty Organization (NATO) show that this is not the case. “Alliances are not always merely aggregations of national power and purpose: they can be security institutions as well.”⁴⁹ This conclusion of Wallander’s equally applies to intelligence sharing. Five Eyes has endured long after the demise of its original target for intelligence collection: the Soviet Union. A purely realist approach to cooperation does not fully explain relationships that endure and prosper when the original motivation for cooperation no longer exists.

Comparative advantage and liberal institutionalism both demonstrate incentives for cooperative arrangements to outlast their original purpose for formation. Over time, internal or external factors change the cost-benefit calculus for the arrangement; states are likely to maintain the existing relationship if the expected costs of creating the new institution or destroying an old one outweigh the costs of maintaining the existing arrangement, or, similarly, if the expected value of the current relationship outweighs the expected value of the new one.⁵⁰ This conclusion illuminates alliance formation and the persistence of cooperation within the intelligence domain.

⁴⁹ Celeste Wallander, (2000), “Institutional Assets and Adaptability: NATO after the Cold War”, *International Organization*, 54(4), 705.

⁵⁰ *Ibid*, 706-707.

1.2.1 Linking International Cooperation and Intelligence Sharing

Intelligence sharing is a subset of international, cooperative activities among states. Michael Herman highlights the parallels between intelligence liaisons and other areas of diplomacy, describing intelligence sharing as “not unlike the intergovernmental arrangements that have developed in other specialized areas”⁵¹. Walsh explicitly states that “intelligence sharing is a form of international cooperation”.⁵²

When determining whether to engage in intelligence sharing, states are predominantly inclined to select partners with whom they have existing diplomatic alliances.⁵³ The outcome may be parallel diplomatic and intelligence relationships, or a diplomatic alliance with an intelligence component. An example of the latter is the intelligence structures within NATO. Alternatively, in limited cases, intelligence cooperation may take the place of diplomatic relations.⁵⁴ The potential for one of these relationships to substitute for the other further emphasizes their similar characteristics and their potential to serve similar functions.

Intelligence sharing has several possible levels. Intelligence scholar Jennifer Sims proposes the categories of “simple” and “complex” cooperation. In “Simple” arrangements, limited amounts of intelligence are exchanged on a common target.⁵⁵ This category includes a direct exchange of intelligence products, and situations when one state uses the other’s intelligence collection technology with the understanding that both will receive the product. In “complex” relationships, by contrast, participants’ contributions may include economic, political,

⁵¹ Quoted in Munton, 133.

⁵² Walsh, 5.

⁵³ See Stephane Lefebvre, (2003), “The Difficulties and Dilemmas of International Intelligence Cooperation”, *International Journal of Intelligence and Counterintelligence*, 16(4), 529, and Jeffrey T. Richelson, (1990), “The Calculus of Intelligence Cooperation”, *International Journal of Intelligence and Counterintelligence*, 4(3), 308.

⁵⁴ Jeffrey T Richelson, “The Calculus of Intelligence Cooperation”, *International Journal of Intelligence and Counterintelligence*, 4:3 (1990), 315.

⁵⁵ Jennifer E. Sims, “Foreign Intelligence Liaison: Devils, Deals, and Details”, *International Journal of Intelligence and Counterintelligence*, 19:2 (2006), 197.

military, or intelligence products conveyed through intelligence capabilities. Formal agreements may be signed in which one party agrees to provide intelligence in exchange for non-intelligence products, such as diplomatic support or foreign aid.⁵⁶ Such scenarios add a level of complication in determining that states are making equivalent contributions.

These distinct types of relationships demonstrate the different levels of cooperation, within diplomatic and intelligence relations. They also demonstrate the appeal of cheating or defection should one party believe it is not receiving an equivalent product from its partner, or anticipate greater gains from abandoning the relationship for another.

A common precondition for intelligence cooperation between states is the existence of mutual national interests. In most situations interests are the core determinant of whether states will embark upon a path of cooperation with others. States often may have strong mutual interests in certain areas and utterly divergent interests in other realms.⁵⁷ This phenomenon does not preclude cooperation, but may limit the scope of the intelligence exchange.

States may also have ulterior motives in exchanging intelligence with others. Intelligence sharing arrangements may also be instituted for objectives completely removed from the quality of evidence collected, such as to further diplomatic or political objectives, or to enhance relations with a partner.⁵⁸ The influence of politics is important in intelligence; the decision whether to enter intelligence relationships tends to be subservient to political or military interests. The economics of international trade again apply to illuminate the complexity of decisions to trade; comparative advantage can result in obtaining many granular components of a larger product from many trading partners, and so too in furthering national security it can be more efficient for

⁵⁶ Walsh, 6-7.

⁵⁷ Former member of Canadian intelligence community, In-Person Interview with Author, November 2012.

⁵⁸ For support of this concept, see Richelson, 311-315, and Sims, 202-203.

a powerful state such as the United States to buy or trade for intelligence components from other states rather than generate everything itself.

Intelligence relationships vary with respect to three characteristics: level of formalization, size of membership such as bilateral versus multilateral, and power distribution among partners.⁵⁹ The first element is common to alliance theory as well as intelligence sharing; relationships may either be codified through written agreements or exist through informal frameworks or understandings. Second, bilateral and multilateral intelligence-sharing relationships both are common. Multilateral agreements may grow from existing bilateral agreements, as when UKUSA emerged from BRUSA. Bilateral relationships are the most common and often the most productive form of intelligence alliance; however, multilateral cooperation is frequently employed to address common threats, with one example being terrorism.⁶⁰ Multilateral relationships have numerous shortcomings, including the increased costs of dissemination of information, and tending to move to the lowest common denominator, wherein the least trustworthy member of the group tends to indirectly determine the quality of product exchanged.⁶¹ Trust is a key element of intelligence-sharing relationships that can have a profound effect on the arrangement's scope and longevity. Finally, power distributions varies widely, as relationships can be between powers of vastly differing military or political strength or intelligence capability. Any of these possibilities can give one partner disproportionate influence or control.

⁵⁹ Richelson, 308-310.

⁶⁰ Lefebvre, 529.

⁶¹ Sims, 202.

1.2.2 Selecting targets: Intelligence collection on friendly states

Intelligence sharing is valuable for all states; comparative advantage and the pooling of resources ensure that states will glean more from intelligence in absolute terms if they share with others than if they work alone, refusing to share and thereby cutting themselves off from potential benefit from others' intelligence resources. In relative terms, the strongest state may gain from purely single-handed competitions so conversely, an alliance may strengthen all of its members against all or any of their rivals. The extensive collaboration between Five Eyes member states' intelligence agencies and those of other nations helps all parties. German counterespionage does not appear sufficient to act autonomously without outside support; it is indebted in recent years to intelligence sharing with the Americans and NATO to catch foreign agents operating on German soil and also terrorists working against it. Germany's domestic intelligence agency, the Federal Office for the Protection of the Constitution (BfV) is aware of substantial espionage by foreign countries within Germany, notably Russia, China, and the Middle East, and intelligence from friendly states has given Germany an advantage in tracking them down.⁶²

To conduct espionage on friendly states or allies is not a new phenomenon. One motivation is as a safeguard against an ostensibly friendly state's actions not matching its words. King Philip II of Spain and the Pope spied on each other as the Spanish Armada set out for Britain; the two did not completely trust each other despite being on the same side, and wished concrete evidence that the other would fulfill his promises.⁶³ Mutual espionage helped the alliance survive. Another salient example involves two Five Eyes members, in the years before

⁶² Jörg Diehl, "Counterespionage Pushed to Step Up", *Der Spiegel*, 31 October 2013, <http://www.spiegel.de/international/germany/german-counterintelligence-pushed-to-do-more-to-fight-nsa-spying-a-931135.html>.

⁶³ Jennifer Sims, "I Spy... Why Allies Watch Each Other", *Foreign Affairs*, 6 November 2013.

they reached the level of trust upon which the relationship is based. The United States and United Kingdom, before World War II, collected intelligence on each other despite being friendly.⁶⁴ These examples demonstrate that bonds of trust between states are rare; espionage provides a safeguard to ensure that actions match words.

Intelligence historian and former analyst Mark Stout identifies only three circumstances in which states would not collect intelligence on each other. One is a situation in which countries have absolutely no interest in each other; examples include small states in different areas of the world, such as Tonga and Benin. The second category is the Five Eyes relationship, where member states have a level of common ground and trust, and transparency and insight into each other's affairs, that negate the benefit of spying on one another. Stout's third category, which is debatable, is a situation such as the Warsaw Pact in which one state has penetrated so far that espionage by the latter would be easily detected; this is contestable as the dominant state still would have an incentive and means to monitor the victim to verify compliance.⁶⁵

Collecting intelligence on other countries with which one is allied, or at least friendly, has values beyond ensuring that intentions match words. A second motivation is for State A to detect activities from friendly State B against it. Thus, in 2009, Italy convicted 23 Americans for espionage, aimed at a terrorist in the country; the Italian police obtained this information by monitoring American cellphone traffic, despite the US and Italy being friendly powers.⁶⁶ A third motivation is detecting third party's intentions through a friendly state's communications. Despite reasonably friendly relations, Britain monitored American cable traffic in World War I, thereby unearthing the Zimmerman telegram, in which the Germans – communicating to their

⁶⁴ Alexander, 3.

⁶⁵ Mark Stout, "International Agreements Not To Spy", H-Intel, 11 November 2013.

⁶⁶ Sims, "I Spy... Why Allies Watch Each Other".

embassy via the American State Department – requested that Mexico attack the United States.⁶⁷ This intelligence aided both the British and the Americans but was obtained through collecting intelligence on the communications of a friendly state.

In *Casablanca*, a police officer states “I’m shocked, shocked to find that gambling is going on in here!” then turns to accept his winnings from a clerk. The situation resembles the international outcry over the 2013 Edward Snowden revelations; states expressed outrage at espionage being conducted towards them when they engage the same activities to the extent of their capabilities. The *Casablanca* reference is not unique to this assessment; media commentators and academics have commonly applied the comparison and noted the irony of states objecting to activities they privately value when done themselves.

Sims scolds states that have condemned the NSA’s actions, stating “allied governments, which know their own intelligence histories well, would do best to respond to disclosures with temperance instead of heated rhetoric.”⁶⁸ As she rightly implies, other states are conducting the same espionage, they just have not been exposed. Meanwhile, states that are not monitoring others’ communications lack the ability, not the will.

In the wake of the Snowden disclosures, former U.S. Secretary of State Madeleine Albright invoked a conversation between herself and a French diplomat at the United Nations in which it was evident that the diplomat was aware of comments she had made to a select few American officials, which he could only have been known through intercepts of her communications.⁶⁹ One of Chancellor Merkel’s predecessors, Helmut Schmidt, spoke publicly in

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Howard LaFranchi, “How the global spy game is changing”, *Christian Science Monitor*, 17 November 2013, <http://www.spiegel.de/international/germany/german-counterintelligence-pushed-to-do-more-to-fight-nsa-spying-a-931135.html>.

support of the theme held in this analysis: states target the communications of friendly states as a natural course for safeguarding national security. These disclosures were no cause for outrage and that when Schmidt was in office he had always taken for granted that his communications were being intercepted, including by friendly states.⁷⁰

Moreover, many states criticizing Five Eyes activities have benefitted from intelligence sharing with them. States that have publicly condemned American espionage into their communications, such as Germany and France, have supported American espionage in pursuit of targets of mutual interest.⁷¹ One example is German intelligence collaboration with the North Atlantic Treaty Organization and especially the United States that unmasked Heidrun and Andreas Anschlag, agents working for the Russian foreign intelligence service (SVR).⁷²

Lucas notes that the United States is one of the few countries in the world that is trusted enough to honour a no-spying arrangement. This provides a notable contrast to countries such as Germany and France, which bristle at their communications being targeted by Five Eyes but few would trust to be part of a no-spying agreement.⁷³

Sims presents five compelling justifications for collecting intelligence on friendly states: “to protect interests that an ally disregards, to guard against double-dealing or betrayal, to protect against allied vulnerabilities, to guard against surprise stemming from diverging interests, and to protect against a good ‘friend’ simply getting things wrong.”⁷⁴ Understanding one’s allies is essential and often only manageable when intelligence supplements diplomacy. Sun Tzu’s

⁷⁰ Ibid.

⁷¹ Stratfor, “What’s Actually Interesting About the Latest Snowden Leak”, *Stratfor*, 29 October 2013.

⁷² Jörg Diehl, “Counterespionage Pushed to Step Up”, *Der Spiegel*, 31 October 2013.

⁷³ Edward Lucas, “It’s time to blow the whistle on Edward Snowden”, *Politico*, 28 January 2014.

⁷⁴ Sims, “I Spy... Why Allies Watch Each Other”.

arguments demonstrate the critical importance of knowing one's allies, as an extension of knowing oneself, in order to achieve success.⁷⁵

1.2.3 Integrating Theories of Intelligence Sharing

The economic framework of comparative advantage in international trade underpins this study. This concept, explained at the outset, demonstrates the incentives for states to engage in trade of intelligence products, as with any other, to maximize efficient use of resources through specialization and increase access to products. To this can be added the international relations theories of realism and liberal institutionalism which further illuminate state interactions on the international stage and have valuable applications for intelligence sharing.

All participants in intelligence-sharing relationships derive some benefit from the arrangement. In trading relationships, each party ends up with a net benefit through increased access to goods or services. The motivations for sharing intelligence are both economic and a response to the global threat environment. Intelligence-sharing incentives, characteristics, and theory will be examined in detail later on. In brief, multilateral trade benefits all parties.

A key difference between international trade in goods and in intelligence sharing stems from the security implications of the latter products, and the secrecy inherent in intelligence. In multilateral trade, economics dictates that the more states or people or firms are involved, the greater the gains for all parties. There are high risks, however, in trading intelligence with countries with whom one does not have an established trust, or mutual national interests. The Five Eyes member states have managed long-lasting and mutually beneficial intelligence sharing precisely because the five states possess substantial mutual national interests.

⁷⁵ Sun Tzu, *The Art of War*, Ralph D. Sawyer, translator, Boulder, Colorado: Westview Press, 1994.

The global threat environment provides a clear incentive for trade in the intelligence realm. Modern threats show no regard for the sovereign state system. Many, notably terrorism, transcend national borders. Effectively countering such threats therefore requires a transnational strategy. In the realm of intelligence, states multiply their available intelligence through sharing with reliable partners.

Threats to survival, mitigated by intelligence operations, are a different challenge than those faced in traditional international trade. Most goods and services are not traded with the objective of bolstering national security. Intelligence sharing must be undertaken with safeguards against the product being traded falling into the wrong hands and being wielded against the home country. Thus, additional theories will be incorporated to further examine the framework around when and how states decide to trade intelligence.

Realists believe that states operate in a self-help system and are motivated by national security interests.⁷⁶ Intelligence sharing lets states expand their resource capabilities to address threats to national security while ultimately relying on their own capacity, and intelligence practitioners often demonstrate a realist mindset⁷⁷. States functioning as intelligence partners are perceived as allies with mutual interests, rather than friends, and the understanding is that of cooperation in the context of perpetual, inevitable competition.⁷⁸ Sims notes that realism does not preclude cooperation, drawing a parallel to international alliances, in which cooperation exists within an overarching system of anarchy.⁷⁹ Svendsen contends that realism cannot explain non-reciprocal intelligence arrangements,⁸⁰ but a state might opt for non-material returns on

⁷⁶ Svendsen, 716.

⁷⁷ For example, see Sims, "I Spy".

⁷⁸ Former member of Canadian intelligence community, In-Person Interview with Author, November 2012.

⁷⁹ Sims, "I Spy", 196.

⁸⁰ Svendsen, 717.

intelligence product. A sample scenario involves a militarily powerful, and diplomatically influential, state which provides intelligence products to a smaller, interdependent state, with the simple intention of influencing the latter's policy. This situation still can be explained through realism: the powerful state bends the smaller state to its will to increase its own relative power and security.

In contrast to realists, liberal institutionalists such as Keohane believe that international institutions and regimes can facilitate international cooperation. Celeste Wallander's study of international institutions focuses on the potential of international alliances to become security institutions in themselves, and why they outlast the original reason for their existence.⁸¹ These arguments are directly applicable to intelligence cooperation, with a prime example being UKUSA, which was established in 1948 to address threats specific to the Cold War but persists in the present day with strong commitment from its member states. UKUSA provides a strong example of how international cooperation can become institutionalized and outlast its original founding purpose.

The most compelling theoretical approach to cooperation within the intelligence domain is to integrate economic theories of international trade with the international relations theories of realism and liberal institutionalism. As reflected by studies of intelligence operations and practitioner approaches, intelligence at the lower, operational levels reflects the basic tenets of realism. At the broader strategic and policy levels, additional theories make a valuable contribution to understanding state behaviour, invoking values, norms, and the power of institutions to influence action. Trust plays a key component in intelligence sharing, where the stakes can be higher than in other forms of international trade, given the potential for the traded

⁸¹ See Wallander.

product to compromise the provider's security should the recipient prove unreliable. Having examined the applications of international relations theory to intelligence sharing, this study will proceed to analyze a particular example of participation in intelligence sharing – Canada in Five Eyes – with regard to theories of international trade.

1.3 Contribution to the Literature

This analysis is the first to apply the concept of comparative advantage to Canadian participation in intelligence sharing, and it is the first to examine Canadian signals intelligence with reference to the original UKUSA materials. The few authors who have explored Canadian intelligence as part of the integrated Western effort during the Cold War have been hampered by high confidentiality regarding intelligence sharing. A 2005 dissertation by David Perry had an objective similar to this study, analyzing the relationship between Canadian foreign policy and Canadian intelligence activities. While Perry's work dwells at length on Canada's intelligence agencies and the Five Eyes alliance, it suffers from a lack of access to the Five Eyes material, instead relying primarily on the work of Wesley Wark.⁸² Speculation over the details of Five Eyes has been wide-ranging in the literature, with one respected intelligence historian, Matthew Aid, even suggesting that no formal agreement may have existed.⁸³

This paper makes a new contribution to the literature because it incorporates details from the original agreement, which was declassified in June 2010 and has not yet been systematically investigated. The declassified files confirm speculation within the literature, correct errors, and

⁸² See David G. M. Perry, *Quid Pro Quo or National Security? Are Canadian Interests or Alliance Influences Paramount in Canada's International Intelligence Relationships?*, Dissertation, (Ottawa: Library and Archives Canada, 2005).

⁸³ See Kurt F. Jensen, *Cautious Beginnings: Canadian Foreign Policy 1939-1951*, (Vancouver: UBC Press, 2008), 168.

provide a trove of details about the precise terms of the agreement. The documents reveal the depth of coordination between the member states' SIGINT entities, and the heavy restrictions placed on nations incorporated as "Third Parties". The main contribution the newly-available materials make to the examination of Canada's role is that they demonstrate Canada's importance from the perspective of its allies. The documents show the treatment of Canadian SIGINT capabilities with British-American negotiations, and the emphasis placed by the Americans on bilateral negotiations with the Canadians. This evidence clearly indicates that Canada was incorporated into the agreement on different terms than the other Commonwealth members – Australia and New Zealand – for reasons of historical contributions, culture, and strategic location.

This analysis further incorporates other evidence which has not been fully exploited in the literature, notably from interviews, recent disclosures, and existing archival materials. First, the author obtained insight into the dynamics within the Canadian and Five Eyes intelligence communities through speaking with individuals experienced in the area, both on the record and anonymous. While individuals who have worked in the intelligence realm operate under constraints when speaking publicly, the interviews provided general guidance for framing the inferences gleaned from the archival materials. Secondly, additional insights derive from unauthorized disclosures, primarily the Snowden materials that emerged into the public domain in 2013. These materials were not intended for public view and can therefore provide unvarnished insights into intelligence activities; given they are now accessible through the media, they were incorporated into this thesis in the interests of analyzing CSE's role within Five Eyes in as comprehensive a way as possible given constraints on information. Finally, these fragmentary pieces of information are coupled with the newly declassified archival materials, the

personal notes of William Eldridge Odom, Director of the NSA from 1985-1988, and declassified World War II decrypts produced by Canadian SIGINT operations that demonstrate concrete intelligence produced by Canada that was value by its allies.

Chapter 2: Origins of Canadian SIGINT and Intelligence Sharing

Throughout Canada's history of intelligence sharing, the country has been a net beneficiary. The quantity of intelligence it receives exceeds that which it provides. Nonetheless, Canada has made valued contributions that have complemented its allies' own intelligence products. Canada enabled itself to make worthwhile contributions to intelligence sharing through ensuring a comparative advantage in its autonomous signals intelligence capabilities following World War II, through the Communications Branch of the National Research Council, which in 1973 became the Communications Security Establishment. Valuable SIGINT capabilities have been essential for Canada to ensure its continued place at the table.

Signals intelligence is not the only source of intelligence, nor the most commonly considered. Why did Canadian policymakers choose a SIGINT agency as its primary source of foreign, independent intelligence?⁸⁴ Through analysis of existing scholarship and original wartime decrypts available through Library and Archives Canada, this research illuminates the importance of Canadian SIGINT following World War II and the reasons behind the creation of a Canadian signals intelligence agency.

After explaining Canada's focus on signals intelligence, and the context surrounding the decision to establish a SIGINT agency following World War II, this chapter explores in detail Canada's most prominent intelligence-sharing relationships. Through primary-source research into newly available files, this paper explains the framework within which Canada shares signals intelligence products, which could not be well understood until recently.

⁸⁴ "Independent" is used here to indicate independence from British intelligence, which hitherto had directed and provided the resources for Canadian intelligence operations. SIGINT was the first type of intelligence in which the Canadians withdrew from that model, with human intelligence gradually following suit.

2.1 Autonomous Canadian SIGINT: Historical Origins

Canada's signals intelligence capabilities originated in abilities the country developed through its subordinate role as part of an integrated intelligence effort in World War II. Until World War II, Canada was an intelligence consumer, leaving almost all foreign intelligence production to its allies. This approach can be attributed to, firstly, the belief that Canada was not under direct threat, and, secondly, a lack of understanding of SIGINT's potential as a strategic and military tool.⁸⁵ Only two exceptions resisted this rule: the successful signals intelligence effort conducted by the Canadian Corps on the Western front, and the Royal Canadian Navy's involvement in the Royal Navy's "Procedure 'Y'" involving the collection of wireless intelligence on the American and Japanese navies during the interwar years. During World War II, after requests by Britain and the United States, Canada initiated its own cryptographic operations to fill gaps in the other states' intelligence collection capabilities. American and British interest in Canada's SIGINT potential as early as 1937 is evident in the Library and Archives Canada materials on the origins of Canada's wartime signals intelligence organization, the Examination Unit.⁸⁶

The Examination Unit, established in June 1941 as part of the National Research Council, allowed Canada to significantly contribute to Allied signals intelligence efforts against the Axis powers, despite limited resources. Nonetheless, Canadian SIGINT depended on assistance and oversight from the British and the Americans. Canada intercepted communications traffic through several monitoring stations, including one at Rockcliffe, near Ottawa, and the Hydra station at Camp X – a base that also served as an agent training facility – between Whitby and

⁸⁵ Wark, 643.

⁸⁶ Library and Archives Canada, Communications Security Establishment, RG24, "Examination Unit Files (1939-46)", volume 29164.

Oshawa, Ontario. Early Canadian targets included Vichy French communications and low-grade German agent traffic. Once Japan entered the war, Canadian targets expanded to include Japanese diplomatic traffic. Declassified World War II decrypts show important messages for counterespionage, such as details on German and Japanese agents in North America, and evidence of Canadian intelligence sharing.⁸⁷ The Rockcliffe intercept station, for example, read 740 German messages by 1941 and produced significant information on German spying in the West, including monitoring 52 enemy agents.⁸⁸

The Royal Canadian Navy and the Canadian army in Europe both were engaged in SIGINT collection efforts and in military Ultra: the secret and immensely successful cryptographic program that decrypted communications sent using the complex Enigma machines. Although this was primarily a British achievement, Canadians and Americans were involved in the program. Indeed, the Royal Canadian Navy was the only non-American and non-British service to control any allied theatre of war where it integrated signals intelligence and operations at a high level of command. Canadian SIGINT successes across multiple intelligence domains during World War II were instrumental in encouraging the Canadian military to invest in SIGINT capabilities and drive the SIGINT effort.

Canadian wartime SIGINT was not autonomous, instead depending on British and American expertise and technology, with the British controlling the Hydra station, and a British codebreaker, Oliver Strachey, heading the Examination Unit, Canada's wartime cryptographic organization. Intelligence sharing had previously suffered from the initial appointment of Herbert Yardley to lead the Examination Unit. Yardley, a former head of the Black Chamber – the

⁸⁷ See Library and Archives Canada, Communications Security Establishment, RG24, "Examination Unit Files (1939-46)", volumes 20306 and 20307.

⁸⁸ Wark, 643.

Americans' army cryptographic organization between 1918 and 1928 – had broken acrimoniously with the intelligence community and was regarded as highly unreliable. Due to Yardley's past indiscretions, the British and Americans would not share intelligence with Canada until he was removed from his position; they feared jeopardizing wartime SIGINT operations.⁸⁹ Yardley was subsequently replaced by Strachey. Appointing a member of the British intelligence community to oversee Canadian SIGINT operations was a means of reassuring British intelligence as to Canada's reliability within the integrated intelligence effort.

A declassified assessment of the Examination Unit compiled in 1945 by its staff acknowledges the Canadian reliance on allied expertise and also identifies American SIGINT as “almost equally beholden to the U.K. for a start in many systems”.⁹⁰ As a convenient by-product, the Americans were “that much the more willing to give Canada every assistance” in developing its own SIGINT capabilities.⁹¹

Notwithstanding reliance on and control by the superior British and American cryptographic organizations, the Canadians achieved modest SIGINT successes even before the outbreak of the war. The Examination Unit archives include notes from a meeting in London in 1937 regarding “Dominion Co-operation in Interception”, which centred around establishing liaison for Commonwealth SIGINT units to work with the British. Canada engaged in peacetime SIGINT collection, notably on Japanese merchant shipping in the northern Pacific. The British considered Canadian commercial SIGINT to provide good value, whereas other Commonwealth countries fared worse in the assessment; New Zealand's representative was instructed to change to a new target that might be more profitable, South Africa's interceptions arrived too late to add

⁸⁹ Wark, 648-9.

⁹⁰ Library and Archives Canada, RG24 Vol 29166, 46.

⁹¹ Ibid.

value, and Southern Rhodesia was instructed to discontinue its SIGINT attempts as it was not managing to intercept government traffic.⁹²

The Canadians also were learning from the Americans, who saw potential in Canadian SIGINT. A letter from Canadian Lt-Col H.E. Taber, Acting Director of Signals for Chief of the General Staff, to Col. H.F.G. Letson, Canadian Military Attache, Canadian Legation, Washington, 11 November 1940, reported on a meeting in Washington in which it was demonstrated that the Canadians intended to emulate American SIGINT practices in establishing their own cryptographic unit in Canada – which would be the Examination Unit.⁹³

Canada's value in World War II was aided by geography. Once Japan entered World War II through its December 1941 attack on the United States at Pearl Harbour, Canada's Pacific intercept stations and the availability of Canadian resources for cryptologic purposes increased Canada's significance to the Western intelligence effort. Britain's shortcomings in cryptanalysis against Japanese communications, due to resources and geography, were a strong motivator for it to engage in intelligence-sharing alliances.⁹⁴ Canada was well-placed to capitalize on its ally's need. Collecting SIGINT on the Far East helped Canada enhance its status with Britain, providing a means of trade in return for British intelligence on the German Abwehr intelligence agency. Canada was a reliable ally due to its dependence on British guidance and expertise and the close alignment of its national interests and priorities in the war with those of Britain. Britain directed the choice of Canadian targets; however, External Affairs negotiated and received concessions from Britain, notably in the form of a guaranteed intelligence exchange.⁹⁵

⁹² Library and Archives Canada, RG24. Vol 29164: Examination Unit, WWII – 9 Pt. 1: XU Correspondence 1939-1941, Appendix A.

⁹³ Ibid.

⁹⁴ Stephen Budiansky, "The Difficult Beginnings of US-British Codebreaking Co-operation", in David Stafford and Rhodri Jefferys-Jones, eds., *American-British-Canadian Intelligence Relations 1939–2000* (London: Frank Cass, 2000), 53.

⁹⁵ Wark, 654.

In the Pacific theatre, however, some of the Examination Unit's Pacific activities duplicated American efforts, and its Far East operations were incorporated under American control in 1942.⁹⁶ Canada had a means of tradable intelligence that made it valuable to its allies. It was still the junior partner in its alliance with Britain, but not as clearly as with the United States, where it targeted traffic squarely in the area of primary American interest, and the Americans had a clear advantage in resources.

From 1943 onward, the British and the Americans conducted bilateral intelligence sharing through the BRUSA agreement, signed on 17 May of that year. Under BRUSA, the British were tasked with German communications, and the Americans with Japanese.⁹⁷ It is a demonstration of Canada's utility in World War II intelligence sharing that, due to its geography, it was capable of collecting noteworthy signals intelligence on both targets. Equally noteworthy is the fact that the Examination Unit focused on collecting Japanese military traffic in China,⁹⁸ a secondary set of communications that held interest for some allied intelligence agencies that was not being collected by other sources. This material was of no direct interest to anyone in Ottawa but was useful for trading purposes.

The final three years of the war allowed the Canadians to strengthen their position with respect to their intelligence partners. In January 1943, an agreement was reached that when any of the British, Americans, or Canadians intercepted a specific type of communication – namely, government traffic passed over commercial radio circuits – they would share the raw intercepts with the other two countries' cryptologic units. In 1945 the Examination Unit concluded that the

⁹⁶ Perry, 76.

⁹⁷ Bradley F. Smith, "Sharing Ultra in World War II", *International Journal of Intelligence and CounterIntelligence*, 2:1 (1988), 70.

⁹⁸ For example, Library and Archives Canada. RG24. Vol 29166: Examination Unit. WWII – 22: XU – Liaison with Washington. Notes on Discussions Held during Dr. Robinson's Visit to Signal Security Agency, May 17-20, 1945. These discussions included the setting of Canadian signals intelligence collection targets, including targeting communications in France and Northern China.

arrangement “worked very well and [was] greatly to the advantage of Canada”, given that its interception capabilities “decreased in relative importance” once the Americans ramped up their collection capabilities, and the Examination Unit came to rely heavily on its allies’ intercepts to fulfill its intelligence objectives.⁹⁹

There was a notable shift in Canadian intelligence relations over this period towards closer cooperation with the Americans. This was primarily due to geographic proximity, as reflected in the post-war self-assessment conducted by Examination Unit personnel.¹⁰⁰

The declassified files surrounding Canadian SIGINT from the end of WWII demonstrate the value of the intelligence product Canada was producing for its allies’ consumption, as well as showing how far Canada had come in terms of intelligence capacity since 1939. A 1945 assessment of the Examination Unit by its staff and affiliated government officials judged that Canadian SIGINT grew “[f]rom practically nothing in 1941” to a point in 1945 where Canadians “pulled our own weight” in the fields of French and Japanese traffic and “made many worthwhile contributions to the common pool of knowledge”.¹⁰¹ This demonstrates the tangible evolution in Canadian operations over the course of the war, from negligible contributions in the field of intelligence sharing to the point where Canada produced reliable products of considerable value.

The files also emphasize the recipients of Canada’s signals intelligence. Canadian SIGINT went not only to the British and the Americans, but also to Canada’s Department of External Affairs.¹⁰² Canadian SIGINT was critical not only as a means of trade with Canada’s

⁹⁹ Library and Archives Canada, RG24 Vol 29166, 47-48.

¹⁰⁰ Ibid, 46.

¹⁰¹ Ibid.

¹⁰² Ibid.

intelligence partners; it was valued by Canada's own policymakers in enhancing the information available for setting wartime policy.

2.1.1 Canadian Postwar Intelligence Planning

With the end of World War II, Canadian policymakers faced the question: should the government authorize an autonomous, peacetime foreign intelligence capability? Despite the value of Canadian SIGINT operations in World War II, their continuation was not a given in peacetime. However, immediately after the war, military and diplomatic officials recognized the value of having a SIGINT agency in peacetime, which became increasingly likely as Canadian policymakers acknowledged the Soviet Union as a growing threat. Canadian strategic assessments from 1944 onward identified the Soviet Union as the primary threat to North American security.¹⁰³ This threat assessment mirrors postwar Western negotiations around intelligence. The emphasis on the Soviet Union as the top threat and priority of postwar intelligence collection for the Western allies is evident in documents such as a 1948 British Joint Intelligence Committee paper identifying SIGINT collection priorities, with 45 of 52 involving the Soviet Union.¹⁰⁴

The attitudes of Canadian policymakers towards intelligence were influenced by a key episode in early Canadian postwar history: the Gouzenko Affair. On September 6, 1945, Igor Gouzenko, a clerk in the Soviet embassy in Ottawa, informed the Canadian government that he had purloined secret documents demonstrating aggressive Soviet espionage against the West. After initial incredulity and reluctance on the part of Canadian policymakers – most notably

¹⁰³ James Eayrs, *In Defence of Canada, Vol. III: Peacemaking and Deterrence* (Toronto: University of Toronto Press, 1980), 320.

¹⁰⁴ Jensen, 169.

Prime Minister William Lyon Mackenzie King – the Canadian government obtained the documents and found evidence of a grand-scale Soviet espionage system operating in Canada with a large number of operatives, Soviet and Canadian, collecting intelligence for the Soviet Union. The espionage focused on the atomic bomb program – supported by research in Montreal – and information regarding the U.S. Army’s strength and demobilization efforts.¹⁰⁵ The latter target demonstrated Canada’s importance to the U.S.S.R. due to its closeness with the U.S., both geographically and politically.

The Gouzenko Affair intensified Canadian policymakers’ focus on the Soviet Union as a threat to national security. It furthermore illustrated Canada’s strategic significance to the United States, since the Soviets recognized the valuable information they could obtain on their primary adversary, the U.S., through espionage within Canada. This situation intensified fears that the Soviets might see targeting Canada as a means to weaken the United States. These factors combined to convince top policymakers, particularly Mackenzie King, of the strength of the Soviet threat.¹⁰⁶ That conclusion strengthened policymakers’ motivation to work with the United States and United Kingdom so as to contain Soviet aggression. It also shaped Canadian views regarding intelligence.

Canadian decision making regarding intelligence revolved around two questions. First: should Canada conduct autonomous foreign intelligence? Second, what type of intelligence should be collected? The Canadian Joint Intelligence Committee was determined not to revert to prewar dependence on foreign states.¹⁰⁷ Policymakers in the Department of External Affairs such

¹⁰⁵ Mackenzie King, William Lyon, *William Lyon Mackenzie King Diaries, 1893-1950*, Ottawa: Library and Archives Canada, 1950. Accessed at: <http://www.collectionscanada.gc.ca/databases/king/index-e.html>, “1945”, 1202.

¹⁰⁶ Eayrs, 320.

¹⁰⁷ Barry Cooper, *CFIS: A Foreign Intelligence Service for Canada* (Ottawa: Canadian Defence and Foreign Affairs Institute, 2007), 14.

as Hume Wrong, future ambassador to Washington, and Norman Robertson, Under Secretary of State for External Affairs were sceptical initially about the value of peacetime collection and the ability of the military to collect it efficiently, whereas military officials emphasized SIGINT's substantial value in wartime.¹⁰⁸ DND representatives even suggested that reverting to dependence on Britain for intelligence would incur costs – in obtaining and processing the intelligence – equal to those involved in running an autonomous SIGINT agency.¹⁰⁹ Canadian policymakers ultimately decided to establish independent intelligence collection capacity after the war for reasons that mirrored their approach to foreign policy, because of the need to have an autonomous foreign policy after the war rather than taking their cues from Britain.¹¹⁰ The Americans strongly encouraged their decision to pursue autonomous collection.¹¹¹

In terms of which type of intelligence to collect, the phenomenon of *path dependency* clearly influenced both the Canadian military and civilian policymakers. Positive experience with SIGINT during the war combined with negative attitudes towards human intelligence, partly stemming from the Gouzenko Affair, encouraged the government to make SIGINT its primary source of foreign intelligence. The government decided to continue collecting foreign intelligence through SIGINT but not to create a dedicated foreign espionage agency along the lines of Britain's Secret Intelligence Service or the United States' Central Intelligence Agency.¹¹²

In these decisions, the issues of reciprocity and intelligence sharing were of paramount importance for Canadian intelligence officials and policymakers. This led them to resist a British plan for a joint Canadian-British SIGINT effort. Sir Edward Travis, Director of the British

¹⁰⁸ Jensen, 124.

¹⁰⁹ Jensen, 124.

¹¹⁰ Patrick Brennan, "Journalists and Post-1945 Canadian Foreign Policy", *Calgary Papers in Military and Strategic Studies*, Vol. 2, 2007, 102.

¹¹¹ Jensen, 127.

¹¹² Perry, 80.

Government Code and Cipher School (GC&CS), proposed a system under which Canada would provide raw decrypts to the British, who then would conduct the analysis. Several Canadian policymakers, however, such as External Affairs's Thomas Archibald Stone and Norman Robertson, discouraged this plan, emphasizing the need for Canada to have autonomous in postwar intelligence activities. Countries such as Australia and India had demonstrated a clear intention to conduct autonomous operations, and Canada must contribute its own products to avoid exclusion from intelligence sharing arrangements.¹¹³ This distancing from Britain in intelligence mirrored a broader trend in postwar Canada, in which the country departed from dependence on Britain and migrated towards independence and towards its powerful southern neighbour.

On the Commonwealth side, Canada was at an initial advantage. Canada and Australia both notably contributed to allied signals intelligence during World War II. Australia, however, was less integrated with American intelligence and little cooperation carried over after the war.¹¹⁴ During the war, conversely, Canada collected civilian intelligence valued by the Americans, such as diplomatic intercepts, and Canada set its postwar collection targets to match American interests. Another key factor was trust. The Americans and British considered Australia vulnerable because of revelations of Soviet penetration of the Australian government in the late 1940s. These fears had to be eradicated before full incorporation of Australia into the UKUSA alliance.

Intelligence sharing contributions were of paramount importance on the military intelligence side. Canada's military cryptanalytic head, Colonel W.W. Murray, supported

¹¹³ Jensen, 123.

¹¹⁴ For details on Australian intelligence and the Australian and American integrated wartime signals intelligence operations, see Edward J. Drea, *MacArthur's Ultra: Codebreaking and the War Against Japan, 1942-1945* (Kansas: University Press of Kansas, 1992).

accepting the British offer to transfer control of Hydra, the Camp X radio station near Oshawa, Ontario, to Canadians – which ultimately took place in 1947 – arguing: “it would enable us to make an acceptable contribution” to Allied intelligence sharing.¹¹⁵ Murray stated: “if we fail to contribute, we shall receive nothing.”¹¹⁶ Canadian cryptographers and policymakers understood that they must contribute to the pool to benefit from it.

Canadian intelligence efforts included developing independent enciphering capabilities – a move encouraged by Britain, to ensure communications security for its Commonwealth allies.¹¹⁷ Yet Britain still sought to keep Canada dependent on British cryptography as part of a unified Commonwealth approach led by London. It desired control over collaboration; Canada could still have its own enciphering capabilities but must depend on Britain to communicate these products to the Americans. Collaboration procedures produced great contention between the Americans and British in the UKUSA negotiations. Second, communications security, the defensive application of SIGINT, as opposed to the foreign intelligence collection capacity that was the objective of those pushing for autonomous Canadian SIGINT – and was the type of capacity that ultimately allowed Canada to be a valued member of UKUSA.

The push for independent intelligence collection and analysis prevailed in Canadian postwar decision making, which was the outcome strongly supported by the Americans. The minutes taken during UKUSA negotiation meetings demonstrate that the United States advocated for independent Canadian capabilities, strong Canadian operations, and a direct bilateral intelligence-sharing relationship between Ottawa and Washington, rather than Britain leading Canadian operations. Canada had different capabilities and access to targets than Britain,

¹¹⁵ Quoted in Jensen, 161.

¹¹⁶ Quoted in Perry, 89.

¹¹⁷ Jensen, 164.

which the Americans considered particularly important. Thus, when Canadian announced its intention to terminate collection on Japanese traffic by July 1945, the U.S. – still at war with Japan with no prospective end date – was dismayed at the prospect of losing Canadian intelligence collaboration against a common adversary. In an April 1945 letter from External Affairs representative George Glazebrook told Robertson that the Americans were determined that the two nations must “present a united front”.¹¹⁸

Such differences of opinion regarding Canadian intelligence, on the part of the British and the Americans, had been speculated upon in the literature, but the declassified UKUSA materials allow concrete examples. Some of the most salient material is from a meeting involving American army and navy intelligence officials and four British representatives. The Americans noted their interest in collaborating with the Canadians, and stated that the Canadian signals intelligence body’s relationship with the London Signals Intelligence Board should “not affect day to day collaboration” between the Americans and Canadians.¹¹⁹ The Americans continued to press the point, emphasizing that the Canadians might not accept subordination to Britain in their dealings with the Americans.¹²⁰

The “Principles of UKUSA Collaboration with Commonwealth Countries Other than the U.K.” in the 1955 revised UKUSA agreement, stipulate clearly the unique terms under which Canada was included. Principle four states that the American SIGINT board, the U.S.C.I.B., “will make no arrangements with any Commonwealth agency, *other than Canadian*, except through or with the prior approval of L.S.I.B.” (emphasis added). While the Americans were

¹¹⁸ Quoted in Jensen, 127.

¹¹⁹ National Security Agency, “UKUSA Agreement”, HW-80-01, 9.

¹²⁰ Ibid.

required to obtain “the views” of the British on specific issues, they could make bilateral arrangements with the Canadians without obtaining permission.¹²¹

The foundations for direct collaboration already were in place during the war. While in the early stages of the war the Examination Unit liaised with its American counterpart, the Signal Security Agency, through a GC&CS liaison officer in Washington, time constraints eventually led the organizations to engage each other directly from 1944 onward.¹²²

Previous scholarship, including a 2005 dissertation on Canadian signals intelligence, mistakenly suggests that Canada acceded to Britain’s request that it represent the junior Commonwealth partner in negotiations with the Americans.¹²³ Now, declassified documents reveal that, on the contrary, the United States pressured Britain to permit direct, bilateral negotiations between the Americans and Canadians, and the British ultimately conceded.¹²⁴ Moreover, in the notes from one of the original meetings laying the foundation for UKUSA – a joint meeting of US Army, US Navy, and British representatives – Canada is stated to have expressed “a desire to make arrangements with [the Americans] without consulting the British.”¹²⁵ The combination of American and Canadian demands led the British to exempt Canada from their standard negotiating protocol. SIGINT was one of the first areas where Canada broke from the British claims for dominance after the war.

The necessity for close cooperation between the Canadian and American militaries in the advent of war was a prime motivation for the American desire to pursue bilateral intelligence sharing.¹²⁶ There also is evidence of a cultural connection. An American State Department report

¹²¹ National Security Agency, UKUSA 1955 Revised Agreement, 47.

¹²² Library and Archives Canada, RG24 Vol 29166, 46.

¹²³ Perry, 90.

¹²⁴ National Security Agency, UKUSA Agreement, HW-80-01. 9.

¹²⁵ Ibid.

¹²⁶ Ibid, HW-80-10, 82.

referenced a common sentiment that Canadians were “less foreign” than citizens of other nations, including Britain.¹²⁷

The incentive to share intelligence with countries that are culturally similar parallels patterns observed in international trade theory. Research by economist Andrew Rose and others has revealed statistically-significant tendencies for countries to trade with others possessing common traits such as language.¹²⁸ Many factors drew Canada and the U.S. into an intelligence-trading relationship.

What was the end result of these negotiations on Canadian policy? Ultimately it led to the establishment of an autonomous peacetime SIGINT agency, the Communications Branch of the National Research Council. Created in 1946, the CBNRC had a dual mandate of collection and communications security; the latter had hitherto been provided by the British.¹²⁹ The military also established new intercept stations to enhance collection. Canada additionally took control of Hydra operations in 1947 in order to, as Robertson stated at the time, “make an acceptable contribution” to Allied intelligence sharing.¹³⁰ Canada’s geography allowed it to facilitate communications between its two major allies, with the Hydra station transferring materials between London and Washington.¹³¹

¹²⁷ Quoted in Richard J. Aldrich, “‘The Value of Residual Empire’: Anglo-American Intelligence Co-operation in Asia after 1945”, in *Intelligence, Defence and Diplomacy: British Policy in the Post-war World*, Richard J. Aldrich and Michael F. Hopkins, eds. (Essex, 1994), 227.

¹²⁸ Robert C. Feenstra, James R. Markusen and Andrew K. Rose, “Using the Gravity Equation to Differentiate among Alternative Theories of Trade”, *The Canadian Journal of Economics*, Vol. 34, No. 2 (May, 2001), pp. 430-447.

¹²⁹ Bill Robinson, “The UKUSA Community”, Technical Surveillance Counter Measures, 2003, Accessed 21 March 2012, available at: <http://www.tscm.com/cseukusa.html>, 1.

¹³⁰ Quoted in Jensen, 161.

¹³¹ Ibid.

2.1.2 Canadian Postwar Foreign Policy

The independence of Canadian policy must not be overstated. Canada's postwar decision making was heavily influenced by allied priorities and by the dual objectives of international cooperation through accommodation, and assertion of Canadian independence. Canada wished to distance itself from its colonial past and demonstrate its ability to make independent decision on foreign policy. Notwithstanding, it also sought cooperation with, and accommodation of, the major powers for the sake of international peace.¹³² At a Commonwealth conference in 1944, Prime Minister Mackenzie King demonstrated Canada's desire to be an international player but a nonetheless subordinate one, declaring: "Although the special responsibility of the four great powers for maintaining political security must be recognized, nevertheless an effort should be made to give the smaller powers a larger share in the direction of the many functional organizations which will be set up".¹³³

Larry Collins identifies key limitations to Canada's ability to pursue its objectives. First, it was a middle power, and second, the proximity and power of the U.S. influenced Canadian policymakers' policies and perceptions of the U.S.S.R.¹³⁴ As explained by Bercuson and Glazov, following the U.S. lead was the logical response to mistrust of the Soviet Union within the Department of External Affairs. Canadian policymakers, seeing the Soviets as inherently aggressive and driven by ideology towards the objective of world domination, turned to U.S. hegemony as the only guarantee of international peace.¹³⁵

¹³² Donald Page, "Getting to Know the Russians, 1943-1948" in *Canadian-Soviet Relations 1939-1980*, Aloysius Balawyder, ed. (Oakville, Ontario: Mosaic Press, 1981), 26.

¹³³ Quoted in Isabel Campbell, *Unlikely Diplomats: The Canadian Brigade in Germany, 1951-1964* (Vancouver: University of British Columbia Press, 2013), 25.

¹³⁴ Larry Collins, "Canadian-Soviet Relations During the Cold War", in *Canadian-Soviet Relations 1939-1980*, Aloysius Balawyder, ed. (Oakville, Ontario: Mosaic Press, 1981), 41.

¹³⁵ Jamie Glazov, *Canadian Policy Toward Khrushchev's Soviet Union*, Montreal: McGill-Queen's University Press, 2002, 12, and David Bercuson, "'A People So Ruthless as the Soviets': Canadian Images of the Cold War

Over the course of WWII, the U.S.S.R. was increasingly aware of U.S. influence on Canada's economy and military. By 1945, Moscow began to expect another war to break out in the middle future, believing that imperialist instincts lingered in the capitalist countries.¹³⁶ Despite commendation of Canada's military efforts in the late stages of the war, the Soviet media provoked the Canadian government with claims that the U.S. was building bases in Canada from which to attack the Soviet Union.¹³⁷ Canada historically had been an area of British-American contention, which made it important to the Soviets, as did its geography; its location was ideal for monitoring the relationship between Britain and the U.S.¹³⁸ While advising a moderate approach towards the Soviets, the Canadian ambassador to Moscow, Dana Wilgress, noted Soviet attempts to spy on him and other members of the Diplomatic Corps before the war had ended.¹³⁹

Intelligence revelations in the late 1940s convinced reluctant Canadian policymakers that the Soviet Union directly threatened Canadian national security. This resulted in political support for building intelligence capabilities, and furthering diplomatic relationships with likeminded countries, which contributed to Canadian participation in what would become the North Atlantic Treaty Organization (NATO).

In 1948, British, American, and Canadian representatives held secret meetings that established preliminary plans for a concrete treaty for collective Western security. These negotiations expanded to include representatives from several Western European countries. Participation in NATO from the very beginning, including the initial stages of its formulation, let

and the Soviet Union, 1946-1950", *Canada and the Soviet Experiment*, David Davies, ed. (Toronto: Canadian Scholars' Press, 1994), 90.

¹³⁶ Joseph Laurence Black, *Canada in the Soviet Mirror: Ideology and Perception in Soviet Foreign Affairs, 1917-1991* (Ottawa: Carleton University Press, 1998), 165.

¹³⁷ *Ibid*, 31

¹³⁸ *Ibid*, 167-8.

¹³⁹ *Page*, 31.

Canada tangibly demonstrate its commitment to Western collective security. The NATO signatories committed to recognizing an attack on one member as an attack on all and to respond accordingly, as well as to help other members develop their capacity to resist armed attack.¹⁴⁰ In the early stages of the treaty Canada closely collaborated with the two nations with whom it was becoming intelligence partners in the nascent UKUSA alliance: the United States and the United Kingdom.

The formation of the North Atlantic Treaty illustrates the breadth and complexity of Canadian policy in the early Cold War. General Charles Foulkes – an ardent SIGINT supporter – sought to prevent Anglo-American dominance of the organization, and ensured Canada’s inclusion in decision-making centres such as the Strategic Command Group.¹⁴¹ Canadian decision-making implied that Canada might not sign the North Atlantic Treaty unless it included political, cultural, and economic references, which were embodied in article 2. Prime Minister Mackenzie King particularly favoured this clause because Canada was negotiating a bilateral customs union with the U.S. He feared this arrangement risked a level of economic integration that Canada might not survive, and he saw the economic elements of article 2 as supplanting the proposed union, given that they would satisfy the objective of implementing a mechanism to strengthen economic ties between the two countries.¹⁴² Article 2 ultimately did not have a tangible impact, but Canada’s demands on the issue illustrate how it voiced Canadian interests and asserted independence in foreign policy making.

¹⁴⁰ North Atlantic Treaty Organization, *The North Atlantic Treaty* (Washington, D.C.: North Atlantic Treaty Organization, 1949) <http://www.nato.int/docu/basicxt/treaty.htm> (Accessed March 13, 2009)

¹⁴¹ James Eayrs, *In Defence of Canada, Vol. 4: Growing Up Allied*, (Toronto: University of Toronto Press, 1980), 135.

¹⁴² Robert Bothwell *The Big Chill: Canada and the Cold War*, (Toronto: Irwin Publishing, 1998), 29.

In all of these negotiations, Canada pursued independence and autonomy in its contributions to collective security, despite being influenced by the priorities of its more powerful allies, the United States and the United Kingdom. This behaviour is clearly mirrored in the intelligence domain.

2.1.3 SIGINT in the Context of Canadian Postwar Priorities

Canadian SIGINT followed American and British priorities when determining collection targets. This fact emphasizes that Canadian SIGINT is a tool for furthering cooperation and intelligence sharing, as a means of maintaining ties and access to our allies' intelligence. Britain and the U.S. emerged from World War II strongly valuing SIGINT, and Canada – reliant on intelligence sharing to ensure its own security – recognized that as its best bet as a product worth sharing with its allies. Canada needed British and American trust, technical support, and intelligence products to ensure its own security in the postwar threat environment.¹⁴³ The Canadian military also advocated autonomous Canadian intelligence collection to ensure that the country did not rely exclusively on other powers for information.

Canada's postwar aims for SIGINT were twofold: firstly, ensuring Canada's importance to its allies in the intelligence realm, and, secondly, providing an autonomous source of intelligence, rather than being fully reliant on other powers. Whereas Americans and British pursued intelligence as an end in itself, for Canadian decision makers much of its significance was as a means to different ends. They needed some intelligence to formulate rational policy and military strategy, which could be achieved both through autonomous collection and trading with

¹⁴³ Jensen, 128-129.

other powers; however, an equally powerful motivation was to collect usable material in order to enhance Canada's standing with its more powerful partners.

This led to the creation of the CBNRC in 1946. When it began operations, the CBNRC was tasked with directing the SIGINT effort. In November 1948, the Senior Committee – soon renamed the Communications Security Board – was formed to direct SIGINT-related policy.¹⁴⁴ Resistance to this body within Canadian SIGINT included the objection that it was being formed only to mirror the British structure.¹⁴⁵ While Canada had won the struggle to establish autonomy in its SIGINT activities, British influence – and concern over such influence – were on the minds of policymakers and SIGINT officials in their decision making over the program's structure.

The CBNRC represented a new level of autonomy from foreign intelligence authority, but not an end to dependence on other branches of Canadian national security. The Canadian army and navy were integral parts of Canada's nascent autonomous SIGINT operations, including manning of the intercept stations. By the end of the 1940s, Canada had functioning interception stations in Churchill, Manitoba; Coverdale, New Brunswick; Fort Chimo, Quebec; Aklavik, Northwest Territories; Whitehorse, Yukon; and Vancouver, British Columbia. This expanded in the 1950s to include Frobisher Bay, Baffin Island; Masset, British Columbia; Gander, Newfoundland; Ladner, British Columbia, and Alert, Northwest Territories. Canada subsequently closed some stations and added others, including new bases in Inuvik, Northwest Territories; Bermuda; and Flin Flon, Manitoba.¹⁴⁶

While establishing autonomous SIGINT capabilities, Canada simultaneously was involved in preliminary negotiations for the UKUSA alliance. From the creation of the CBNRC

¹⁴⁴ Ibid, 163.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid, 164-165.

onward, through to the organization's transformation in 1973 into CSE, Canada actively engaged in signals intelligence operations, preserving the official autonomy established in 1946 while maintaining a close relationship with its intelligence partners.

2.2 Intelligence-sharing: Canada's relationships

The motivations for intelligence sharing are founded in gains from trade. Even states with superior abilities in absolute terms, such as the United States, can benefit from the knowledge amassed by others, and the ability for lesser powers to create comparative advantages or to handle tasks essential for the common good. These events have accompanied a historical shift in states' approach to intelligence, from unilateral operations to an integrated intelligence-sharing foundation.

Canada's most prominent intelligence-sharing relationship since World War II has been Five Eyes, or UKUSA; however, it also participated in other alliances that were formed with a military function but contain an intelligence component. After examining UKUSA, this section considers an alliance in the latter category: the North Atlantic Treaty Organization.

2.2.1 The Alliance: UKUSA, or Five Eyes

UKUSA – now commonly known as Five Eyes¹⁴⁷ – is the world's most powerful multilateral intelligence-sharing relationship, unprecedented in its scope and longevity. The alliance has outlived its primary reason for existence – ensuring mutual security against the

¹⁴⁷ As outlined in the introduction, this study will address the alliance by its historical name, UKUSA, in the historical sections, and will employ Five Eyes in assessing the modern relationship.

Soviet Union. Still, to assess the current alliance one must understand its historical origins, a task facilitated by the recent declassification of the original negotiation materials.

UKUSA grew from the BRUSA agreement, in which Britain and the United States established intelligence-sharing protocols whose scope, while restricted, nonetheless exceeded any previous intelligence cooperation arrangement between the two countries. The agreement was a partnership of equals, but the Americans looked up to the British as the dominant party due to their SIGINT superiority over all comparable agencies during World War II – American cryptology was indebted to British expertise. Bradley Smith describes BRUSA as “one of the most remarkable acts of trust and cooperation ever achieved by two great powers” and “an accomplishment that has long, and rightly, been praised.” However, BRUSA “was not merely the product of good will, generosity, and farsightedness [but] also the result of American political opportunism and tough bargaining”.¹⁴⁸ More broadly, states undertake intelligence sharing for national security or political benefit, not altruism, and do not consider themselves “friends,” but rather allies with mutual interests.

BRUSA governed Anglo-American cryptologic cooperation for the duration of the war. After World War II ended, Britain and the United States extended their collaboration in intelligence generally to minimize uncertainty and danger, which soon took the form of facing the emerging Soviet threat, culminating in the UKUSA Agreement,¹⁴⁹ signed by American and British officials on March 5, 1946.¹⁵⁰ It established terms for intelligence sharing that endured, with amendments, throughout the Cold War and still apply today. A crucial modification of the

¹⁴⁸ Bradley Smith, 70.

¹⁴⁹ The British, Americans, and Canadians originally expected SIGINT collaboration to end after World War II, but the growing evidence of a Soviet threat inspired the continuation of intelligence cooperation. For more information, see Jensen, 167.

¹⁵⁰ See the original document, dated March 5, 1946: HW-80-4.

agreement after its initial formulation was the inclusion of three additional nations. The Dominions of Canada, Australia, and New Zealand were not formally part of the 1946 alliance; however, they were heavily involved and taken into account in the alliance's initial terms.¹⁵¹ Canada first, Australia second, and finally New Zealand were subsequently incorporated into UKUSA. When the agreement was formally revised in 1955, all five states were considered "UKUSA-collaborating" countries, effectively making them members of the informal alliance.¹⁵²

All five member countries were tasked with specific areas of the world to target, based on their geographic advantages. The two Pacific nations had valuable information to provide to their allies for struggles between the U.S. and U.S.S.R. and the potential for the spread of communism, while Canada was well-situated to provide valuable intelligence on the Soviet Union, as well as its European satellite states. There was precedent for Canada assuming responsibility for targeting a wide variety of locations due to its natural geographic advantage: at the 1946 Commonwealth SIGINT conference, Canada assumed responsibility for targeting Soviet communications, as well as collecting intelligence relating to Western Europe, China, other regions of Asia, and some areas of South America.¹⁵³ Other states, such as South Korea and Japan, also work with UKUSA to a limited extent and are deemed "Third Parties."

UKUSA grew out of a relationship of military allies during the war. The arrangement in essence is a manifestation of military relations within five Anglo-Saxon nations that have a strong level of cultural similarities and mutual trust. While established for the trading of SIGINT, UKUSA has expanded to include a vast array of intelligence and defensive agencies and

¹⁵¹ National Security Agency, UKUSA Agreement, HW-80-4, 8.

¹⁵² See 1955 revised UKUSA agreement; for example, Appendix J: "At this time, only Canada, Australia and New Zealand will be regarded as UKUSA-collaborating Commonwealth countries." In addition, Annexure J1 lays out "UKUSA arrangements affecting Australia and New Zealand."

¹⁵³ Jensen, 166.

departments within the five member states. The present security environment includes UKUSA – more commonly known today as “Five Eyes” – as well as AUSCANNZUKUS, a distinct military intelligence arrangement with the same five members. Handel’s and Ferris’s description of Five Eyes as historically marked by “competitive cooperation, and political strains” illustrates that the agencies have had differences but nonetheless have cooperated with each other with greater cohesion and at times with closer ties than with their own states’ militaries and intelligence agencies.¹⁵⁴

The alliance, while negotiated between five countries, was an agreement between five units within their respective governments, rather than one being made at the highest levels of these nations. These concerned operational details that were important for overall relations but not the highest levels of diplomacy between nations. This issue is reflected in American concern during the initial UKUSA negotiations, with respect to US-Canadian collaboration, that they take care not to “trespass on any agreement made between Canada and the U.S. at a higher level.”¹⁵⁵

The UKUSA alliance is an unparalleled example of intelligence sharing power. The existing scholarship concurs that UKUSA is the world’s most powerful intelligence alliance, in terms of level of integration, cooperation, and intelligence product produced. The cohesion of Five Eyes is partly explained by the alignment of member states’ foreign policy interests. They have their differences; however, over six decades the US, UK, Canada, Australia, and New Zealand forged an unprecedentedly strong and enduring alliance.

UKUSA in the present day – which will be referred to as Five Eyes – has expanded beyond its initial target – the Soviet Union – and its methods. The alliance includes a wide range of security-related elements in the five governments, from human intelligence to foreign affairs.

¹⁵⁴ Ferris and Handel, 112.

¹⁵⁵ National Security Agency, UKUSA Agreement, HW-80-1, 9.

One notable component of the relationship is Stongehost, a communications link among the five member states involving Canadian Forces intelligence liaison officers (CFILOs), a project brought to light by the 2012 Jeffrey Paul Delisle espionage case in Canada.¹⁵⁶ This level of integration influences member states' military operations abroad; as noted by Brigadier-General James Cox, the Canadian Forces "invariably operate within a Five Eyes intelligence framework" on missions abroad, notably in the War in Afghanistan.¹⁵⁷ Despite the expansion of intelligence mechanisms within the relationship, the strongest component remains SIGINT, particularly because the five member states face a common pressing threat in the cyber domain, when SIGINT organizations have evolved to take a leading role. UKUSA's evolution into the present day Five Eyes alliance and its applications for addressing present-day security threats are further explored later in this study.

2.2.2 Intelligence Sharing in the North Atlantic Treaty Organization

UKUSA is Canada's most important intelligence-sharing relationship but is not Canada's only alliance with an intelligence-sharing component. It is additionally important to acknowledge Canada's role in NATO. Whereas UKUSA was established directly as an intelligence-sharing relationship, NATO is a military alliance with an intelligence-sharing component. Participation in NATO has augmented Canada's significance in intelligence-sharing. NATO does not possess its own intelligence body, instead relying on members' contributions. As explained by NSA Director William Odom, intelligence is a "national responsibility in NATO" which involves multilateral collaboration.¹⁵⁸

¹⁵⁶ Cox, 8.

¹⁵⁷ Cox, 7.

¹⁵⁸ National Archives, United States of America. Container 25: National Security Agency, Daily Activity Logs, "William E. Odom Papers", Library of Congress, Manuscript Division, Washington, D.C., Folder 5, June 1985.

The three states with membership in both the formation of NATO and UKUSA – the U.K., the U.S., and Canada – formed an inner ring in NATO due to their multiple intelligence-sharing arrangements. Their SIGINT contributions to NATO intelligence were integrated, and coordinated through NATO’s Supreme Allied Commander Atlantic (SACLANT). The UKUSA documents lay out the terms for signals intelligence sharing within NATO.¹⁵⁹ These terms include clear stipulations for SACLANT collaboration in wartime, with the possibility of integrating the three states’ communications intelligence capabilities¹⁶⁰, an uncommon level of cooperation demonstrating the UKUSA alliance’s remarkable strength. The Agreement also clearly established that the members’ Operational Intelligence Centres would process and analyze each other’s intelligence¹⁶¹ – a practice of sharing production and analysis obligations that continues into the present day.

2.3 Intelligence Sharing: Middle Powers

International trade theory illuminates the motivations behind asymmetrical intelligence sharing – why states with far greater absolute capabilities have chosen to share intelligence with comparatively weaker ones. However, another element of the issues is the methods in which middle powers can leverage their capabilities into bilateral ties with more militarily powerful states to further their own national security.

This issue can be addressed by contrasting Canada with another country, Sweden, which managed to leverage its intelligence collection in different but similarly effective ways. Sweden may appear out of context in a study of Anglo-Saxon intelligence sharing. Other middle powers that may seem a more natural comparison are Australia and New Zealand – Canada’s fellow Five

¹⁵⁹ National Security Agency, “UKUSA Agreement”, HW-80-10, 58.

¹⁶⁰ Ibid, 81.

¹⁶¹ Ibid, 124.

Eyes partners. Sweden is not part of Five Eyes, which contributes to its value in this study; it provides a non-traditional example – a state not part of the Anglosphere or the former British Empire – that has similarly leveraged its signals intelligence for political and military gain.

The parallels between these powers are apparent in the approach to establishing collection targets. Through their study of Swedish signals intelligence, C.G. McKay and Bengt Beckman illustrate that as a middle power with limited collection capacity Sweden prioritized its limited resources into collection on a small number of priority targets, rather than comprehensive coverage possible for a larger country such as the United States.¹⁶² This is equally applicable to middle powers such as Canada, which, while geographically many times the size of Sweden, faced similar challenges in terms of cryptologic resources.

Sweden however has a dramatically different geopolitical context than Canada. While both powers possess modest but good quality intelligence, they have employed their comparative advantages for different objectives. Whereas Canada has used its SIGINT for *alliance tending* – notably bolstering its military alliances – Sweden has used it to support a political balancing act, helping ensure its *neutrality*.

During World War II, the great powers had well-known SIGINT achievements. The classic examples are Britain's triumphs against the German Enigma codes and American successes against Japan's Purple ciphers. Less recognized are the achievements of countries such as Sweden and Canada. Canada contributed to American and British intelligence efforts through its geographic advantage, and functioned as a junior partner with a product worth trading for, thereby bolstering its value in the military alliance. Unlike Canada, Sweden was not a combatant

¹⁶² See McKay and Beckman.

in these world wars, but like Canada, Sweden had SIGINT capabilities worth trading for. Sweden chose to leverage its SIGINT capabilities as an alternative to military contributions.

In the First World War, Sweden enhanced the ability to safeguard its neutrality by providing Germany and the other Central Powers with valuable information for the war effort, without overtly contravening neutrality with military action. Sweden's contribution was mainly to intercept Russian communications and pass them on to Germany. There is evidence – namely, decrypted telegrams that the Swedes sent to the Germans – that this cooperation continued until 1919. This intelligence conveyed information on Russian operations, negotiations, and messages from the Russian government to its diplomats abroad.¹⁶³ In the interwar period, Sweden's commitment to international intelligence-sharing continued. A Swedish intelligence memo in 1937 emphasized the need to build connections with “representatives for the cryptological services of foreign countries” and recommended obtaining “continuous information from foreign countries” about the organizations, approaches and resources used in SIGINT operations.¹⁶⁴

During WWII, the Swedes collaborated with the British, providing decrypted German communications to the British through the British naval attaché in Stockholm, Capt. Henry Denham. Swedish intelligence was valuable to Britain. For example, Swedish collaboration assisted the British in the successful quest to sink the battleship Bismarck. Moreover, a 1944 memorandum notes the particular value of German-Norwegian traffic intercepted by Sweden and conveyed to London. The collaboration was not always a top-level decision; much of the Swedish-British collaboration was due to decisions by Swedish military intelligence, rather than top officials.¹⁶⁵ Nonetheless, Sweden remained neutral, targeting communications on both sides,

¹⁶³ Ibid, 60-61.

¹⁶⁴ Quoted in Ibid, 80.

¹⁶⁵ Ibid, 226-228.

from the Germans and the Soviets to the British, French, and Americans, with the efforts in all cases meeting reasonable success. And just as the Swedes hedged their bets, their trading partners – notably Great Britain – likewise counted them among their intelligence targets.¹⁶⁶ Working too closely with either side in the war would have jeopardized Sweden's neutrality.

In both world wars Sweden was able to leverage its SIGINT capabilities to pursue its policy of neutrality and further its national security. As both Canada and Sweden demonstrated in WWII, SIGINT was a critical means to maintain ties and access to valuable foreign intelligence. These cryptological achievements translated into the postwar world; as with Sweden, Canada's efforts during World War II served to establish SIGINT as a key tool for furthering national security.

2.4 Conclusions

Since the 1940s Canada has had an autonomous signals intelligence agency which collects foreign intelligence and shares it with trusted partners, in an unparalleled example of enduring intelligence collaboration. Canada has been a valued producer of foreign intelligence, despite small absolute capabilities, through its SIGINT operations from World War II, and associated sharing with wartime, UKUSA, and NATO allies. This chapter has demonstrated the reasoning behind Canadian policymakers' selection of SIGINT as the country's primary source of foreign intelligence, and their decision to have an autonomous SIGINT agency rather than adhering to the Commonwealth model of reliance on the mighty British cryptologic operations that had achieved great success in World War II. Canadian archives reveal the internal debates

¹⁶⁶ Ibid, 239.

over establishing a SIGINT agency. UKUSA files illuminate the allies' negotiations over the role of Canadian SIGINT.

Before World War II, Canada had a small, though useful, SIGINT capability. Canadian foreign affairs and national defence policymakers had yet to properly understand SIGINT's potential as a strategic and military tool. That understanding evolved over the course of the war, with the military in particular strongly motivated to continue Canada's SIGINT operations. Canada shared raw decrypts with its more powerful allies, and increasingly relied on allied intelligence once the Americans ramped up their SIGINT capabilities in the later stages of the war and the SIGINT agencies of the Royal Canadian Navy and the army. Throughout the war, the Examination Unit relied on British and American technical expertise and oversight. Canada's value was primarily in geography, allowing it to target nations to both the east and west in alignment with British and American objectives. Canadian SIGINT was delivered to British and American policymakers and Canada's own External Affairs officials. Canada has historically relied on its more powerful partners.

Middle powers with smaller SIGINT capabilities can leverage those capabilities to pursue military or diplomatic objectives. Canada and Sweden provide distinct cases of the different objectives towards which it can be employed – in Canada's case, alliance tending, where it strengthened the military and diplomatic ties on the side to which it was firmly committed in a military conflict, and on Sweden's, safeguarding its neutrality and avoiding committing to either side by trading intelligence as a substitute for military contributions. SIGINT is a powerful tool for middle powers to counterbalance other states' superior military might. Canada's modest production has enabled it to be valued through the principles of mutual gain from trade.

There were three elements in postwar decision-making about Canadian intelligence: first, the nature of organizations – SIGINT rather than HUMINT; second, an autonomous agency in place of British-controlled operations; and third, the method of communicating the product – directly to the United States and other allies, rather than sent through London. In terms of the type of intelligence collected, Canada was influenced by path dependency, having had positive experiences with SIGINT and negative with HUMINT. The ultimate outcomes were those supported by the United States: for Canada to collect its own SIGINT, and to liaise directly with its southern neighbour. The British already were open to Canada and the other Commonwealth nations controlling their own communications security – the defensive application of SIGINT. Foreign collection was the area of contention. The UKUSA files clearly demonstrate that the Americans considered the Canadians a different case from the other Commonwealth UKUSA members, and one that required direct collaboration rather than going through the traditional, British-led Commonwealth structure. Defence officials and policymakers also strongly prioritized reciprocity and competence in intelligence sharing, emphasizing that Canada must contribute to the pool – with its own autonomous products – in order to benefit from it. Furthermore, Canada’s foreign policy was increasingly independent of the United Kingdom and progressively gravitated towards the United States, although with an enduring commitment to greater independence than it had enjoyed before 1939; this is visible in its approach to the establishment of NATO. This foreign policy position was mirrored in Canada’s approach to foreign intelligence.

Chapter 3: Canadian SIGINT: Value, Relevance, and Applications

Canadian SIGINT directly supports Canadian national security and has further value as a tool for furthering cooperation, to maintain political and diplomatic ties and access to allied intelligence. The first chapter discussed the details of Canada's decision to conduct signals intelligence and of its historic contributions to intelligence sharing. This contribution has continued into the present day, adapting to meet the changing international threat environment and consequently meet its partners' changing needs. Canada always has been a subordinate partner and has adapted its activities to suit allied priorities, thereby – as the economics of international trade dictate – maintaining its comparative advantage and value as a trading partner.

Economic incentives to trade underpin Canada's inclusion in Five Eyes. This theoretical underpinning is further supported by institutionalism to explain the endurance of the Five Eyes, while realism further explains Canada's strategy of collecting intelligence suited to the needs of the stronger powers upon which it is militarily and diplomatically reliant.

By 1946, Canada had a signals intelligence collection organization independent from those of its allies, and by 1948 it was part of the UKUSA alliance, an arrangement that would over time be revealed to be of unparalleled scope and staying power. Chapter 2 presented the foundations of autonomous Canadian signals intelligence collection and how Canada became involved in its most significant intelligence-sharing relationships, which emerged out of World War II and in which Canada has continued to cooperate into the present. Chapter 3 will address the value proposition of Canadian SIGINT to Canada and to its strategic partners. What has Canada brought to the table – as a SIGINT producer – that has ensured its continued inclusion in international intelligence-sharing arrangements? Furthermore, how has Canadian SIGINT

directly furthered national security – as a SIGINT consumer? Finally, what is the value and primary focus of SIGINT and Five Eyes in the present day?

The value of Canadian SIGINT value has not been constant; within UKUSA, Canada's relative value lessened in the late stages of the Cold War as the United States' absolute capabilities increasingly outstripped those of its allies; archival materials reveal frustrations with Canadian and British SIGINT at the top levels of the National Security Agency. Canadian SIGINT nonetheless has contributed to allied security as well as Canadian national security into the present day and currently has substantial value in the eyes of Canada's intelligence-sharing partners. While Canada indisputably relies on stronger powers such as the United States and Britain for intelligence products, it has ensured a place at the table through collecting a smaller but nonetheless valued signals intelligence product.

3.1 Value to Strategic Partners

3.1.1 Factors Enabling Canada to Add Value

Canada historically has possessed a comparative advantage in two areas that allowed it to make a valued contribution to allied intelligence sharing. Why would Canada have a comparative advantage in signals intelligence collection over its intelligence-sharing partners? The answer is twofold: geography, and the quality of intelligence collected.

Geography, while not a merit-based advantage, is a critical reason for Canada's importance to the United States and its other allies throughout its intelligence-sharing history. Canada has access to a wider range of targets than its partners due to its size, which will be explored in detail in this section. Canada's intelligence contributions has never equalled those of

its intelligence-sharing partners, but even a state with less to contribute in absolute terms can have a comparative advantage to benefit its trading partner. In Canada's case, this advantage was provided primarily by its geographic location. Ray Boisvert affirms that geography was historically of tremendous importance for Canadian SIGINT in ensuring value within the alliance.¹⁶⁷

Secondly, Canada produces a relatively high quality signals intelligence product, notably in tactical intelligence, which has played an additional role in ensuring Canada's continued inclusion in intelligence sharing. This is particularly significant given that the United States has increased its absolute advantage in collection compared to other states such as Canada. Both factors are critical to understanding why major intelligence collectors such as the United States and Britain have continuously valued Canada's contributions.

This comparative advantage was strongly relevant in World War II and the early Cold War. Geography, however, lessened in importance with the development of satellites; after the United States significantly outstripped its allies in SIGINT collection through advanced technology and far superior capacity it no longer relied on Canada for access to remote targets, thereby lessening Canada's value. Nonetheless, quality of analysis appears to have allowed Canada to continue to contribute value as an intelligence partner.

3.1.2 Historical Contributions

World War II

Canada's signals intelligence efforts during World War II illustrate its value to the Americans and the British both in terms of targeting and quality of output. Canada was well-

¹⁶⁷ Boisvert, Interview.

situated to target communications across both the Atlantic and Pacific, reaching German and Vichy French communications in the East and Japanese traffic – including into mainland China – in the west. Furthermore, Canadian SIGINT intercepted communications originating in Latin America.¹⁶⁸ Canada began targeting Japanese traffic before Pearl Harbour. The Examination Unit searched for a Japanese translator as early as June 1941 and subsequently appears to have added this capacity, as evident in August 1941 correspondence stating “The Unit is producing results of high value to our Intelligence Services and we are now on the point of substantially increasing its output as we have added some Japanese and Spanish translators to the staff.”¹⁶⁹ This interest in Japan stemmed directly from allied priorities, both American and British, given the existing British military engagement in the Pacific and American interest in Japanese activities in the region. Once the Japanese started the Pacific War and the United States joined the allies in December 1941, Canada’s ability to target Japanese communications made it a valued contributor to the American intelligence effort – a contribution rooted in geography. This access to Japanese communications enabled Canada to trade with the British for intelligence on European targets inaccessible to Canada.¹⁷⁰ Under the 1943 BRUSA Agreement between the United States and Britain, the British were tasked with collecting signals intelligence on Germany and the Americans with Japan.¹⁷¹ It is a testament to Canada’s geographical advantage in World War II intelligence sharing that it was able to collect signals intelligence on both.

¹⁶⁸ The Library and Archives Canada materials include substantial decrypts of communications originating in Brazil. For example, see Examination Unit file RG24 20306 – German and Japanese traffic, 1941-42.

¹⁶⁹ Library and Archives Canada RG24. Vol 29164: Examination Unit, WWII – 9 Pt. 1: XU Correspondence 1939-1941. Letter from Pearson to Massey, August 22, 1941.

¹⁷⁰ Stephen Budiansky, “The Difficult Beginnings of US-British Codebreaking Co-operation”, in David Stafford and Rhodri Jefferys-Jones, eds., *American-British-Canadian Intelligence Relations 1939–2000* (London: Frank Cass, 2000), 53.

¹⁷¹ Bradley Smith, 70.

Who set Canadian intelligence collection targets? Canadian archival materials reveal that during World War II, the Examination Unit took its collection assignments from *three directions*: first, the Canadian department of External Affairs, second, the British Government Code and Cypher School (GC&CS – the Examination Unit’s counterpart), and third, the American Signal Security Agency (SSA). Archival records show discussions between the Canadians and their counterparts regarding how to tailor Canadian cryptanalytical efforts to meet their allies’ needs – for example, focusing on Japanese commercial traffic for the Americans, Japanese communications in Northern China for the British as well as the Americans, and targeting Vichy French communications to support the war effort in Europe.¹⁷² By 1945, different collection priorities were evident from the three clients: the Canadian requests focused on diplomatic intelligence, the British on commercial, and the Americans on both commercial and military communications.¹⁷³ The course of the war inescapably directed the targets, with the Examination Unit ceasing, by July 31, 1945, to work on French diplomatic cipher traffic, instead concentrating solely on Japanese communications.¹⁷⁴

These examples demonstrate the wartime value of Canadian SIGINT to the country’s partners due to geography. Canadian signals intelligence also contributed in terms of quality, with the Canadians producing intelligence that their allies were not able to collect independently and providing services to supplement the capabilities of the more powerful American and British SIGINT agencies.

Despite its severe disadvantage in intelligence collection compared to the Americans, and the unexpected challenges the Japanese codes presented to Canadian cryptologic efforts, Canada

¹⁷² Library and Archives Canada. RG24. Vol 29166: Examination Unit. WWII – 22: XU – Liaison with Washington. Notes on Discussions Held during Dr. Robinson’s Visit to Signal Security Agency, May 17-20, 1945.

¹⁷³ Ibid.

¹⁷⁴ Ibid.

nonetheless produced a product of value. The Examination Unit's postwar review notes that the Americans found the Canadians' product quite useful, despite its quantity: "only 1/100 the size of its American equivalent."¹⁷⁵

This is a powerful demonstration of the concept of comparative advantage in relation to intelligence sharing. When it came to intercepting Japanese military traffic, Canadian SIGINT produced approximately one piece of intelligence for every one hundred produced by the Americans, and yet this product was valued and considered sufficient justification for incorporating the Canadians into the integrated intelligence effort. Furthermore, from the outset of its SIGINT activities Canada has contributed not only collection and decryption capabilities to the intelligence effort, but also *analysis*; Canadian SIGINT efforts demonstrated strong analytical abilities during the war, adding to the quality that Canada brought to the table.¹⁷⁶

Cold War

Canada's geographic advantage rendered it of tremendous value to the United States in the early stages of the Cold War. Interception of plain-language radio traffic was the area of greatest success for the Five Eyes against the Soviet Union in the early years of the Cold War. Much of this interception was conducted on targets within the Soviet Union that were only accessible to Canada, over the Arctic Circle. Therefore, Canada's SIGINT collection was critically important for its allies. In UKUSA's division of collection targets, Canada was tasked with the Arctic region of the Soviet Union, as well as East Asian targets, and certain areas of

¹⁷⁵ Ibid, 47.

¹⁷⁶ Jensen, 177, describes the strength of Examination Unit analysis. There is also primary source evidence from Library and Archives Canada. RG24. Vol 29166: Examination Unit. WWII – 22: XU – Liaison with Washington. Notes on Discussions Held during Dr. Robinson's Visit to Signal Security Agency, May 17-20, 1945, which describes the Americans passing raw decrypts to the Examination Unit, indicating that the Americans valued Canadian cryptanalysis.

Europe that radio wave patterns made inaccessible to Britain.¹⁷⁷ In the first years of the Cold War Canada had an absolute rather than merely comparative advantage; it was able to contribute a unique intelligence product to Five Eyes.

Canadian cryptanalysis targeted Soviet Arctic-based research stations and naval, military, and strategic rocket force communications, to give early warning of Soviet strike capabilities and order of battle. This was critical for preparing North American defences against Soviet aggression.¹⁷⁸ Canada's many intercept stations in the Arctic region by the 1950s clearly demonstrate its prioritizing of the Soviet Union as its primary foreign intelligence target. Canadian SIGINT operations also included the interception of communications to or from Soviet diplomats in Canada, organizations involved in trade with the Soviets, and individuals under suspicion of involvement in espionage or subversive activities.

Canada also ran interception operations from its embassies abroad.¹⁷⁹ This activity not only relied on some American equipment but also involved transmitting the intercepts to the National Security Agency for decipherment and analysis, due to a lack of Canadian decryption capabilities.¹⁸⁰ This situation was not, however, the case for Canada-based interception, where Canada possessed the necessary in-house capabilities.

The key indicator of Canada's unique significance is the authorization of direct bilateral SIGINT collaboration between Canada and the United States, which was explored in Chapter 2. Canada represented the first exception to the British standard model for intelligence sharing

¹⁷⁷ Perry, 94.

¹⁷⁸ Martin Rudner, "Contemporary Threats, Future Tasks: Canadian Intelligence and the Challenges of Global Security", in *Canada Among Nations 2002: A Fading Power*, Norman Hillmer, ed. (Toronto: Oxford University Press, 2002), 148.

¹⁷⁹ Ibid, 148. For further details, read Mike Frost and Michel Gratton. *Spyworld: Inside the Canadian and American Intelligence Establishments*, (Toronto: Doubleday, 1994). While written with a clear agenda that is highly critical of CSE, this work provides some indications of Canadian SIGINT operations during the Cold War.

¹⁸⁰ Rudner, "Contemporary Threats, Future Tasks", 148.

between the Commonwealth and the United States, due to insistence by the Americans. Canada's geography rendered it critical for American security plans due not only to Canada's access to communications intercept targets of interest to the US but also to the geographic proximity of the two nations, which meant that Canadian security was critical to American defensive strategies. The UKUSA arrangement reveals that these factors influenced American intelligence collaboration planning, stating: "In view of the geographic proximity of the Canadian and the U.S. National COMINT Centers, and of the close relationships which will exist between the military forces of the two nations in time of war, an integrated effort on specific problems may be required."¹⁸¹ This passage demonstrates both that the presence of Canadian SIGINT operations so close to the American facilities was an advantage in the early stages of the Cold War for intelligence sharing, increasing the Canadians' value to their American counterparts, and that the Americans anticipated integration of military and intelligence activities should war break out.¹⁸²

Thus Canada possessed a geographic advantage in Cold War intelligence collection. What was Canada's *qualitative* advantage? The existing literature on Canadian SIGINT has proposed that Canada's comparative advantage was in *tactical SIGINT*, and the newly-declassified documents prove this speculation represents reality. Canada's tactical SIGINT strength during World War II is evident from wartime decrypts, and this capability persisted after the war. The UKUSA documents reveal that membership in NATO's SACLANT tactical "Y" Structure was restricted to states that could enhance the Structure's effectiveness through their Y

¹⁸¹ National Security Agency, UKUSA Agreement, HW-80-10, 82. The passage continues on to specify what such integrated efforts would entail: "Such collaboration may involve an exchange of technical personnel between the two Centers and the provision by NSA of technical support to the integrated efforts to the extent desirable and feasible."

¹⁸² SIGINT originated as a military function; the Canadian military has been a key player in SIGINT operations throughout Canadian SIGINT history.

units and geographical location.¹⁸³ The only countries included were the U.S., U.K., and Canada. What is Y intelligence? Y intelligence as defined by UKUSA is: “Y is Communication Intelligence derived from the timely processing of traffic procured by listening to enemy communications for the purpose of providing tactical intelligence for the commanders of combat forces.”¹⁸⁴ Y is a specific type of tactical intelligence collected by military units. The term “Y” originates with direction-finding triangulation, where data collected on the same target from three directions allow for pinpointing of the target’s location.¹⁸⁵ The 1955 revised UKUSA agreement’s SACLANT sections demonstrate the value placed by the UK and US on Canada’s strong tactical and Y intelligence capabilities.¹⁸⁶

The 1955 revised UKUSA Agreement illuminates the special role played by Canada. It affirmed that Canada was the only Commonwealth country that could receive disseminated SIGINT materials with only American, not British, approval.¹⁸⁷

After the 1950s, however, the value of Canadian SIGINT waned. One of the two factors contributing to its strength all but disappeared partway through the Cold War. Interception of plain-language radio traffic declined in importance, and by the 1970s, American satellite technology began to provide the United States’ cryptologic operations with an immense collection advantage. Satellites severely undermined the partner states’ abilities to provide raw intelligence of value when faced with the vast scale of American SIGINT collection. The personal notes of the Director of the National Security Agency in the 1980s, William Odom, reflect serious frustration with CSE and GCHQ in the late stages of the Cold War. While still

¹⁸³ National Security Agency, UKUSA Agreement, HW-80-10, 55.

¹⁸⁴ Ibid, 1955 UKUSA Agreement, 52. Note that the UKUSA agreement considers COMINT and SIGINT synonymous.

¹⁸⁵ Jensen, 183.

¹⁸⁶ See National Security Agency, 1955 UKUSA Revised Agreement, 37-63.

¹⁸⁷ Ibid, Appendix J, 47.

indicating that the NSA placed value in tactical SIGINT provided by Canada, the notes show awareness at the highest level of the NSA that the agency's capabilities had vastly outstripped those of its intelligence partners. In Odom's view they were no longer pulling their weight.¹⁸⁸ Nonetheless, the alliance endured, with capabilities and priorities shifting after the Cold War. The post-Cold War period demonstrates renewed cohesion and reliance by the United States on its partners for valuable SIGINT contributions.

3.1.3 Present-Day Contributions

Canada's contributions were meagre in the late Cold War and early post-Cold War period. The lessened focus on signals intelligence as well as a so-called "peace dividend" led to a reduction in CSE's budget in the early 1990s.¹⁸⁹ However, Canadian signals intelligence adapted over the next few years to the new technological capabilities and, crucially, to the new security environment. This was reflected in its budget, which rose accordingly in the mid-1990s, with the agency achieving additional relevance and increased funding even before 9/11.¹⁹⁰ A key difference was increased capacity due to the late Cold War shift from collecting purely within its borders to embassies abroad; more important was the emphasis on collecting on current, pressing policy priorities and maintaining the second characteristic – highly quality analysis – that has historically ensured the continued relevance of Canadian SIGINT contributions to allied sharing.

When the Soviet Union collapsed, Five Eyes lost its founding purpose. However, it continued and flourished with new priorities, and as a reflection of the priorities of its driving members, chiefly the United States. In 1991, the Canadian government formalized a similar shift

¹⁸⁸ National Archives, "William E. Odom Papers", Folder 8, 1986.

¹⁸⁹ Rudner, "Canada's Communications Security Establishment", 477.

¹⁹⁰ Ibid.

in focus, identifying the country's foreign intelligence priorities: international terrorism, weapons of mass destruction proliferation, illegal migration, religious and ethnic conflict, economic espionage and trade intelligence, and transnational organized crime.¹⁹¹ CSE expanded both its technical and linguistic capabilities, with the latter reflecting a broadening in scope; North Africa and the Middle East, West Africa, South America, and South, East, and Central Asia are all represented in the linguistic capabilities within CSE, reflecting newly-emergent foreign intelligence priorities in the post-Cold War era.¹⁹²

The Five Eyes shifted after the Cold War towards a broader range of strategic priorities and target entities. As the largest and most powerful of the members, the United States dictates the priorities for intelligence collection. Recent states targeted by the NSA were revealed by Snowden, who published the "United States SIGINT System January 2007 Strategic Mission List." The list specifies countries of focus for intelligence to support operations or strategies, and also includes "accepted risks" – possible outcomes involving specific countries that may have negative consequences for the United States but that risk is accepted. A good example of both is provided in Section E: State/Political Stability. The corresponding strategy is "providing warning of impending state instability" by collecting intelligence on internal political activities in Iraq, Afghanistan, Pakistan, Saudi Arabia, North Korea, Sudan, Cuba, Nigeria, Lebanon, and others. This section also identifies accepted internal stability risk countries, including Egypt, Zimbabwe, Liberia, Georgia, Jordan, and Haiti. The intelligence strategy incorporates policy objectives; for example, political stability-related intelligence collection is presented in the context of the

¹⁹¹ Auditor General, *Canadian Intelligence Community*, para 27.31, cited in Rudner CSE 2007 article, 476-477.

¹⁹² Rudner, "Canada's Communications Security Establishment", 478.

United States having an “interest in regime continuity” in a specific subset of the target countries.¹⁹³

In terms of strategic priorities, domestic terrorist threats are real concerns for Five Eyes member agencies. The threat stems both from lone wolf attacks and from organized, international terrorist organizations with a presence within the member states. This chapter examines several cases in which Five Eyes member agencies are known to have contributed to the thwarting of terrorist plots. The Five Eyes alliance has enabled an integrated approach to counterterrorism efforts in all the member countries, thereby furthering mutual security.

In the latest decade, CSE’s foreign intelligence has made notable contributions to allied intelligence efforts. While information on CSE’s activities and allied intelligence efforts is classified, admissions of signals intelligence involvement have become public about several cases that demonstrate Canadian signals intelligence has enhanced national security in Canada and abroad.

CSE has been profoundly affected by national and international policy priorities, with the most profound changes being the result of the American-led “war on terror.” Since 9/11, terrorism has become a key Canadian signals intelligence priority. Canadian SIGINT targeting shifted towards communications regarding terrorist threats to Canadian interests at home and abroad. CSE established an anti-terrorism unit in 2002 to better direct its anti-terrorism activities.¹⁹⁴ This new priority also prompted structural changes to the agency – including expanding the budget and resources, staff, and technology – and adopting the first-ever statutory mandate for CSE.¹⁹⁵ Canada’s Anti-Terrorism Act of December 2001 gave CSE its formal,

¹⁹³ National Security Agency, “SECRET//COMINT//REL TO USA, AUS, CAN, GBR//20291123: United States SIGINT System January 2007 Strategic Mission List”, Snowden files, 2013.

¹⁹⁴ Rudner, “Canada’s Communications Security Establishment”, 477.

¹⁹⁵ Ibid, 473.

threefold mandate: first, I/T security – protection of government communications; second, I/T support – technical support to other government agencies; and third, SIGINT – collection of foreign intelligence in pursuit of government priorities.¹⁹⁶

How has Canadian SIGINT supported allied security? Thus far this section has examined the progression of priorities and capabilities. It is time to examine concrete cases in which Canadian SIGINT has had an impact, demonstrating its value to our intelligence-sharing partners. While cases supported purely by signals intelligence are closely guarded and generally not available in the public domain, several cases have come to light in which SIGINT played a role. Furthermore, Canadian SIGINT is known to have played a recent role in theatres of war, complementing military efforts.

Canadian SIGINT provided early indications of international terrorist threats and supported coordinated counterterrorism efforts for intelligence collection, law enforcement, prosecution, and military operations. Canadian SIGINT supported Five Eyes partners' security in: first, the 2000 arrest of a Hezbollah terrorist cell in North Carolina; second, the uncovering of an Islamic terror plot in Britain in 2004; third, a 2006 hostage rescue in Iraq; and fourth, the War in Afghanistan.

First, a particularly compelling example for this study: in 2000, CSE contributions to Five Eyes intelligence sharing contributed to the arrest of a Hezbollah terror support cell in North Carolina. Thus, Canadian SIGINT contributed to arresting an international threat to the security of the Five Eyes partner countries within one of the other countries: the United States. This illustrates mutual support and contributing resources to protecting each other's security within the alliance. Second, CSE and GCHQ shared signals intelligence that led to the 2004

¹⁹⁶ Communications Security Establishment Canada, "Signals Intelligence (SIGINT)".

investigation and arrest of an Islamic militant group suspected of plans to attack targets in Britain.¹⁹⁷ One of the suspects was a Canadian, suggesting the initial cause for Canadian involvement and illustrating that terrorism threats are multinational and a coordinated intelligence effort can substantially improve states' capacity to face such threats. Third, CSE intelligence supported the rescue of hostages, Canadian and others, in Iraq in 2006.¹⁹⁸

Another critical modern contribution by Canadian SIGINT has been intelligence support to troops in Afghanistan. Canadian SIGINT has directly supported the Canadian military in Operation Enduring Freedom and the military deployments of Canada's Five Eyes partners. In Martin Rudner's words, "SIGINT can demonstrate unique attributes and aim to generate and integrate high-value, real-time operational intelligence from a multiplicity of sources in a geographically remote and complex threat environment like that encountered in Afghanistan." While some literature suggests Canada's SIGINT involvement in Afghanistan has been at the tactical intelligence level,¹⁹⁹ in fact it was analytical and linguistic as well as providing technical tactical support.²⁰⁰ Canada's initial strength in World War II was tactical SIGINT; however, now one of the critical reasons for Canadians' involvement in Five Eyes is the value of Canadian analysis.

Rudner, "Canada's Communications Security Establishment", 482-3.

¹⁹⁸ Ibid, 484.

¹⁹⁹ Cooper, 26.

²⁰⁰ This is supported by multiple sources, including Rudner, "Canada's Communications Security Establishment", 484 (based on his private interviews) and Member of Canadian intelligence community, Telephone Interview with Author, March 2013.

3.1.4 Conclusions: Value of Canadian SIGINT to Intelligence-Sharing Partners

While weaker in absolute terms than its two largest intelligence-sharing partners, Canada nonetheless has made a valued contribution throughout its signals intelligence-sharing history due to two main factors: geography, and quality of intelligence produced, chiefly analysis.

Canada's geography has historically provided an immense advantage in terms of signals intelligence collection. Canadians have collected SIGINT on a variety of targets of interest to their allies that the other countries could not access. Thus, Canadian SIGINT targets sometimes have held no direct value for Canadian policymakers; the value of collecting intelligence on these targets lay squarely in generating a tradable product. Geography has provided Canada with a comparative advantage in intelligence collection, giving it a means of trade with its more powerful partners, thereby ensuring its place at the table. Canada's intelligence has not been sufficient on its own to generate well-informed policy; this comparative advantage has given Canada access to a vast intelligence network.

The quality of Canadian signals intelligence is a second reason for Canada's inclusion in Five Eyes. Canada's strength began in the quality of its tactical intelligence, and it has evolved into strength at the analytical level, with Canadian analysis providing a small but highly valued component of allied integrated intelligence efforts into the present day. Focusing on small, high quality niches has allowed Canada to hone its intelligence skillset and ensure its value to the Americans and other intelligence-sharing partners, particularly over the past decade.²⁰¹ Canada's value still lies in analysis. Its gigantic neighbour to the south collects, according to US military historian Matthew Aid, "the equivalent of four Library of Congresses every hour," and yet

²⁰¹ Boisvert, Interview.

continues to value the Canadians because “one of the things Canada does very well is analysis.”²⁰²

The historical and theoretical elements of this chapter demonstrate that, since World War II and into the present day, Canada has served as a producer as well as a consumer of allied signals intelligence and a valued intelligence-sharing partner. While priorities and capabilities have shifted over time, Canada in the twenty-first century has continued to make a valued contribution to intelligence sharing.

As a middle power, Canada has for decades leveraged its intelligence capabilities to further its national security. Weaker powers are inevitably net beneficiaries in intelligence sharing; however, as long as they make a valuable contribution, they gain access to a vast network. This section has demonstrated that Canada’s allies valued its intelligence contributions, which while smaller in absolute terms are relatively valuable, and this has given Canada access to intelligence-sharing networks that further its ability to face the changing threat environment and further its national security. However, sharing is not the only value of Canadian SIGINT. Despite the high-profile nature of threats to its more powerful southern neighbour, Canada faces its own security challenges that necessitate collecting intelligence to bolster its own national security.

3.2 Value to Canada

Canada faces direct security threats. Through a realist approach, Canada has developed and leveraged intelligence capabilities with the objective of self-preservation. In addition, Canada’s proximity to the United States – and the close ties and lack of militarization along the

²⁰² Colin Freeze, “How CSEC became an electronic spying giant”, *The Globe and Mail*, 30 November 2013.

border between the countries – render the northern country a possible means through which other actors – historically the Soviet Union, and currently terrorist entities – might seek to strike at the United States. These threats have necessitated that Canada maintain access to intelligence – both through its own collection capabilities and through trading with its allies – to ensure its own security.

Canada is a known target for terrorism. In October 2014 this danger was brought to forefront of the Canadian consciousness when a lone gunman killed a soldier at the War Memorial in Ottawa and opened fire in Parliament, allegedly inspired by the Islamic State of Iraq and the Levant operating in Syria and Iraq. Canada previously had emerged as a target in jihadi discourse, from Osama bin Laden identifying Canada as a possible target for al-Qaeda, to Mohamed Merah, the Toulouse gunman in 2012 who stated that at a Pakistani training camp he was instructed to launch strikes in the United States and Canada, although he ultimately opted to strike in his native France.²⁰³

These threats have evolved in recent years and Canada's national security structure is attempting to keep pace. The primary terrorist threat being addressed by Canadian intelligence, as confirmed by Public Safety Minister Steven Blaney in November 2013, is Canadians who are radicalized, travel overseas, and then return to their home country with terrorist training.²⁰⁴ This concern will have been reinforced in following months with reports of Canadians being killed fighting with terrorist organizations in Syria, including a former member of the Toronto 18 terrorist organization in Toronto, and a young man from Calgary, Alberta. It was further enhanced by the afore-mentioned lone wolf attack in October 2014, furthering fears of

²⁰³ Tu Thanh Ha, "Leaked audio reveals Toulouse gunman listed Canada among proposed al-Qaeda targets", *The Globe and Mail*, July 9, 2012.

²⁰⁴ Stewart Bell, "Court rebukes CSIS for secretly asking international allies to spy on Canadian terror suspects travelling abroad", *National Post*, 26 November 2013.

homegrown and radicalized-abroad jihadists. The threat of foreign fighters drives numerous Western countries to intercept communications to determine these individuals' connections and destinations and anticipate possible terrorist activities when they return home.

In addition to terrorism, Canada is a target for intelligence collection by other states. CSIS Director Michel Couombe stated in January 2014 that foreign states are interested in Canada and are engaging in espionage, particularly seeking out economic and military intelligence, with foreign espionage targeting Canada's oil and gas industry and aerospace and nuclear sectors.²⁰⁵ This assertion is supported by recent cases such as that of Jeffrey Paul Delisle, the member of the Royal Canadian Navy convicted of conducting espionage for the Russians.

The Snowden materials have revealed that Five Eyes SIGINT collection has included intelligence on European Union trade policy and on the location of Taliban members – and subsequent strikes against them.²⁰⁶ On this basis, as argued by Ferris, CSE evidently has been supporting Canadian policy priorities.

SIGINT products from CSE and its Five Eyes partners are known to have contributed to the surveillance of terrorist plans involving Canadian participants, Canadian targets, or both. SIGINT contributed to the early detection of the Toronto 18 terrorist group that was revealed in 2006 to have been plotting bomb attacks against the Toronto Stock Exchange and the CSIS office in Toronto, and the beheading of the Canadian Prime Minister.²⁰⁷ Furthermore, Canadian SIGINT supported the Canadian military deployment in Operation Enduring Freedom in Afghanistan, with SIGINT providing timely, tactical intelligence as well as analytical support

²⁰⁵ Canadian Security Intelligence Service, "Message from the Director", *Public Report 2011-2013*, (Ottawa: Canadian Security Intelligence Service, 2013), 4.

²⁰⁶ John Ferris, "The Shock of the Secret", *CDFAI Quarterly Review*, Winter 2013.

²⁰⁷ Anthony Depalma, "Terror Arrests Reveal Reach of Canada's Surveillance Powers", *New York Times*, 8 June 2006.

regarding the dynamic security situation on the ground. Rudner describes CSE as “a backbone for Canadian Forces C4ISR (command, control, communications, computers, intelligence, surveillance, reconnaissance) capabilities in Op Archer, the deployment in Afghanistan.”²⁰⁸ Canadian SIGINT is known to have aided Canadians abroad in multiple situations; in Iraq in 2006, CSE intelligence contributed to the rescue of a group of hostages that included Canadians.²⁰⁹

The Toronto 18 case reflects the global nature of terrorist threats and the corresponding logic in multilateral intelligence sharing to bolster states’ counterterrorism activities. CSE’s investigation of the Toronto 18 group was connected to investigations in several countries around the world; CSE’s term for the related investigations was Project O Sage, while other countries employed different terms, including Operation Mazhar in Britain, and Operation Northern Exposure for the FBI in the U.S.²¹⁰ This case demonstrates that in a global threat environment, SIGINT agencies cannot operate effectively in isolation; by contrast, the Five Eyes member agencies have a high degree of cohesion and interaction for mutual support in combatting terrorist threats. Canadian SIGINT enables Canada to benefit not only its own national security but, critically, that of its most important strategic partners.

The previous examples are of Canadian SIGINT benefiting Canadian national security. However, this study is demonstrating that Canada values SIGINT as a terms of trade with its partners. In a trade, both parties benefit. Thus, it is worthwhile exploring a known case in which Five Eyes intelligence benefited Canada. In August 2010, three Canadians – Misbahuddin Ahmed, Hiva Mohammad Alizadeh, and Khurram Syed Sher – were arrested on terrorism

²⁰⁸ Rudner, “Canada’s Communications Security Establishment”, 484.

²⁰⁹ Ibid.

²¹⁰ Ibid, 483.

charges. The joint intelligence effort leading to their arrests was dubbed Operation Samosa. The operation is publicly known to have involved CSIS and the RCMP on the Canadian side and to have benefited from Five Eyes contributions from the United States and Britain. CSE involvement is speculation, based on the involvement of all other major Canadian intelligence agencies, and the participation of two partner SIGINT agencies, which points to CSE participation at the very least as a recipient and processor of intelligence from its partner agencies. The 2010 arrest based on shared SIGINT and HUMINT points to the effectiveness of intelligence sharing through the Five Eyes network in countering threats to Canadian national security.

3.3 SIGINT and Five Eyes Today

Where are CSE and Five Eyes today? Fragmentary facts are available on the Five Eyes SIGINT agencies, and less is known about CSE than about the NSA and GCHQ. However, from a variety of sources – the author’s primary source interviews, intelligence agencies’ public statements and declassified materials, academic investigations, and the recent Snowden disclosures – it is possible to develop a general understanding of CSE’s role within Five Eyes. Canada’s role continues to be that of a subordinate middle power producing a small but valuable intelligence product that has allowed it to maintain its comparative advantage. From a realist perspective, Canada has maintained a consistent strategy towards intelligence sharing, while adjusting its collection and analysis priorities based on the needs of its more powerful partners.

The core Five Eyes member states have unprecedented and profound ties and support each other in a vast variety of ways, including mutual technical and analytical support. In January 2000, the NSA suffered a four-day computer outage in which its processing and

analytical capabilities ground to a halt. Five Eyes came to the Americans' rescue. The member states' systems are sufficiently integrated that the NSA was able to pass on its raw intercepts to its partners for analysis and thereby continued SIGINT operations throughout the computer outage. This is an example of Five Eyes providing valuable support to the United States regardless of the latter's superior absolute capabilities.²¹¹ It still cannot afford to go it alone. It needs and benefits from its Five Eyes partners.

The United States recognizes that the more its shares with its trusted partners, the more it will ensure its own security.²¹² Furthermore, as stated by Rudner, "It is widely acknowledged that intelligence cooperation and information sharing are indispensable for effectively combating a global terrorist threat."²¹³ Threats that transcend borders necessitate intelligence sharing for effective security.

The Five Eyes alliance in the present day extends far beyond the pure signals intelligence basis upon which it was formed. In addition to the five SIGINT agencies, the alliance includes military and human intelligence partnerships, national assessment sharing structures, and other sharing frameworks.²¹⁴ Military operations are profoundly affected by Five Eyes. Canadian military units deployed outside Canada for the Afghanistan mission and others have operated within a Five Eyes framework.²¹⁵ This again demonstrates the remarkable power, cohesion, and scope of Five Eyes.

²¹¹ Ibid, 480.

²¹² Boisvert, Interview.

²¹³ Rudner, "Canada's Communications Security Establishment", 480.

²¹⁴ For more details, see Cox, 8.

²¹⁵ Cox, 9.

3.3.1 Present-Day Five Eyes: Challenges and Resilience

With the collapse of the Soviet Union, the Five Eyes alliance lost its primary target and the reason for which it was created. Nonetheless, the alliance continued, focusing on new priorities such as economic intelligence and terrorism. The alliance today encompasses more than just signals intelligence, but SIGINT is its top priority. In any case, since Canada does not possess a foreign intelligence agency, its main contribution is SIGINT.²¹⁶ The United States has become less reliant on its SIGINT partners, including Canada, due to technological advances in communication interception technologies such as satellites – which are part of the integrated network known as Echelon – in which the U.S. has a pronounced advantage.²¹⁷ In 1968, a State Department assessment of the “special relationship” determined that Britain was disappointing as a military ally, but that it still played an important role in cooperation in the areas of nuclear weapons and *intelligence*.²¹⁸ Nonetheless, by the 1970s the disparity was grating on the Americans, with exasperated NSA director William Odom writing that the NSA’s “excessively entangled” intelligence relationships, particularly with Britain, had a complexity disproportionate to the intelligence produced.²¹⁹ Nonetheless, the partner states managed to provide intelligence of value to their larger ally to the extent that the Five Eyes alliance has thrived in the post-Cold War era. Canada, Australia, and New Zealand, in Jensen’s words, “added value to the alliance by virtue of their geographic placement and political opportunities for collection purposes”, as well as possibly adding analytical value.²²⁰

²¹⁶ The Communications Security Establishment is mandated to collect foreign intelligence; however, that is not its sole function, and it is not a dedicated foreign intelligence agency. See Communications Security Establishment Canada, “Who We Are”, Last Modified 31 October 2011, Accessed 19 March, 2012. <http://www.cse-cst.gc.ca/home-accueil/about-apropos/index-eng.html>.

²¹⁷ Perry, 95.

²¹⁸ Aldrich, “British Intelligence and the Anglo-American ‘Special Relationship’ during the Cold War”, 349.

²¹⁹ National Archives, “William E. Odom Papers”, Folder 8, 1986.

²²⁰ Jensen, 179.

The CSE Commissioner's Office wrote in 2012 on Five Eyes: "This cooperative alliance may be more valuable now than at any other time, in the context of increasingly complex technological challenges."²²¹ SIGINT continues to provide tremendous value to Five Eyes countries in support of national security priorities. A key benefit from signals intelligence is that it can provide intelligence in locations in which human intelligence sources would be at high risk; a prime example is the Syrian civil war, where US officials admit that the risks are too high for Central Intelligence Agency operatives to be deployed to the country and local sources are few and unreliable. Instead SIGINT provides some insight into the situation on the ground.²²² Five Eyes states have made public statements on the value of SIGINT activities in preserving their national security. For example, Sir Malcolm Rifkind, chairman of Britain's Intelligence Security Committee (ISC), asserted after the Snowden revelations that SIGINT has played an essential role in large-scale terror attacks prevented in Britain since the July 7 terrorist attacks.²²³

When an agency within Five Eyes collects intelligence, it must consider: does this material directly relate to national interest, and does it have value to any of the Five Eyes partners? Member agencies can also query the system to request specific intelligence from their partners.²²⁴

As far as can be gleaned through open sources, the modern breakdown of geographic collection areas includes the Arctic, North Atlantic, North Pacific, and parts of Latin America.²²⁵

²²¹ Office of the Communications Security Establishment Commissioner, "Update on an ongoing review of CSE's foreign signals intelligence sharing with international partners", *Annual Report 2011-2012*, (Ottawa: Office of the Communications Security Establishment Commissioner, 2012), 26. Emphasis added.

²²² Siobhan Gorman and Julian E. Barnes, "US Spying on Syria Yields Bonus: Intelligence on Islamic State", *Wall Street Journal*, 1 November 2014.

²²³ Tom Whitehead and Peter Dominiczak, "We will lose terrorists because of GCHQ leaks, warns minister", *Daily Telegraph*, 23 October 2013.

²²⁴ Boisvert, Interview.

²²⁵ Cox, 6.

Despite the evolution of technology and priorities since the beginning of the alliance, Canada's focus has not substantially changed, reflecting its core geographic strengths.

It is important to remember the different intelligence components within each state. During WWII, the American and British navies had different levels of integration and cooperation in intelligence than their army equivalents. Richard Aldrich notes that this separation of intelligence components within a state can add to the resilience of intelligence relationships.²²⁶ Focused cooperative relationships between intelligence agencies can withstand policy differences between their governments. This is also reflected in the Canadian military approach to intelligence sharing at the end of World War II. The military felt particularly strongly regarding the importance of maintaining intelligence-sharing ties with Canada's allies, reflecting the degree of direct cooperation between the Canadian military intelligence components and their allied equivalents. The relationships themselves often are strong and durable, as is the case with Canada's relationships with the Americans and the British.

The alliance has informally expanded. The original UKUSA documents show that the five core member states already were exchanging limited intelligence with other states; the UKUSA files stipulate guidelines for such sharing with third parties. This engagement with other states has continued and expanded into the present day; Ray Boisvert, formerly with CSIS, refers to the alliance as the "Five Eyes ++", including many additional partners such as France, Germany, Singapore, and Italy.²²⁷

The cohesion of Five Eyes cannot be taken for granted. Breaches in member security and divergent foreign policies have strained the relationship, in some cases to the extreme of a

²²⁶ Aldrich, "British Intelligence and the Anglo-American 'Special Relationship' during the Cold War", "British Intelligence and the Anglo-American 'Special Relationship' during the Cold War", 335.

²²⁷ Boisvert, Interview.

partner being temporarily frozen out. This has been true since the earliest days of the relationship; while Canada was included as early as 1947, Australia's inclusion was delayed due to serious Soviet penetration of Australian intelligence in the 1940s, which had to be rectified before the other states would trust Australia as an intelligence partner.

In January 2012, the Canadian public learned of intelligence sharing through a scandal that threatened to break the trust between Canada and its intelligence-sharing partners. Jeffrey Paul Delisle, a Sub-Lieutenant in the Royal Canadian Navy, was arrested and convicted of violating the Security of Information Act. He was the first Canadian to be convicted under it. Delisle was conducting espionage on behalf of Russia, conveying signals intelligence from the Stoneghost defence intelligence-sharing network, which included intelligence on the activities of Five Eyes and North Atlantic Treaty Organization. This compromise prompted intense internal scrutiny within Canadian intelligence and tensions with the Canada's intelligence partners.

This incident prompted Canada to examine its intelligence structure to determine causes and potential extent of breaches and reassure its allies that it was taking action to minimize vulnerabilities. Canada's intelligence-sharing allies needed reassurance that Canada was a security-conscious, trustworthy partner. This is not new to SIGINT or Canada: Australia faced similar challenges in the 1940s, as did the United States more recently with Edward Snowden.

Political and military leaders gave testimony during the domestic and international fallout, regarding the consequences of Delisle's espionage. Defence Minister Peter MacKay stated publicly that Canada's alliances and intelligence-sharing relationships would not sustain damage from the Delisle affair. This statement was wishful thinking, contradicted in a subsequent statement by Brigadier-General Robert Williams, director of military signals

intelligence, that the Sub-Lieutenant had caused “exceptionally grave damage to the national interest of Canada.”²²⁸ Williams subsequently stated that the impact was unclear but allies were concerned over this breach in Canadian security, and the compromising of their intelligence.²²⁹ As time passed, what emerged was a climate of concern from Canada’s intelligence-sharing partners and insistence that Canada reinforce its internal security measures, coupled with continued inclusion in the intelligence-sharing relationships. In March 2014, the Canadian government tightened the Security of Information Act to further prevent disclosures of classified information by employees and former employees.²³⁰

Internal security vulnerabilities have not been the only cause of tension within the Five Eyes. The relationship is also vulnerable to any divergence in members’ foreign policies. Two examples are New Zealand’s resistance to nuclear-equipped warships entering its waters, and Canada’s and New Zealand’s responses to the 2003 Iraq War. The first resulted in the U.S. withholding intelligence and resources from New Zealand beginning in 1985 – although this did not apply to SIGINT products as it did to other forms of intelligence and security assistance, from which New Zealand was not again included for two decades – while the stances on Iraq meant that Canada and New Zealand could not contribute to Five Eyes efforts against UN Security Council delegates without jeopardizing their foreign policy objectives and consequently suffered loss of access to information for some time.²³¹

In another case of divergent policies, in 2002 it appeared possible that Britain would move away from its Anglo-Saxon and Atlantic partners towards a Euro-centric intelligence

²²⁸ Steven Chase and Jane Taber, “General contradicts MacKay’s assessment of damages caused by Delisle spying”, *The Globe and Mail*, January 31, 2013.

²²⁹ Ibid.

²³⁰ Boutilier, Alex. “Ottawa imposes life-long gag order on bureaucrats, lawyers.” *Toronto Star*, 13 March 2014.

²³¹ Rudner, “Canada’s Communications Security Establishment”, 480.

system. At this time, Canadian historian Martin Rudner wrote: “A British defection would be fateful for UKUSA, but would furthermore leave Canada singularly dependent on the US for much of the SIGINT that informs its foreign intelligence capability.” Rudner noted that even Canada, one of the US’s closest intelligence partners, engendered certain reservations in its American allies in terms of sharing sensitive intelligence products.²³² Canada relied on the five-partner network to ensure effective and valued intelligence sharing.

Five Eyes members have different diplomatic relationships within the international community, which poses challenges when friendly states find themselves targeted by the Five Eyes. Recent details from the Edward Snowden disclosures have demonstrated the diplomatic fallout for individual Five Eyes states from their intelligence activities.

Canada faced recent objections from first, Brazil, and, second, Mexico, when revelations surfaced of extensive Five Eyes collection on government communications, conducted notably by CSE. Brazilian President Dilma Rouseff strongly condemned the Five Eyes activities and postponed a state visit to Washington D.C.²³³ American President Barack Obama responded to the international criticism with changes in intelligence collection regulations, announcing that the U.S. will not collect SIGINT on the communications of officials of countries close to the US.²³⁴

In March 2015, revelations buried in the Snowden materials came to light indicating CSE and NSA were monitoring Mexican traffic. This followed indications in the initial Snowden revelations that the NSA had been collecting intelligence on Mexican President Enrique Peña Nieto. Information to date does not conclusively determine whether the value of Mexican

²³² Rudner, “Contemporary Threats, Future Tasks”, *Canada Among Nations: A Fading Power*, 161.

²³³ Steve Holland, Mark Hosenball, and Jeff Mason, “Obama bans spying on leaders of U.S. allies, scales back NSA program”, Reuters, 17 January 2014.

²³⁴ Ibid.

communications to Canada was related to security or economics, given the high level of interest from Canadian companies in investment in Mexico.²³⁵

American relations with Germany were strained when Edward Snowden's 2013 revelations of SIGINT collection included the targeting of Chancellor Angela Merkel. The news that the NSA had been tapping the Chancellor's telephone made headlines around the world. Germany's initial response was to request a no-spying agreement with the United States, to which the latter refused. The situation further deteriorated in July 2014 with the revelation of an American double agent embedded in the German domestic intelligence service, infuriating a German government that considers the two countries to be allies. The German administration has responded to each provocation with outrage and warnings to the Americans and their Five Eyes allies that their intelligence collection activities are jeopardizing the close relationship. As France has expressed similar outrage with the Five Eyes, Germany and France expressed a desire in February 2014 – spearheaded by Chancellor Merkel – to establish a European communications network to protect data²³⁶ and present a concerted challenge to Five Eyes.

The United States faced the lion's share of the international backlash but Britain suffered a diplomatic setback when the Snowden files revealed GCHQ interception of the communications of the foreign ministry of South Africa.²³⁷ Britain and fellow Five Eyes members that are also part of the G20 – Canada, Australia, and the US – were revealed to have used their SIGINT agencies to collect intelligence on G20 participants at the 2009 summit in

²³⁵ Amber Hildebrandt, "CSE spying in Mexico: Espionage aimed at friends 'never looks good'", *CBC News*, 25 March 2015.

²³⁶ BBC News Europe, "Data protection: Angela Merkel proposes Europe network", *BBC News Europe*, 15 February 2014.

²³⁷ The Economist, "A great place to be a spy: British spies are bruised by Edward Snowden, trusted by the public and need better oversight" *The Economist*, 8 March 2014.

London.²³⁸ Thus, the implication is that Five Eyes states had been conducting economic and diplomatic espionage to support themselves and other Five Eyes members in international negotiations.

These incidents illustrate that the calculation of whether to collect and share intelligence cannot purely be based on the value of the intelligence obtained. The activities also have implications for the member states' diplomatic relationships. This can affect the scope of Five Eyes collection, with member states balancing the value of intelligence collected against the impact on diplomatic relationships.

3.3.2 Value of SIGINT in diplomatic negotiations

SIGINT is also tremendously valuable in diplomatic negotiations. If one state understands the other's bargaining position, it can push to the top the concession the other party is willing to make. These negotiating positions are conveyed to diplomatic representatives by their governments back home through secure communications, which SIGINT can intercept and decipher. This is what transpired at the 1921-1922 Washington Naval Conference, where SIGINT informed the Americans of exactly what limits the Japanese delegation had been told to go to, allowing the US negotiators to extract maximum concessions. Sims points out that the United States collected intelligence on friendly states during the World War I peace negotiations, despite Woodrow Wilson's stance of open diplomacy.²³⁹

A more recent example is Israeli SIGINT collection on telephone conversations by American Secretary of State John Kerry during the 2013 Israeli-Palestinian peace negotiations.

²³⁸ Jim Bronskill, "Investigation at CSE finds 'serious breaches' of spy agency's ethics code", Canadian Press, 17 March 2014.

²³⁹ Sims, "I Spy".

While Secretary of State Kerry mediated between the Israelis and Palestinians, Israeli intelligence was listening to his conversations made by telephone and transmitted by satellite, according to sources that spoke with German newspaper *Der Spiegel*, which has published substantial information on intelligence activities – particularly SIGINT and friendly nations conducting intelligence activities against each other – since the 2013 Snowden revelations.²⁴⁰ This example demonstrates the enduring value of SIGINT to strengthen a state’s position in diplomatic negotiations. The Five Eyes members are not the only states engaged in this type of collection; the example provided earlier was that of Secretary of State Albright’s private comments to US officials being known by a French diplomat at the United Nations, doubtless through SIGINT.²⁴¹ No matter the intent of the mediator, knowledge of the other side’s statements when one is not present can only bolster one’s bargaining position. This incident additionally illustrates the enduring prevalence of conducting intelligence on friendly states, even close allies. While the target is required for public opinion purposes to express outrage, and while the diplomats targeted likely genuinely feel such sentiments, it is an enduring and understandable activity, in which the victimized states also engage.

3.4 Conclusions

Valuable trading partners capitalize on their comparative advantage. Canada has had two core factors contributing to its comparative advantage in SIGINT sharing: geography, and quality. This chapter has analyzed both in detail, including the changing weight of such factors

²⁴⁰ Der Spiegel, “Israel eavesdropped on John Kerry in Mideast Talks”, *Der Spiegel*, 3 August 2014.

²⁴¹ LaFranchi.

over time, as capabilities vary. Furthermore, Canada possessed an *absolute* advantage over its trading partners in the early stages of the Cold War due to its ability to intercept Soviet signals inaccessible to its allies.

While geography is no longer critical for SIGINT collection due to the development of satellites, Canada's geography played a crucial role in ensuring the country's value in the eyes of its intelligence partners when Canadian SIGINT was in its nascent stages. Canadian SIGINT has also punched above its weight in terms of quality at times throughout its development, as demonstrated by archival materials examined in this chapter. The value has not stayed constant, and in the late stages of the Cold War the far more capable National Security Agency was frustrated with Canada's meagre contributions. However, in the post-Cold War period Canadian SIGINT has had known benefit for its Five Eyes partners' counterterrorism efforts, as in thwarting previously-mentioned terrorist plots.

Canadian SIGINT has directly benefited its home country's national security by blocking plots that targeted Canadians. It has further economic value as a means of trade to further Canada's diplomatic and defensive partnerships and therefore strengthen national security, furthering the country's own self-preservation.

Conclusion

Intelligence sharing is an undertheorized and understudied aspect of international relations and intelligence studies. Within this field, Canadian SIGINT and the Five Eyes alliance have flown still further under the radar, both in academia and in public consciousness. Questions in previous attempts to analyze Five Eyes and Canada's role can now be answered. This thesis has employed recently-declassified archival materials and theories of international trade and international relations to illuminate the value of Canadian signals intelligence in intelligence sharing.

Through capitalizing on comparative advantages, both Canada and partner states have benefited from trading signals intelligence. SIGINT has historically been Canada's strength in foreign intelligence collection; this thesis has demonstrated how Canadian SIGINT has provided leverage to further the country's security policy objectives by ensuring its inclusion in intelligence-sharing relationships. This study includes concrete examples of Canadian intelligence identifying and contributing to the mitigation of threats to Canadian national security; nonetheless, the greatest value is in being a means of trade. "Canada is a net importer of intelligence", as declared by the CSE Commissioner's office in 2012.²⁴² Canadian SIGINT has had three main benefits: first, directly supporting Canadian national security, second, serving as a means of trade to obtain intelligence from partners to further Canadian security, and third, enhancing Canada's relationships with strategic partners.

Canada having autonomous signals intelligence collection capabilities was not a foregone conclusion at the end of World War II. Canada had decent SIGINT capabilities during World

²⁴² Office of the Communications Security Establishment Commissioner, "Update on an ongoing review of CSE's foreign signals intelligence sharing with international partners", *Annual Report 2011-2012*, (Ottawa: Office of the Communications Security Establishment Commissioner, 2012), 26.

War II, with its Examination Unit's intelligence products being valued by the British and Americans; however, the Canadian operations were subordinate to those of their allies, with British oversight and technical expertise playing a critical role in Canadian SIGINT activities. Canadian policymakers opted for an autonomous Canadian SIGINT capability after the war due to comparative advantage; Canada needed its own product of value in order to be included and obtain intelligence from its allies. SIGINT had demonstrated its value in wartime, and the military in particular advocated for independent Canadian SIGINT as the country's source of foreign intelligence. Britain was pursuing the wartime model of Commonwealth dependence for both intelligence production and collaboration. As demonstrated from the declassified UKUSA files, it was due to American insistence in the UKUSA negotiations that the Canadians were incorporated into postwar intelligence sharing as a direct collaborator with Washington, rather than communicating through London. Canada's postwar approach to intelligence mirrored its foreign policy evolution, as the country gradually increased its independence from Britain, enhancing its autonomous capabilities but meanwhile drawing steadily closer to the United States.

Canada's comparative advantage has been in two areas: geography, and quality of intelligence. The first factor is primarily historical: through geography, Canada had access to a wider range of targets than its partners, which benefited it during World War II and in the Cold War, until the Americans developed satellite capabilities. In the early stages of the UKUSA relationship, geography allowed Canada to collect intelligence on the Soviet Union across the Arctic, a critical comparative advantage ensuring value to its partners. The second factor, quality, resided primarily in tactical intelligence in the early stages of the Cold War – the value of Canadian tactical SIGINT is demonstrated in the UKUSA materials. Quality of Canadian

SIGINT has continued and reportedly expanded into the realm of analysis; individuals familiar with Canada's involvement in Five Eyes indicate that Canadians are drawn on for analytical quality, into the present.²⁴³ This can also be demonstrated in some tangible examples, including CSE systems coming to the NSA's assistance during the 2000 four-day computer outage,²⁴⁴ and the establishment of the CSE's Tutte Institute, which employs individuals with high mathematical and analytical capability. Much can also be gleaned from CSE's staffing and budget numbers; in recent years CSE's budget has increased, despite cutbacks in other Canadian security and intelligence entities; in 2008 CSE's budget was double that of a decade earlier, in the aftermath of the Cold War.²⁴⁵

As a middle power, Canada has set its targets based on allied priorities but has managed to produce a product of value. While some middle powers such as Sweden have leveraged SIGINT capabilities to safeguard their neutrality, Canada has used intelligence for alliance tending. Present-day CSE acknowledges its "unique partnerships" with the Five Eyes members and acknowledges that it is a "substantial beneficiary" from the unique relationship,²⁴⁶ founded in cultural similarities, high levels of trust, and mutual security interests.

The Five Eyes, or UKUSA, has been Canada's most significant intelligence-sharing relationship through its history of autonomous foreign intelligence collection. A CSE presentation leaked by Edward Snowden states that "Canada benefits tremendously" from the alliance, adding "It is precious [...] Treat it with Care!"²⁴⁷ The Five Eyes partnership is unparalleled in its scope and endurance, explained through value and trust. Furthermore,

²⁴³ Member of Canadian intelligence community. Telephone Interview with Author. March 2013, and Former member of US intelligence community. In-Person Interview with Author. March 2015.

²⁴⁴ Rudner, "Canada's Communications Security Establishment", 480.

²⁴⁵ Ibid, 478.

²⁴⁶ Communications Security Establishment Canada, "Signals Intelligence (SIGINT)".

²⁴⁷ Freeze, "How CSE became an electronic spying giant".

membership in NATO has expanded Canada's access to intelligence and its ability to contribute to the intelligence available to its partner states, thereby enhancing mutual security. Canada, the U.S., and Britain have further strengthened their security ties through membership in both relationships. Canada's inclusion in Five Eyes from 1947 onward marks the recognition of the value of Canada's contributions as an autonomous SIGINT producer and trading partner.

Economics demonstrates the value to all parties in sharing intelligence: expanding their intelligence products beyond that allowed by their own resources. Similarly to conventional international trade, cultural norms, common language, and other similarities can enhance the incentive to trade. Cultural similarities play a key role in Five Eyes, as demonstrated by the accusation from a French politician of its being an "Anglo-Saxon eavesdropping network".²⁴⁸ Unlike typical trade in goods and services, intelligence sharing must take into account the security impact of sharing information with another state. States must also ensure their partners' intelligence is reliable; economic theory takes into account quality control. Gains from trade coupled with realism explain the incentives to engage in limited intelligence-sharing arrangements to obtain information of value for furthering one's own security; this thesis has demonstrated examples where non-friendly states may engage in limited cooperation to obtain intelligence to which they otherwise have no access. However, trust and mutual security interests can lead to strong, lasting cooperation, which is where liberal institutionalism helps illuminate the scope and endurance of Five Eyes.

The Five Eyes members have not maintained consistent contributions throughout the relationship's history; particularly after the advent of satellites, the Americans' capability far outstripped that of their partners, as demonstrated by NSA Director Odom's comments in the

²⁴⁸ Quoted Rudner, "Canada's Communications Security Establishment", 481.

1980s expressing frustration with the inadequate contributions of the Five Eyes partners.²⁴⁹ Furthermore, the member states have experienced security breaches and policy differences resulting in members being temporarily frozen out of the arrangement, or at least in member states examining and enhancing their internal systems to reassure their partners that they remained a trusted ally. The latter was the case in Canada with the Delisle espionage case. Despite the concerns over security of Canadian intelligence systems, however, this case underscores the conclusions of this study: Canada is a valued partner in the security and intelligence realm. Delisle stated in court that the intelligence he conveyed included minimal Canadian content, indicating that Canada had *access* to valuable intelligence. The breach focused around NATO intelligence. The value for the Russians in recruiting a spy in the Canadian navy was in tapping into an intelligence network, reflecting Canada's membership in broad, highly-valued intelligence-sharing relationships.

While such incidents have undoubtedly led to soul-searching and changes in internal security to restore trust in the guilty country, the unique level of mutual trust has endured. Thus, while the Snowden affair has prompted serious review and adjustments to security protocols in the NSA and likely in its partner agencies across the Five Eyes countries, the alliance itself can be expected to withstand this incident as it has many others over its history. This points to the unprecedented strength of the alliance and its value to all five member states.

Canadian signals intelligence was built, expanded, and leveraged to ensure Canada's value to its Five Eyes partners. While Canadian SIGINT has directly benefited national security, its greater value has always been as a means of trade. Possessing lesser capabilities than its partners, Canada has acted on gains from trade, identifying comparative advantages in geography

²⁴⁹ National Archives, "William E. Odom Papers", Folder 8, 1986.

and analytical capabilities and leveraging them to ensure access to intelligence, military support, and political relationships to further its national security.

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