BREACHING BARRIERS

A COMPREHENSIVE APPROACH TO SPECIAL OPERATIONS FORCES DECISION-MAKING IN NON-TRADITIONAL SECURITY ENVIRONMENTS

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THE CANSOFCOM PROFESSIONAL DEVELOPMENT CENTRE

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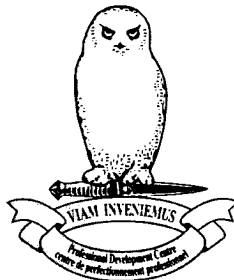
1. develop the cognitive capacity of CANSOFCOM personnel;

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5. record the classified history of CANSOFCOM;

6. develop CANSOF publications that provide both PD and educational materials to CANSOF personnel and external audiences;

7. maintain a website that provides up-to-date information on PD opportunities and research materials; and

8. assist with the research of SOF best practices and concepts to ensure that CANSOFCOM remains relevant and progressive so that it maintains its position as the domestic force of last resort and the international force of choice for the Government of Canada.

BREACHING

BARRIERS

BREACHING BARRIERS:

A COMPREHENSIVE APPROACH
TO SPECIAL OPERATIONS FORCES
DECISION-MAKING IN NON-TRADITIONAL
SECURITY ENVIRONMENTS

Major Steven Hunter

VIAM INVENIEMUS

Professional Development Centre
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FOREWORD

I am delighted to introduce the ninth monograph produced by the Canadian Special Operations Forces Command (CANSOFCOM) Professional Development Centre. As I have stated previously, our aim is to expand the growing body of literature on Special Operations Forces (SOF) in general and Canadian Special Operations Forces in particular. In this vein, we are progressing our vision of creating a series that provides quality articles that address topics pertinent to CANSOFCOM personnel and that are also of general interest to a wider audience, including the military community at large, military and civilian decision-makers, international allies, as well as the Canadian public.

It is thus my pleasure to introduce *Breaching Barriers: A Comprehensive Approach to Special Operations Forces Decision-Making in Non-Traditional Security Environments* by Major Steven Hunter. This volume looks at the unique nature of SOF operations in the highly ambiguous and complex post-9/11 security environment, specifically the decision-making challenges that SOF personnel face. As Major Hunter asserts, in many cases SOF operations become the "tactical expression of government direction at the highest level." Hunter explores the difficulties inherent in operations in non-traditional environments where SOF teams must often integrate into a "whole of government" concept and be capable of making rapid decisions to support Government of Canada objectives.

As always, we hope this publication is both informative and sparks discussion and reflection. Please do not hesitate to contact me if you have comments or topics that you would like to see addressed as part of the CANSOFCOM monograph series.

Dr. Emily Spencer
Director Research and Education / Monograph Series Editor
CANSOFCOM Professional Development Centre

INTRODUCTION

Since the end of the Cold War, the global security environment has become increasingly complex resulting in an unprecedented number of threats, adversaries, and non-state actors.[1] Adding to this complexity is the potential fragmentation of the international system and a possible decline in cooperation between states. This potential fragmentation results from the rising significance of non-state actors and their networks, the emergence of new global actors, the expansion of regional blocs, and the impacts of emerging technologies.[2]

Notably, contemporary and future military engagements will most likely involve a non-state belligerent living amongst a larger population, an adversary who is less constrained by borders and thereby difficult to pinpoint. Not surprisingly, asymmetric activities will remain the adversary's method of choice as non-state actors exploit the vulnerabilities of powerful states while avoiding the constraints of national and international law.[3] In this paradigm, based on perspective, an individual may be defined as a terrorist one day, a criminal the next, and an advocate the day after that. He/she may live in one country, work in the next and routinely travel to another.

To counter the complex challenges of the contemporary security environment and this form of belligerent, governments will continue to seek innovative solutions to protect their interests. These solutions will require the effective deployment and employment of the various instruments of national power.[4] Notably, the successful employment of these instruments is dependent on the ability of various government agencies to effectively integrate, collaborate, and develop viable solutions. As a unique military instrument of national power that directly addresses these issues,

3

special operations forces (SOF) will remain a key national security instrument with the potential to contribute military solutions to emerging complex national security problems.

The missions SOF perform are by definition unique. While SOF are employed in theatres of operation as a necessary adjunct to conventional military capabilities,[5] in contemporary theatres such as Iraq and Afghanistan, for example, SOF fill roles and missions for which conventional capabilities do not exist.[6] For instance, in the Canadian context, Canadian Special Operations Forces Command generates Special Operations Task Forces (SOTF) which are "task-tailored" to meet the needs of a specific theatre.

In this capacity, the roles and missions of Canadian Special Operations Forces (CANSOF) are unique but synchronized with those of conventional forces in order to achieve an overall effect. To facilitate the requirements of a theatre chain of command, SOF traditionally employ an operational staff and utilize an analytical planning process to enable decision-making. As a Department of National Defence (DND) paper notes, "SOTFs are most effective when they are fully integrated into the Joint/Theatre Task Force Commander's overall campaign plan. SOF employment is nested in the superior commander's intent and their actions remain visible and transparent to those who need to know."[7]

Increasingly, SOF are being asked to operate outside of traditional theatres of operation as a unique military instrument of national power. In this progressively frequent scenario, the role of SOF is to provide political and military leadership with qualitative military advice, strategic communications, and tactical options to address complex national security issues. The complexity of such missions is often compounded by a lack of available information, resulting in sometimes minimal and ambiguous government intent and direction.

4

Compounding these challenges, SOF regularly engage in such missions as the single military entity within a whole of government (WoG) framework. At the political strategic level the aim of a WoG approach is to develop a menu of options for the Government of Canada. At the tactical level this integration is very challenging. For instance, in these non-traditional military environments, SOF's desire to remain concealed behind a veil of secrecy can adversely affect integration with national security partners, resulting in a misunderstanding of SOF's role. Further, in a hierarchical organization such as the Canadian Forces (CF), the complexity and uncertainty surrounding ambiguous national security crises may fail to meet the threshold of information expected by senior military and political-strategic decision-makers, resulting in delayed decision-making and lost opportunities to achieve a desired end-state. For SOF, the risk is one of missing the opportunity to act effectively and in a timely fashion, while simultaneously dealing with a lack of information and delay as senior decision-makers continue to seek clarity where clarity may not exist.

Some of these institutional concerns have been alleviated with the establishment of CANSOFCOM headquarters (HQ). By providing a critical interface with strategic military leadership and maintaining unique relationships with various government departments, CANSOFCOM HQ has significantly increased SOF's ability to rapidly deploy in support of the Government of Canada's national objectives. However, the increased reliance on SOF to provide military options in complex and uncertain environments has resulted in the development of a unique "operational" level of war that remains challenging. In many cases, the Government of Canada requires SOF to perform tactical actions that will achieve strategic aims. Ultimately the challenge for SOF is to transform minimal and ambiguous national direction in a timely manner into tactical actions that will have a strategic effect and to do so within the WoG framework.[8]

Breaching Barriers addresses the unique decision-making challenges facing SOF in non-traditional military environments arguing that for SOF to be effective, they must be fully integrated into WoG teams and be enabled to make rapid decisions to support Government of Canada objectives. The proposed method to meet these requirements is through a holistic effects-based approach to special operations whereby SOF produces military options in collaboration with other Government of Canada agencies and departments.

The ultimate goal is to present military options to the government that have been developed in concert with WoG partners to achieve an overall "effect" in addressing national security problems. Critical to achieving this solution is an understanding of the social domain and an appreciation for the significance key relationships play in facilitating the employment of SOF. Implicit throughout this monograph is the understanding that CANSOFCOM may have a unique requirement to deviate from some CF doctrinal processes, while remaining accountable to the Government of Canada, in order to facilitate a timely, efficient and agile response where high risk and high effectiveness must reside together, and failure could be catastrophic for the Government of Canada.[9]

Breaching Barriers begins by describing the contemporary global security environment and the challenges facing SOF in the conduct of military missions in these non-traditional situations. Chapter one discusses the rapid evolution of the contemporary operating environment (COE) and presents Canada's WoG approach to national security. This chapter introduces CANSOF and describes its evolving role as a unique military instrument of national power. Chapter two focuses on the concepts of complexity and uncertainty and introduces the systems approach, specifically complexity theory, as a means of understanding the human ability to characterize complex problems. This chapter posits that understanding

a systems approach to complexity and uncertainty can enable military thinkers to better describe, predict, and counter an adversary's actions in a way that analytical processes cannot.[10] Further, it explains the notion of complex adaptive systems, characterizing SOF as a complex adaptive organization operating within multiple systems. Next, chapter three presents effects-based approaches to decision-making in the complexity and uncertainty of the contemporary security environment. It provides the background behind effects-based military operations (EBO), addressing its key concepts and criticisms, and presents a strong case for adopting such an approach to complex special operations. Subsequently, chapter four highlights the significance of the social domain for the successful integration of SOF into a WoG framework. It discusses the significance of cultural intelligence, institutional bias and the importance of choosing the appropriate SOF decision-makers to ensure acceptance into a WoG environment. In conclusion, key findings highlighting the importance of applying an alternative approach, namely an effects-based approach, to enhance SOF decision-making in the contemporary and future operating environments, are addressed. As a unique military instrument of national power employed in ambiguous and uncertain national security situations, it is critical that SOF improve their ability to seamlessly integrate into WoG teams and collaborate with national security partners to meet the high expectations of the CF, the Government of Canada and, most importantly, Canadian citizens.

CHAPTER 1
SOF AND THE CONTEMPORARY OPERATING ENVIRONMENT

No longer are we fighting the traditional enemy like the Russian bear. The threat now is a ball of snakes that sometimes manifests itself as a smaller portion of the high-intensity warfare but also spans the spectrum right through terrorism, organized crime and proliferation of weapons of mass destruction.[11]

War has always been complex, uncertain and volatile. Following the Revolutionary and Napoleonic wars of the late 18th and 19th centuries, German military theorist Carl von Clausewitz attempted to explain war's complex and unpredictable nature by accounting for the uncertainty in which real-world events unfolded, the unpredictability of human nature and the complexity of the physical and cognitive environments.[12] War's complexity has simply been underscored throughout the centuries.

The increased complexity and uncertainty of the contemporary global security environment can be attributed primarily to the forces of globalization and the rise of non-state actors residing within failed and failing states. As a result, a number of nontraditional security threats have materialized including the evolution of irregular warfare, the prominence of non-military acts of war (such as the attack of September 11 on the World Trade Center (9/11)), and the expansion and escalation of conflict beyond the traditional battlefield.[13] Today's application of military power is no longer simply a means of war as governments look for innovative ways to address the complexities and uncertainties associated with the contemporary security environment. Indeed,

since the end of the Cold War the application of military power has become far more frequent and extensive as military forces are deployed in a variety of non-traditional roles such as peace support operations, disaster relief, military training assistance and support to other government departments abroad.

Meeting the emerging threats of the contemporary security environment is a challenge for all governments. Large conventional military deployments to counter modern security threats are not always feasible or desirable.

Consequently, governments have looked to the unique skills of SOF as a viable military alternative to meet contemporary security challenges that often lie somewhere between international law enforcement and the need for a large conventional military response. In an article for *Joint Forces Quarterly*, retired Colonel John M. Collins highlights SOF's suitability for such missions noting that "[u]nique training and skills enable [SOF] to operate in situations where conventional units cannot be used for political or military reasons...they place a priority on finesse rather than brute force and possess overt, covert, and clandestine capabilities not found elsewhere within the Armed Forces."[14] Further, Collins adds that "...[s]elf-reliant, highly motivated, superbly-trained SOF... seem ideally suited for many missions which conventional forces cannot perform as effectively or economically in the twilight zone between peace and war."[15]

SOF's ability to thrive in ambiguity is appealing to governments as they look to minimize political risk and avoid unnecessary consequences. This asset alone makes SOF particularly well suited for employment in these sensitive environments. In addition to purely military roles, SOF's unique capabilities can be integrated with those of other agencies, enhancing the options produced by WoG teams in the application of diplomatic, informational and economic instruments of national power.[16]

10

Nonetheless, there remain many challenges to employing SOF in non-traditional military environments which are largely associated with the social complexities that result from interactions between a growing number of actors. For example, in the face of a national security crisis, it behooves strategic decision-makers to rapidly deploy SOF elements to facilitate the development of SOF options. If SOF are not deployed rapidly, then strategic decision-makers might inadvertently eliminate viable military options by failing to place elements "in the right place at the right time."[17] However, deploying SOF rapidly creates uncertainty, resulting in minimal and ambiguous strategic direction where SOF must attempt to interpret government intent. Another challenge concerns integrating SOF into WoG teams where they are the only military representation. This integration (without the appropriate socialization) increases the complexity of national security situations and adds to the challenges of military decision-making in these non-traditional environments. Additionally, the CF's hierarchical military structure adds institutional complexity to employing SOF outside of traditional doctrinal military processes. The resulting institutional inertia and leadership interests may impact the ability of SOF to make rapid and effective decisions.

This chapter provides an overview of the contemporary security challenges facing the Government of Canada and introduces the national security framework that has been established in response to this situation. It will demonstrate the utility of CANSOF as a unique military instrument of national power, arguing that if effectively integrated into a WoG security framework, CANSOF is the right military instrument to address many complex national security challenges. Chapter one concludes by summarizing some of the challenges facing SOF decision-makers within the current Canadian WoG framework.

The Contemporary Global Security Environment

Since the end of the Cold War, globalization has been a large force in shaping the strategic environment. Globalization, defined as the rapid flow of goods, services, people, technology and ideas, which are less constrained by regulations and unimpeded by borders, continues to present unique challenges to states as they attempt to keep pace with its ongoing impacts.[18] Although not a new phenomenon, the increased connectivity and interdependence across social, economic and political domains continues to significantly impact the contemporary global security environment.[19] Globalization has decreased the significance of borders, while at the same time increasing the flow of energy, money, people, security technology and information.[20]

For all of its benefits across the economic, political, social and technological domains, globalization has also contributed to the volatility of states, especially as global power continues to shift and non-state actors become increasingly influential. For example, globalization has increased the ability of threat groups to recruit, finance, resource, network and distribute their ideology.[21] While it is likely that globalization will continue to bring wealth and prosperity to an increasing number of nations, arguably, the gap between rich and poor will widen thereby creating tension and conflict in failing states.[22]

Failed and failing states and the associated regional instability that results will continue to threaten the global order. In NATO's *Multiple Futures Project*, it is predicted that:

> The security agenda of nations will continue to include the consequences of failed states, poverty, famine and expulsion; amidst this turmoil, however, new state and non-state adversaries will emerge, empowered by the

rapid development and incorporation of easily accessible and innovative technologies... Interstate conflicts in different regions of the world will remain likely; while they may not threaten NATO directly, the consequences of such conflicts may have a significant impact on the security of the Alliance.[23]

At face value, most failed and failing states will not present a direct military threat to the extent that a conventional military response will be necessary. However, governments in these states will continue to be unable to perform basic functions such as ensuring sovereignty, providing national security, justice, education and a functioning economy.[24]

Compounding the problem, failed and failing states will continue to provide a haven for those who might attack Canada directly. For example, international terrorist organizations have historically exploited weak states by seeking refuge and utilizing their territory to command global operations. The events of 9/11 demonstrated to North Americans that they are no longer outside of the reach of international terrorism. Terrorist leaders have proven that even when operating from weak states, they possess the ability to generate an attack against the world's most powerful nation.[25]

Although in recent years Al-Qaeda has been dealt significant setbacks, including the death of Osama bin Laden in 2011, terrorism will likely remain a major threat to Canadians both domestically and abroad. The primary cause will likely continue to be disenchanted youth who turn to violence to pursue their objectives and who are often motivated by a desire for revenge against the West.[26] Terrorist organizations will continue to seek unique ways to attack Western nations, including the disturbing possibility that they might acquire and utilize weapons of mass destruction (WMD). The proliferation of WMD and the rising influence of

13

non-state actors will remain of concern to governments as they assess future threats.[27] As such, the Government of Canada needs to be prepared to deal with all of these potential menaces.

Canada's National Security Policy – a Whole of Government Approach

Strategic decision-making in the contemporary security environment is fraught with uncertainty. Emily Goldman, Professor and Deputy Director for Interagency Coordination at U.S. Central Command, states that "…[t]he greatest difficulty of military statecraft is that decisions must deal with future uncertain contingencies. What opponents must be faced, with what allies, and under what circumstances?"[28] Governments ultimately must make the tough decisions, assuming risk across the full political spectrum. Therefore, governments are more likely to choose strategies that provide multiple options from across the instruments of national power.

For the Government of Canada, a WoG approach is consistent with the development of such options. The Government of Canada functions at the national strategic level where political leadership makes decisions regarding the application and coordination of the instruments of national power necessary to meet policy objectives. It is also where military-political aims originate.[29]

Importantly, in the aftermath of 9/11, the Government of Canada initiated a review of its approach to national security. The result was a document entitled, "Securing an Open Society: Canada's National Security Policy." This document outlined the government's intent to take an integrated approach to national security. (See Figure 1.) The circle in the centre of Figure 1 represents the focus of Canada's national security strategy and the clear link between international and national security. As demonstrated in the figure,

14

the Government of Canada assessed that there were three enduring core national security interests that it must continue to pursue: protecting Canadians at home and abroad (including an obligation to assist Canadians working and travelling overseas and the protection of diplomats); ensuring that Canada does not become a base of operations for threats to our allies, specifically the United States; and making sure that Canada continues to contribute to international peace and security.[30]

Moreover, on 12 December 2003, in an attempt to effectively integrate departments to better respond to national security crises, incoming Prime Minister of Canada Paul Martin directed additional organizational changes to Canada's national security architecture. (See Figure 2.) Notable additions included the strengthening of Public Safety, the establishment of the Canada Border Services Agency (CBSA), and the creation of a National Security Advisor.[31] Subsequently in 2004, the Government of Canada committed $690 million to implement national security reforms in support of these initiatives, which helps demonstrate Canada's resolve towards improving its approach to national security.[32]

Threats undermine the security of...

Individual   Society/State   International System

Personal Security

- Crime/policing
- Economic security
  (product/consumer protection)
- Health (e.g. food and water safety)
- Boating/highway safety
- Workplace safety

National Security

- Organized crime
- Identify theft
- Natural/man-made
  disasters and emer-
  gencies
- Contamination of
  food/water supply
- Domestic health
  emergencies

- Transnational
  organized crime
- Illegal entry
- Armed conflict
- Global pandemic
- Failed/failing states
- Border security
- Aviation security
- Marine security
- Cyber-security
- Terrorism

- Domestic extremism
- Espionage
- Defence of Canada
  and its sovereignty
- Critical infrastructure
- CBRNE attack

International Security

- Conflict not impacting
  directly on Canadian
  security
- Environmental
  degradation
- Global poverty

Responsibility for Action

Individual   Community   Provincial   National Government   International Community

FIGURE 1. The Scope of National Security Policy[33]

16
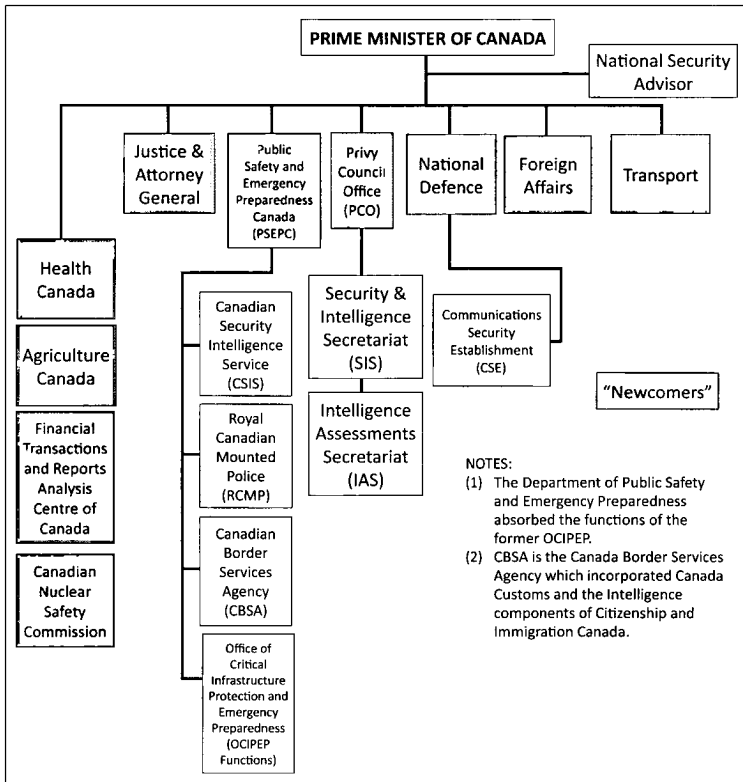
FIGURE 2. The Canadian National Security Framework post-December 2003[34]

These changes improve the CF's ability to deal with emerging international threats, the Government of Canada specifically identified a requirement to enhance the capabilities of SOF, at the time, specifically, Joint Task Force 2 (JTF-2). This gesture demonstrated the increased importance of SOF as a unique military instrument of national power.[35] In addition, this announcement was the genesis for the development of a Special Operations Command, CANSOFCOM, and the additional units that reside within CANSOFCOM today.[36]

Another way that Canada improved its response to national security issues was by committing to a WoG approach. Although

this approach seems logical and well-intended, it has proven challenging to implement. One obstacle is the very nature of Canada's Westminster system of government. At the very core of the Canadian system of government, individual ministers are held accountable, imposing bureaucratic and legal barriers that include mandated accountabilities and departmental allocations that cannot be shared or pooled across departments. These policies constrain the ability for interdepartmental teams to effectively and efficiently integrate.[37]

Notably, these constraints have proven detrimental to national security integration. For example, the lack of cooperation in sharing information and intelligence between government agencies has consistently proven problematic. During the 2010 Vancouver Olympics, for example, different government agencies had unique standards for assessing access to potentially critical intelligence. Because there is no government-wide system of collation, classification and distribution, intelligence sharing was handled in an inconsistent and *ad hoc* manner. Underscoring this issue is the challenge of effective integration of organizations when no single leader (or commander) exists to oversee the overall effort.[38] In the event of a major security crisis, these variables could have caused catastrophic failure for the Government of Canada.[39] As such, these factors are important when considering the integration of SOF into WoG teams as CANSOF is an intelligence-led organization which benefits by access to all intelligence in order to rapidly make decisions to develop viable military options.

Regardless of the challenges, governments will continue to look for innovative ways to address emerging national security issues in the contemporary security environment. Goldman notes:

> The perceptual reference points and decision frameworks
> that guided national security decision-making since the

18

mid-twentieth century are no longer meaningful in today's world. The strategic environment has been characterized in national security documents and debates over the past decade as uncertain and chaotic. There is no dominant threat, no single strategic challenger, no clear enemy... (instead) we now confront a greater number of threats, greater diversity in the types of security actors that can threaten our interests, and a more interdependent world in which rapidly emerging technologies quickly diffuse and are exploited by others in unanticipated ways.[40]

Notably, attacks may include traditional warfare combined with irregular warfare, terrorism and/or organized crime. Adversaries will take advantage of mass media to facilitate their global message rejecting the values of the West. Our population and our centres of commerce will remain vulnerable, as they represent the global economy that is detested in many parts of the world. Adversaries will continue to take the initiative and exploit any vulnerability in the virtual or physical domains.[41]

Additionally, threats to Canadians abroad are on the rise. One emerging security challenge facing the Government of Canada results from Canadian citizens travelling to some of the world's most dangerous places for both business and pleasure. In recent years, high profile kidnappings of prominent Canadians have occurred in Mali, Afghanistan, Iraq and Somalia.[42] As these activities are largely criminal in nature, the Royal Canadian Mounted Police (RCMP) assumes the lead role in response to such crimes against Canadians. The challenge for the RCMP, which is primarily a domestic law enforcement agency, in such cases is that it may not possess the capability to operate in certain high threat environments. If coalition, host nation or Canadian Forces are not available (or capable) of providing the necessary support to the RCMP, then the risk to Canadian citizens will generally increase significantly. As such,

19

the CF needs to be prepared to fill the gaps, a role that SOF are particularly well suited to.

The Department of National Defence

One complex challenge facing modern western militaries in today's uncertain global environment is predicting national security threats and mitigating their potential consequences. To meet this challenge requires guidance from political masters in the form of strategic direction.

As such, in 2009, the Government of Canada codified its strategic priorities for the CF in the *Canada First Defence Strategy* (CFDS), assigning priority to the defence of Canada. This role includes supporting law enforcement agencies and other government departments (OGD) with niche capabilities, defending against domestically-generated attacks and assisting with border security efforts when required.[43] Additionally, in order to align the CF with directed strategic priorities and remain aligned with the 2005 *International Policy Statement for Defence*, the Government of Canada hereby approved the transformation of the CF, which included institutional changes to the CF's structure, enabling greater operational command. This transformation established Canada as an "integrated theatre of operations" overseen by a single operational command headquarters, with a goal to "more effectively meet [DND's] fundamental responsibility to protect Canadians at home."[44]

The second defence priority identified in the CFDS by the Government of Canada was the security of the North American continent in partnership with the United States. The Government of Canada placed significant importance on this continued contribution, explicitly highlighting the need to remain a reliable partner to the United States, a requirement that is in Canada's strategic interest. The CFDS directed that the armed forces of Canada and the United States effectively collaborate on operations both in North America

and abroad.[45] The *International Policy Statement* further amplified this requirement for the CF by: first, dictating that the CF must strengthen its ability to counter threats originating in Canada; second, noting that the CF must improve its ability to operate alongside U.S. forces; and third, outlining that the CF must continue to participate in international operations to address threats at their source.[46] Although subtle in the documentation, the link between domestic and expeditionary operations as a means to counter emerging threats is an important one. It implies that Canada is willing to utilize CF assets to protect Canada as a sovereign state and secure the North American continent thereby addressing potential national security issues at their source.

The third defence priority identified by CFDS was the contribution of CF elements to international peace and security operations. The government recognized that to remain competitive economically, there exists a requirement to project military power, making a contribution to international stability. In this sense, Canada has an obligation to the international community to do its part to address global security challenges and potential threats at their source.[47] Moreover, this practice helps to ensure that Canada remains secure and maintains its economic prosperity.

In today's uncertain global security environment, a challenge for both the Government of Canada and the CF remains the ability to effectively meet emerging international threats with the appropriate response. The threat to Canada posed by non-state actors (including transnational criminal groups, terrorist networks and violent religious extremists) continues to increase. Future non-state adversaries will likely continue to hide within larger populations making themselves harder to identify and their actions less predictable. Furthermore, proliferation of weapons between states and non-state actors will increase the potency of potential adversaries.[48] Clearly, the uncertainty surrounding contemporary

21

threats to Canada demonstrates the requirement for a flexible, rapidly deployable military capability that can produce pragmatic solutions where traditional military or law enforcement responses may not be viable.

The choice to deploy military forces to meet emerging threats will remain a delicate and deliberate one for the Government of Canada, however. Naturally there will be significant political risk and some hesitation associated with the deployment of CF assets where the potential for armed intervention exists. The primary re-action would generally be to subject military forces to the rigorous authority, direction and oversight by the Government of Canada at multiple levels and ensure a high level of situational awareness before making any commitments to providing military forces.[49] But, to be effective, the Government of Canada will have to ad-dress potential threats rapidly to ensure an immediate action that might save lives and reduce human suffering. This rapid-response will require the assumption of increased risk. Nonetheless, to pro-tect Canadians in the complex global security environment, it is a necessity.

A successful response to complex endeavours requires that the right conditions are set to enable rapid military decision-making. Political constraints and physical limitations have the potential to influence the freedom of action of military commanders to deal effectively with complex threats.[50] In weighing the expected and unexpected costs against national interests, values and public security, governments must make every effort to align functions and simplify the process for military decision-makers, while at the same time assuming some of the risks inherent in the conduct of such operations.[51] Failure to do so may prove detrimental to national security. As such, the Government of Canada needs a tool to meet these requirements and CANSOF is particularly well suited for the role.

22

The Changing Nature of Special Operations

The ongoing evolution of special operations has made consensus on an accurate and agreed upon definition difficult. For example, in the context of conventional warfare, military historian and strategist Edward Luttwak attempted to define special operations as, "...self-contained acts of war mounted by self-sufficient forces operating in hostile territory."[52] This definition clearly does not account for the increased utility of SOF in the non-traditional military environment in which SOF are increasingly employed. A more recent definition found in United States Joint Publication 3-05 *Special Operations* defines special operations as:

> Operations requiring unique modes of employment, tactical techniques, equipment and training often conducted in hostile, denied, or politically sensitive environments and characterized by one or more of the following: time sensitive, clandestine, low visibility, conducted with and/or through indigenous forces, requiring regional expertise, and/or a high degree of risk.[53]

This latter definition more accurately accounts for the increased uncertainties of contemporary special operations and the variety of environments that SOF may find themselves operating within.

In this context, it is important to understand that although all SOF share some general tenets, nationally their roles and missions may vary substantially making each nation's SOF unique. Nonetheless, there are some important commonalities that distinguish all SOF from most conventional military forces. First, SOF are distinct by virtue of undergoing a rigorous screening, selection and training regime. Second, SOF are flexible, in that they can operate in uncertain, complex and volatile environments as integrated, self-contained teams. Third, SOF are not a replacement for conventional military

forces, but rather conduct alternative missions for which they are more appropriately suited.[54] Another important similarity that most national SOF have adopted is the US concept of the "SOF truths". These truths state that:

- Humans are more important than hardware;
- Quality is better than quantity;
- SOF cannot be mass produced;
- Competent SOF cannot be created after an emergency occurs; and
- Most special operations require non-SOF assistance.[55]

As mentioned, while all SOF may share some tenets, each has its own national heritage that helps to define it. Contemporary Canadian SOF evolved from JTF-2, Canada's national counter-terrorism force. JTF-2 inherited its role from the Special Emergency Response Team of the RCMP in April 1993. From 1993 to 2006, JTF-2 represented Canada's single SOF capability both domestically and abroad.[56]

In 2006, the creation of an independent CANSOF operational command headquarters demonstrates both Canada's increased reliance on SOF to serve as a unique military instrument of national power and its utility as a high payoff, low maintenance resource for the CF. CANSOFCOM was officially established on 1 February 2006 as part of the Chief of the Defence Staff (CDS) General Rick Hillier's CF Transformation. Its role is to provide the CDS with, "...agile, high-readiness Special Operations Forces capable of conducting special operations across the spectrum of conflict at home and abroad."[57] CANSOFCOM provides the Government of Canada with a robust, agile and responsive SOF capability aimed at addressing the emerging threats associated with the contemporary security environment. The Command contributes a wide spectrum of options and can rapidly reorganize to meet the evolving

challenges associated with increased complexity and uncertainty.[58] It generates and employs task-tailored, mission-specific elements able to respond to the requirements of a specific situation.

CANSOFCOM draws its capabilities from four subordinate units which provide the requisite level of expertise and precision to meet emerging security threats. These forces can be rapidly integrated to provide the best response to a specific mission ranging from a single individual providing subject matter expertise, to a larger, precision assault force capable of conducting non-kinetic and kinetic operations in the defence of Canadian national interest. Importantly, CANSOF have consistently proven well suited to support military, diplomatic, informational and economic instruments of national power.[59]

In its short history, CANSOFCOM has proven to be a significant asset to the CF. Its primary purpose is to ensure that the Government of Canada can rely on the best trained, equipped and integrated SOF should the need arise.[60] In serving this role, CANSOFCOM has three core tasks: counter-terrorism operations (domestic and international); maritime counter-terrorism operations; and other high value tasks.[61] Although the Commander CANSOFCOM generally becomes the Deputy Commander CANADACOM or CEFCOM as the situation requires, in certain circumstances CANSOFCOM will employ special operations forces directly on behalf of the Government of Canada, planning, preparing and executing these forces and reporting directly to the CDS.[62]

Consequently, in assessing the emerging threats to Canada associated with the contemporary security environment, an investment in CANSOFCOM makes sense for Canada. Building strong SOF capacities and capabilities, and demonstrating resolve, will position Canada to confront or deter the unknown threat of tomorrow, diversify risks and avoid strategic surprise.[63]

Nonetheless, although CANSOFCOM has achieved a significant amount in its short history, there remain challenges in meeting its mandate. First, although an independent command, the ability to fully enable a rapid and flexible response by streamlining command and control (C2) in a hierarchical military system remains a challenge. Risk associated with special operations makes centralized command and control a natural institutional reflex which results in the emergence of non-contributing layers of decision-making and unnecessary control measures which can reduce precious time to meet emerging threats. Second, authorizing rapid deployments and pre-emptive activities with a view to developing a better understanding of emerging threats and potential operating environments presents risks that may not be acceptable to the CF or the Government of Canada. The result is a lack of appreciation for potential operating environments and a poor understanding of a situation thereby reducing the ability to provide viable options should there be a requirement. It is for these reasons that in order to meet the expectations of the Government of Canada, CANSOF must explore alternative approaches to decision-making in complexity and uncertainty.

Summary

The contemporary security environment continues to evolve rapidly and present national decision-makers with increased challenges in meeting the security needs of Canadian citizens. Solutions to the environmental complexities of the contemporary security environment are challenging and often constrained by the apparatus that exists within government to respond accordingly. In this respect, SOF offer governments increased options across a broad spectrum of capabilities to respond to threats to national security.

26

Notably, many of the complexities of the COE that CANSOF must overcome are internal to the Government of Canada. In the WoG context, social complexities associated with integrating teams from across government departments are created by the processes and policies that constrain the sharing of resources within WoG teams, including intelligence, as well as the lack of a single authority to enable WoG problem solving. Additionally, within DND, institutional complexities have been presented in the form of hierarchical structure, understanding non-traditional military roles and the resulting increased layers of decision-making. These additional complexities have the potential to slow down decision-making, possibly contributing to an inability for SOF to provide the Government of Canada with a rapidly developed, viable option to solve complex national security issues.

In summary, this chapter has presented some of the challenges facing CANSOF in fulfilling a military role in non-traditional, complex and uncertain environments. It has demonstrated that possessing a world class SOF capability is only one aspect of solving complex national security problems. The challenge remains effectively integrating SOF and enabling them to rapidly develop options by limiting institutional inertia both within the Government of Canada and the CF. The ability to meet the expectations of the government in achieving military solutions in a timely and efficient manner requires the Government of Canada and the CF to understand the difficulties inherent in meeting informational thresholds, as well as the limitations of SOF to fully develop an accurate picture to alleviate all associated risks. Although SOF are optimized to work in ambiguity, there is inherent risk that must be assumed by national decision-makers to effectively employ SOF as an instrument of national power.

CHAPTER 2
MAKING SENSE OF COMPLEXITY

In war everything is uncertain, and calculations have to be made with variable quantities. Other theorists direct their inquiry exclusively towards physical quantities, whereas, all military action is intertwined with psychological forces and effects. They consider only unilateral action, whereas, war consists of continuous interaction of opposites.[64]

Some of the increased complexity facing SOF in the contemporary global security environment can be attributed to its emerging role as a unique military instrument of national power. This expanded role has brought with it many challenges. Much of the increased complexity exists above and beyond simply addressing tactical military problems. It includes the organizational challenges of integrating SOF into a WoG framework and the institutional challenges for the CF in employing SOF in unique environments while attempting to maintain a hierarchical C2 framework which is not necessarily conducive to supporting the rapid development of practical military solutions to national security crises.

This chapter argues that in order to effectively and efficiently employ SOF in non-traditional military environments, CF leadership must view SOF as a complex adaptive organization which exists within multiple complex systems. Achieving such a vision requires a cognitive shift in the way CF leadership envisions the employment of SOF, as well as possible organizational changes aimed at reducing the constraints on SOF decision-makers. Internally, CANSOF must re-evaluate the methods in which it approaches complex issues, integrating closer with WoG partners to facilitate a

more holistic view of, and solution to, national security problems. To cope with growing complexity, SOF must develop an improved understanding of the COE through complexity science.

Complexity science, which has evolved from the study of ecosystems, has emerged as a useful means of understanding the complexity associated with the COE. Chapter two introduces systems thinking as an empirical approach to explaining modern complexity. It provides a basic understanding of complexity, suggesting that SOF decision-makers can better describe, predict and counter an adversary's actions in a complex and uncertain environment by analyzing complex problems through the lens of complexity science.[65] Finally, this chapter demonstrates that SOF are a complex adaptive organization operating within multiple complex adaptive systems (CAS). As such, to effectively and efficiently meet the expectations of the Government of Canada, they must re-assess the way in which they approach national security problems in non-traditional military environments.

Newtonian Mechanistic Science and Linearity

Prior to the 17th century, humans attempted to understand the world's complexities through revelation and insight. Although the resulting theories were interesting, they generally failed when confronted with actual experience. The emergence of modern science in the 17th and 18th centuries changed this state by welcoming confrontation with experience and discarding theories that were not testable or failed against experience.[66] During this period, physicist and mathematician Sir Isaac Newton introduced mechanism as the "first major scientific discourse" in which the world could be explained as an entirely mechanical system.[67] At its core, Newtonian mechanics proposed that the world and its contents were a giant machine. In order to rationalize his theory,

Newton's preferred metaphor was a clock, with its many detailed parts, moving along in a linear, predictable, and measurable fashion.[68]

Generally Western culture has embraced linear behaviour, such as that explained by Newton's clock metaphor. Utilizing a linear reductionist approach to problem solving implies that the solution to the whole problem results from systematically solving its many pieces. In fact, it is a natural human tendency to break up complicated problems into manageable pieces in order to reach a solution.[69] Our education system promotes it, our governments execute it, and it drives our national security policy and military strategy.[70]

Not surprisingly then, early military theorists turned primarily to Newtonian mechanism as a means of understanding warfare. Newtonian mechanism was the most elegant and precise science of its time and contained analogies, metaphors and premises that could, it was thought, explain the act of two military forces engaging one another in traditional combat.[71] Retired U.S. Marine Corps officer and military theorist John F. Schmitt notes that:

> Newtonian war is linear: a direct and proportional connection can be established between each cause and effect. (Here "linear" refers to the dynamical properties of a system rather than to linear formations or frontages on a battlefield.) Small causes have minor results; decisive outcomes require massive inputs. In the Newtonian view, linearity is a good thing because linear systems are tame and controllable; they do not do unexpected things. If you know a little about a linear system you know a lot, because if you know a little you can calculate the rest.[72]

Indeed, it is not coincidental that most Western militaries continue to rely on linear problem solving methodologies that have

evolved from Newtonian mechanistic physics.[73] For years, these approaches met the aim of translating strategic political intent into conventional military campaign plans. Deliberate linear planning processes "...designed to optimize logical, analytical steps of decision-making in conditions of uncertainty and ambiguity," served the needs of militaries and continue to meet many of today's military requirements.[74] For example, the operational planning process (OPP) is a linear process that serves as the shared backbone of military planning within the CF.

CANSOF, in its traditional role as a necessary adjunct to conventional forces, has an obligation to demonstrate a high proficiency in CF OPP in order to fully integrate SOTFs into wider CF commitments. In various theatres over the past 10 years, both domestically and abroad, CANSOF has demonstrated an excellent ability to seamlessly integrate its elements into CF operations through a strong application of CF OPP. However, in non-traditional environments, CANSOF is often the only CF entity present, increasingly facing complex problems that are not conducive to linear problem solving techniques. Further, CF OPP is not a process that is shared by WoG partners, making its application in the non-traditional environment challenging. For these reasons, CANSOF has a requirement to explore alternative models that might enhance its ability to understand complexity and uncertainty when facing emerging national security problems. Once again science may prove to hold the answer.

A Non-linear Approach to Understanding Complexity

As the post-Cold War world continues to become increasingly complex, humans will seek appropriate methods to find order and improve their understanding of the contemporary security environment. As physics have proven less able to explain complex phenomena as both linear and mechanistic, there has been a return to the hard sciences to find a solution.

Biology and its notion of systems (derived primarily from the studies of ecosystems) have presented an effective alternative to understanding complexity and its associated uncertainty and disorder. In recent years, "...systems have been analyzed by almost every academic discipline because they appear equally throughout the physical, biological, and social world."[75] The Newtonian metaphor of the clock, which was historically used as a means of explaining the world and its parts, has given way to new metaphors of networks and systems that have their origins in the natural world and provide explanations of complex interactions applicable to all disciplines.[76]

Perhaps not surprisingly, military progress regarding systems thinking has been slower than that of other disciplines. Since the end of the Cold War, militaries across the world have focused almost exclusively on the revolution in military affairs associated with rapid increases in technology, specifically those concerning military information. At the same time, the "hard sciences", namely physics and biology, as well as other disciplines such as economics, have been focused on making sense of the increased global complexity, suggesting that neither technology nor the Newtonian principles of linearity are sufficient to deal with emerging global challenges.[77] Stated simply, although technology has increased complexity, understanding it will remain a human endeavour requiring an alternative cognitive model in which to view the world.

Complexity theory first emerged in the 1960s where attempts to modify weather indicated the severe limitations of predicting non-linear environments. By 1992, complexity theory was introduced in the popular press and the concepts surrounding non-linearity were made accessible within the public domain.[78] The formal acceptance of complexity theory within the military began in 1994 when the U.S. Marine Corps adopted non-linear concepts and incorporated complexity theory into Marine doctrine as codified in the capstone manual *Warfighting*.[79] Today, military scientists

33

across the world are increasingly exploring complexity science, specifically systems thinking, as a means to better understand the COE.

The foundation of complexity theory is rooted in a systems approach to the analysis of complex phenomena. A systems approach attempts to make sense of complexity by viewing systems as a whole, while acknowledging that they are composed of a number of isolated, independent and often unpredictable factors and their interactions.[80] A systems approach treats complexity as non-linear, where inputs and outputs are non-proportional, events are not replicable, and the whole is not recognizable from its parts.[81] It contends that there are underlying simplicities, or patterns, that are identifiable if specifically looked for. These patterns can provide insight, if not predictions and solutions.[82] Nonetheless, the challenge of systems thinking lies in the ability to identify these patterns by analyzing the system as a whole instead of focusing on the isolated events or factors within.[83]

Complexity theory contends that within a complex environment small decisions can have surprisingly large effects, and non-linear relationships occurring within a system can often result in unintended consequences.[84] These unintended consequences are likely to occur as a result of equally unintended informal interactions that take place. Unintended consequences generally occur as an aggregate of individual separate events, not simply as a result of a single occurrence, making them extremely hard to predict.[85]

However, identifying and understanding the patterns of "isolated events" can assist in the prediction of unintended consequences. Columbia University professor Robert Jervis writes:

> Although we all know that social life and politics constitute systems and that many outcomes are the unintended consequences of complex interactions, the basic ideas of

systems do not come readily to mind and so often are ignored. ... The fact that congruent patterns can be found across such different domains testifies to the prevalence and power of the dynamics that systems display.[86]

While linear models continue to provide a valid means of coping with both simple and complicated problems, confusing complicated problems with complex ones can lead to serious misjudgements in decision-making. In analyzing non-traditional military problems, SOF decision-makers must make a clear distinction between what is "complicated" and what is "complex". "Simple" systems can defined as having few interactions and few moving parts, whereas "complicated" systems can be described as having many interactions and many moving parts, although notably they also operate in predictable ways. In contrast, however, "complex" systems can be defined as having many interactions and many moving parts that operate in unpredictable ways.[87]

Confusing complicated problems with complex ones can result in the development of invalid courses of action and increase the likelihood of unintended consequences. Although people may have the best of intentions, unintended consequences can have catastrophic results for decision-makers.[88] This potential problem highlights the requirement for an alternative means of understanding the nature of complex problems, a solution that applies complexity theory and a systems thinking approach.

Although the utility of complexity theory is widely accepted, many scientists today are offering a word of caution regarding the rate at which systems approaches are being accepted. American political scientist James N. Rosenau notes that earlier ideas, defined by central tendencies and orderly patterns, are being overtaken by a new means of thinking about order which rests on "contradictions, ambiguities, and uncertainties derived from contrary trends and episodic patterns." Movement now seems non-linear,

erratic and interspersed with rapid accelerations or directional shifts.[89] However, Rosenau cautions that there are limitations to the extent that systems theories, such as complexity theory, can result in concrete policies that actually lessen the uncertainties of the modern world. Complexity theory should be a tool in which complex situations are clarified while also serving as a means of alerting observers to unrecognizable problems that need to be further explored. It can also serve as a litmus test to curb undue enthusiasm for a particular course of action.[90]

Importantly, to understand complexity theory one does not need to rely on mathematical explanations or computer simulations. Rather, an understanding of complexity theory requires one to explore complex adaptive systems.[91]

SOF as a Complex Adaptive Organization

Complexity in the military context is not new. What is new is the way in which complex situations have merged as a result of the evolution of information technology. Systems that used to be autonomous are now interconnected across various levels, making predictions much more difficult for decision-makers.[92] Ultimately, the result is the involvement of significantly more actors with increased influence, generating greater overall intended and unintended consequences. The actions and reactions of both independent and collective actors across multiple systems introduces unprecedented levels of complexity.

For SOF operating in non-traditional military environments the challenge becomes one of existing within multiple CASs simultaneously. For instance, SOF exist within the military hierarchy where they must meet the expectations of the chain of command, who are concerned with strategic risk and accountability. At the same time, SOF must integrate into a WoG framework where they are expected to make timely decisions in a potentially hyper-turbulent

environment. The solution to thriving within multiple CASs, is for SOF to become a complex adaptive organization.

CASs refer to social systems of unlimited agents who interact with each other and with the environment in a non-linear manner over time, while adapting their behaviour to meet a constantly changing situation.[93] The rich continuous interactions within CASs produce multiple feedback loops connecting current events to interactions that took place in the past. Individual agents are not knowledgeable of the system as a whole, as no one person has the ability to understand everything that is occurring within the system.[94] "[T]he concept of the CAS shows that surprising and innovative behaviours can emerge from the interaction of groups of agents, seemingly without the necessity of centralized control."[95] This self-synchronization at the "cold face" highlights the changing dynamic for complex adaptive organizations.

Importantly, studying CAS can provide insight for SOF. If it is accepted that SOF in the non-traditional environment should be considered a complex adaptive organization with unique missions and tasks, then to be more effective and efficient CF C2 is worth revisiting. Indeed, adhering to standard administrative rules and blanket policies without consideration of the unique nature of SOF operations runs the risk of constraining operational effectiveness and efficiency. Notably, bureaucracies have a tendency to maintain policies and procedures long after the reason for their creation has become obsolete, adding to the likelihood of unintended consequences.[96] This line of argument is not to suggest that SOF must be any less accountable or responsible than other Canadian military organizations. It simply implies that deliberate thought must go into ensuring that the appropriate decision-makers are strategically placed and hold the appropriate authority, responsibility and accountability to make rapid decisions within complex environments, particularly in novel situations.

37

One way of enabling such distributed decision-making is the employment of loosely coupled systems which "are characterized by decentralized operations, mission orders, ambiguous performance standards, and flexible control mechanisms." Importantly, "change has little effect upon loose organizations." These types of systems are optimized to allow rapid correction through field expedient solutions without constraints.[97] In complex and ambiguous environments, where problems will likely be poorly defined, loose coupling can enhance adaptability, enabling professionals to exercise their expertise in solving complex problems.[98]

Notably, CASs are defined by the connections within the system and the patterns of interactions that occur. For example, interactions between military members and interactions between military and civilian members will be different and will result in tensions and conflict within the system. In order to understand the system, the entire network must be examined instead of only attempting to understand the individual relationships that exist within it.[99]

A CAS is composed of heterogeneous decision-making agents whose decisions evolve over time.[100] However, this cognitive diversity can be interpreted as strength for a WoG team within a CAS, as it can significantly improve a team's ability to cope with complex challenges. If all members of a team face a complex situation the same way, knowing the same things, then they will be less effective overall. Arguably, the traditional military practice of socializing members to think similarly can actually have an adverse impact on dealing with complex situations in uncertain environments.[101]

To maximize effectiveness in these environments, SOF should focus on developing effective relationships instead of attempting to define their specific role within a unique WoG team.[102] Key to achieving effective relationships is the ability of CANSOF to maintain critical ties to other government agencies in order to foster

38

strong relationships. Within the CF, this is a unique requirement for specific organizations and must remain unconstrained by the CF chain of command. The result of allowing this direct liaison will be an improved ability to quickly integrate SOF elements into WoG teams when a national security crisis occurs.
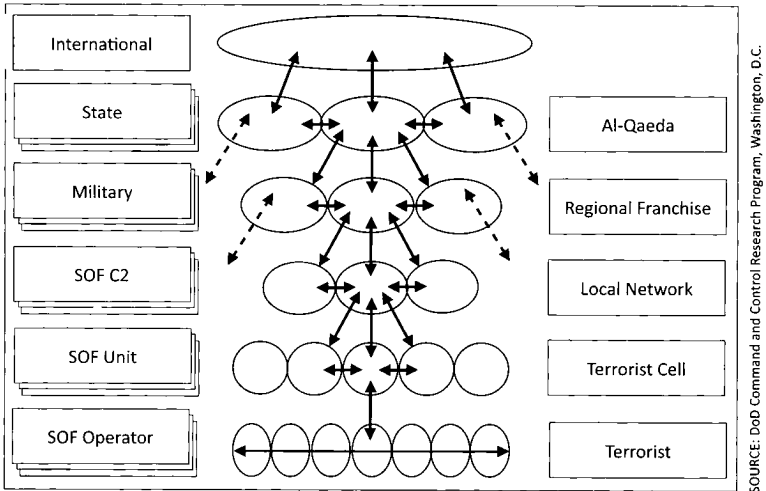
From a military perspective, the greatest gap between linear and non-linear thinking involves the concept of emergence. Emergence contends that new properties emerge as a result of a network of relationships and, therefore, activities are unpredictable from analyzing the parts of a system.[103] The interaction between agents within a CAS leads to emergence, where the "whole is greater than the sum of its parts."[104] John F. Schmitt writes:

> One of the defining features of complex systems is a property known as emergence in which the global behavior of the system is qualitatively different from the behavior of the parts. No amount of knowledge of the behavior of the parts would allow one to predict the behavior of the whole. Emergence can be thought of as a form of control: it allows distributed agents to group together into a meaningful higher-order system. In complex systems, structure and control thus "grow" up from the bottom; they are not imposed from the top. Reductionism simply will not work with complex systems: the very act of decomposing the system—of isolating even one component—changes the dynamics of the system. It is no longer the same system.[105]

The Living Systems Model

In *Complexity, Networking, and Effects-Based Approaches to Operations*, executive strategist Dr. Edward A. Smith adapts the biological living systems model created by systems science pioneer

James Grier Miller to demonstrate the sociological application of complex adaptive systems in a complex human cognitive and social environment involving military forces and an adversary.[106] This author has adapted Smith's model by incorporating SOF in order to highlight the continuous interaction between actors within a multilevel, interconnecting CAS. Figure 3 demonstrates how each sub-level might create additional complexity for higher levels within the system. Although depicted graphically as a hierarchy, this complex system is not a hierarchy. Each level is made up of the sum of all of the levels below it creating additional complexity for higher levels.[107] Adding to the complexity of a situation is the fact that this is one system that exists within a number of other systems, a system of systems. In a WoG framework, other departments form their own systems (which would likely resemble the system depicted in Figure 3), increasing the overall complexity of the situation.

International
State
Military
SOF C2
SOF Unit
SOF Operator

Al-Qaeda
Regional Franchise
Local Network
Terrorist Cell
Terrorist

SOURCE: DoD Command and Control Research Program, Washington, D.C.

FIGURE 3. Living Systems Model and Multilevel Interaction[108]

Key to understanding the nature of the living systems model is recognizing that all of these complex relationships are based on

human interactions. Although attempting to understand multiple systems can be extremely complicated, the key is establishing relationships with a variety of individuals, groups and organizations at various levels and applying intuition and learned behaviours to assess their impact on the system. The living systems model reinforces the idea that to operate effectively within complex adaptive systems there must be an ongoing interaction and integration between varying groups of people and organizations.[109]

Summary

To remain effective in the contemporary global security environment, CANSOF must adopt a systems approach. This approach will improve its ability to understand the increased complexity and uncertainty it will face when employed in non-traditional military environments. A systems approach will enable CANSOF to make greater sense of complexity, allow for greater insight and improve its ability to predict events. This growth will help in the development of pragmatic solutions to national security problems. Such a cognitive shift will enable CANSOF to effectively enhance its decision-making ability through improved interoperability with its WoG partners.

In addition, CANSOF must become (and be seen to be) a complex adaptive organization to effectively exist within multiple complex systems. Its focus must shift from attempting to define its role in each unique situation to understanding the problems it will face in a more holistic way. To achieve this cognitive shift, CANSOF must focus on developing strong relationships with its government partners unconstrained by the CF hierarchy. The establishment of strong relationships will lead to increased diversity and a greater ability to integrate members as part of WoG teams. Although CANSOF must remain competent and well-versed in CF OPP in order to synchronize its activities while employed on traditional

military missions, CF leadership must acknowledge that the employment of SOF in non-traditional environments is unique and requires concessions that may deviate from the standards of more typical military deployments.

CHAPTER 3
A COMPREHENSIVE APPROACH TO SPECIAL OPERATIONS IN THE NON-TRADITIONAL MILITARY ENVIRONMENT

Today's missions differ from traditional military missions, not just at the margins, but qualitatively. Today's missions are simultaneously more complex and more dynamic, requiring the collective capabilities and efforts of many organizations in order to succeed. This requirement for assembling a diverse set of capabilities and organizations into an effective coalition is accompanied by shrinking windows of response opportunity.[110]

The ambiguity and uncertainty surrounding complex national security issues often requires a politically sensitive, multi-faceted, rapid response by government. In the Canadian context, it is likely that foreign national security issues will occur in failing states where host nation governments may not have the ability to interdict or solve these complex problems. Therefore, Canada must look to its federal departments to provide it with options for resolution. For the CF, any overt military action could quickly produce adverse strategic consequences which might involve foreign governments, other significant actors, such as international organizations and aid agencies, and domestic populations. SOF mitigates these challenges and offers the CF and the Government of Canada a covert option to initiate rapid response military planning and/or assist other departments as part of a WoG team.[111]

Understanding the ambiguous nature of the COE and the complexity surrounding SOF's existence within multiple CASs it is clear to see some of the challenges faced in integrating SOF into an unfamiliar WoG environment. For example, western democratic governments can be slow to respond, eventually leading to time constraints on SOF decision-making. Additionally, although modern intelligence can provide endless amounts of data to enable rapid awareness, it is often not shared amongst WoG partners thus challenging rapid decision-making. As such, a challenge for SOF decision-makers in this environment is accessing and rapidly processing "all-source" intelligence to inform decision-making while working under significant time constraints. If this cognitive process is not fully enabled, SOF will be of limited value. To enable the decision-making process it is important that SOF adopt a holistic approach to national security problems, which means fully understanding, integrating and collaborating with WoG partners in order to build a full appreciation of the environment in which it must operate. To enhance its ability to operate effectively, SOF must focus on the social domain, the domain where humans interact within social groupings.[112]

This chapter proposes that an effects-based approach to special operations decision-making can enhance the ability of SOF to develop effective solutions to national security problems. By understanding the link between the social and cognitive domains, SOF decision-makers will be in a better position to make informed decisions in complex and challenging environments.

As such, this chapter begins with an overview of effects-based approaches. Then Edward A. Smith's action/reaction cycle is introduced as a comprehensive model to enhance decision-making. Finally, a scenario to demonstrate the utility of Smith's effects-based approach will be presented and it will be concluded that this model is a viable alternative to facilitate rapid response SOF

planning and decision-making within a collaborative WoG team environment.

Effects-Based Approaches to Operations

Effects-Based Operations have been at the forefront of debate regarding military strategy over the past two decades. With multiple versions of EBO in existence, many have argued that the notion is poorly understood and regularly misinterpreted. Further, critics argue that the inability to accurately predict second and third order effects during the chaotic nature of warfare, where an adversary can exercise free will, make EBO ineffective.[113] As such, critics conclude that EBO has not lived up to its promises and should be discounted as a means of approaching the fundamental nature of war.[114] Although there may be some justification for these arguments in the traditional military sense, the environment as described in this monograph is not necessarily one of "war"; it is often a peace time environment in which SOF is a supporting entity to other governmental departments during crisis situations. While the CF may employ what it considers time-tested and proven processes for deliberate operational planning, in the majority of its military activities these processes do not translate well within a time-constrained WoG environment where partners are unfamiliar with CF processes. For this reason, an alternative means of approaching such problems is worth exploring.

In Canada, non-traditional SOF missions are generally executed as rapid response operations.[115] For SOF, such operations may follow a unique chain of command outside of the traditional hierarchy that exists within the greater CF. For example, to provide the Government of Canada with high readiness SOF prepared to conduct counter-terrorism operations and other high value tasks, Commander CANSOFCOM is accountable to the CDS for the employment of SOF and, in certain circumstances, may report

directly to him.[116] For this streamlined chain of command to be both responsive and effective, it requires limited layers of staff and commanders. As such, this situation is conducive to an alternative approach, such as an effects-based approach, that can focus on human relationships within complex organizations, while not having an adverse effect on the greater CF.[117]

Nonetheless, an effect-based approach to operations is not without its issues. One of the challenges of defining an effects-based approach is arriving at a suitable definition. In 2004 the U.S. Joint Forces Command (USJFCOM) proposed a definition for EBO which incorporates all of the key tenets. USJFCOM defined EBO as:

> Operations that are planned, executed, assessed, and adapted based on a holistic understanding of the operational environment in order to influence or change system behavior or capabilities using the integrated application of selected instruments of [national] power to achieve directed policy aims.[118]

This definition is important for three reasons. First, it acknowledges and incorporates the behaviour of systems. Second, it does not focus solely on influencing the behaviour of an "enemy", but instead centres on influencing (or affecting) all actors within a security scenario. Third, this definition accounts for the scalability of EBO to include only the necessary instruments of national power that are required to deal with a specific situation.[119]

While effects-based approaches to military operations have generated significant debate in their relatively short existence, they are the CF's method of choice for WoG initiatives. Canadian Forces Joint Publication 01, *Canadian Military Doctrine*, explicitly states that the CF will adopt an effects-based approach to the coordination of government activities involving multiple participants from different departments in complex crises situations. The aim of this

46

approach is to facilitate a culture of cooperation and collaboration with WoG partners working proactively and sharing their understanding of a situation. The WoG approach is intended to strengthen existing processes and foster relationships at personal, interdepartmental and organizational levels. To maximize the effectiveness of a WoG approach, "...processes and structures may need to be adapted to reflect individual circumstance and situations."[120] Notably, although CF doctrine explicitly proposes an effects-based approach to WoG activities, it does not clearly state how this approach is to be applied.[121]

Central to an understanding of an effects-based philosophy, and likely the reason for its adoption by the CF, is accepting the need for a holistic approach to complex national security issues. This approach highlights the requirement to deal with such matters comprehensively, not simply by military means alone. To highlight the utility of a holistic approach, U.S. military strategist John A. Warden III published an article in the *Airpower Journal* entitled "The Enemy as a System."[122] In this article Warden attempts to, "...make the concept of an enemy useful and understandable," through the development of a simple model.[123] He proposes that an adversary may be viewed as a "system of systems", where each system as a whole could consistently be broken down into five concentric rings. Warden argues that this concept could be applied to any system (including systems within other systems) as a simple "roadmap" for understanding complex processes.[124]

Warden posits that traditionally military forces were focused on the outer ring that represent the adversary's military forces.[125] To Warden, this ring is the least important and most easily reconstituted by the enemy.[126] To help explain his reasoning, Warden applies a human body metaphor to represent the system and suggests that as one works down through the five rings, the elements become more important, with the centre ring equating to the

brain, the "organ" vital to the functioning of the body as a whole. Yet, if any part of the system becomes incapable of functioning, then it would adversely affect the rest of the system in one way or another.[127]

Applying this metaphor to a terrorist adversary that SOF may face as part of WoG security problem, and contrasting it to the human body metaphor, Warden's five ring theory may be demonstrated as shown in Figure 4.

	Body	Terrorist Adversary
Leadership	Brain • Eyes • Nerves	Leader • Communications • Inner Circle • Security
Organic Essentials	Food and Oxygen	Weapons, Money, Ammunition, Explosives
Infrastructure	Vessels and Muscles	Roads, Camps, Cave Complexes
Population	Cells	Population • Facilitators • Financiers • Religious Leaders in Support
Fighting Mechanism	White Blood Cells	Insurgents, Low-level Terrorists

Courtesy of the Air and Space Power Journal

FIGURE 4. Applying Warden's Five Ring Theory[128]

In Figure 4, terrorist leadership represents the organizational centre of the system, that which is required for the system to function. Further, it includes communications (the ability of the leadership to pass direction to subordinates or "sub-systems"), the leader's closest associates and elements that provide for their security. The next layer includes the essential elements that allow the leadership to function as a terrorist entity. The third layer represents the terrorist infrastructure, which is important yet, because it may be extensive, the terrorist organization may be able to work around its loss. The fourth and fifth layers in this example

are the population that supports the terrorist organization and the organization's fighting mechanisms. Again, they are important considerations but are not vital to the organization's survival. As such, the organization can lose a number of supporters and/or fighters and still function effectively.

Another important aspect of effects-based approaches is their reliance on a variety of instruments of national power. United States Air Force (USAF) Lieutenant-General (Retired) David Deptula explains that EBO is, "...not a framework, a system, or an organization... it is a methodology or a way of thinking." EBO encourages the merging of national security tools to control an adversary by creating the necessary effects so the adversary must operate according to one's national security objectives.[129] He argues that "the object of war (or conflict) is to achieve a positive political outcome," that may not include the destruction of the enemy. The ability to identify and affect essential systems on which an adversary relies is critical. In turn, using force, as one option to achieve specific effects against portions of a system, can render the entire system ineffective.[130]

Former USAF officer turned academic Maris "Buster" McCrabb argues that to understand EBO one must understand objectives-based and target-based approaches for planning, assessing and executing military operations. He argues that EBO is not a replacement but an overarching concept that encompasses these approaches.[131]

McCrabb's comparison is an important concept which highlights the need for SOF to think about national security problems in a more holistic manner. Like most military forces, SOF is likely to concentrate its efforts on target-based operations where the focus is on the tactical resolution of a specific problem. Truly adopting an effects-based approach would suggest that SOF decision-makers must raise their situational awareness to a strategic level with a view to understanding the bigger picture. This picture

includes considering options that support alternative WoG solutions for resolution. To enable this cognitive shift, SOF decision-makers must focus on the social domain, specifically the establishment of relationships with key security partners.

A Comprehensive Model for SOF Decision-Making

In a complex and ambiguous WoG environment that lacks a formalized and comprehensive framework for coordinating the efforts of various agencies, the social interactions that are established, and the resulting collaboration that occurs, become critical to the effective application of national power. This environment requires a degree of group autonomy to react and adjust to unpredictable changes. Psychology Professor Sandra Marshall notes that "[in] real world situations, the organisational [sic] structure of a decision-making team may be misaligned with the operational setting in which it is forced to work. In such cases, the team needs to consider whether to modify its organisation [sic] or formulate alternative plans for completing the task."[132] The informal social interactions that occur within a WoG environment are key to maintaing the ability to make rapid modifications within the *ad hoc* organization. For SOF, this capability is only achievable by integrating closely with WoG partners. Any SOF decision-making framework must account for the significance of social interactions, enabling SOF to shape the behaviours of the various actors with whom they must work. To achieve this effect requires a decision-making framework that will allow for a coordinated set of interdependent actions to shape a desired endstate.[133]

To address the needs of CASs, executive strategist Edward A. Smith proposes an effects-based model called the action/reaction cycle. This model aims to integrate partnered organizations into an overall approach to operations. Smith defines EBO as, "...coordinated sets of actions directed at shaping the behaviour of friends, foes, and neutrals in peace, crisis, and war."[134] The focus of Smith's

model is on, "objectives, defined in terms of human behavior across multiple dimensions and on multiple levels." "Actions" result from the ability of all elements of national power to influence the decisions of actors, "friends, foes, and neutrals". Success is defined through measuring resultant behaviours.[135] The model focuses on a scaleable behavioural endstate applicable to military, diplomatic, political and economic efforts where the behaviour to be considered results from the reaction of friends and neutrals as well as foes.[136]

The Action/Reaction Cycle

The action/reaction cycle is built upon four domains: the physical domain, the informational domain, the cognitive domain and the social domain. (See Figure 5.)[137] Unique to this effects-based model is its focus on behaviour, and as a result the significance the model places on the social domain. In order to address CASs, the action/reaction cycle focuses on the six human dimensions of the living systems model (as presented in chapter two): "human beings, groups, organizations, communities, societies, and an international system," in which humans play the central role.[138]

Physical Domain
Where strike, protect and manoeuvre take place across different environments.

Information Domain
Where information is created, manipulated, and shared.

Cognitive Domain
Where perceptions, awareness, beliefs and values reside and where, as a result of sensemaking, decisions are made.

Social Domain
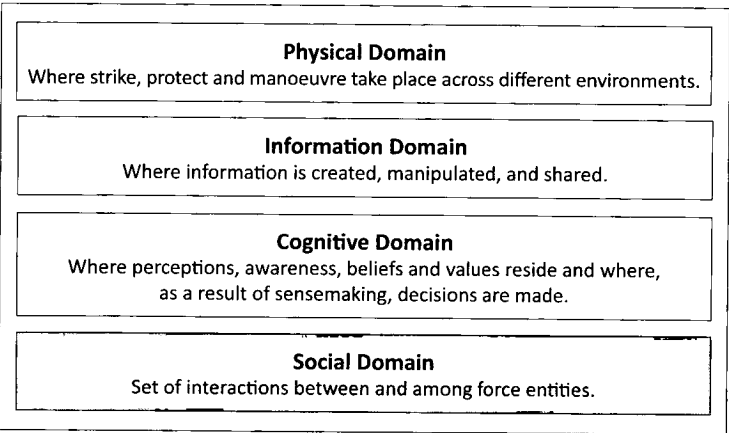Set of interactions between and among force entities.

FIGURE 5. The Domains of Warfare[139]

51

The action/reaction cycle is a "how to" for effects-based approaches based on three key tenets: first, actions, effects, and endstates are all products of human cognitive processes; second, these processes are natural products of social evolution and human interaction; and third, social institutions will only reflect a limited (still evolving) set of systems and processes that have worked in the past and can be tried again.[140] (See Figure 6.)

In the action/reaction model, a stimulus arises in the physical domain as an action. The stimulus moves through the information domain[141] to create shared awareness, however, a response is not induced until the stimulus enters the cognitive domain.[142]
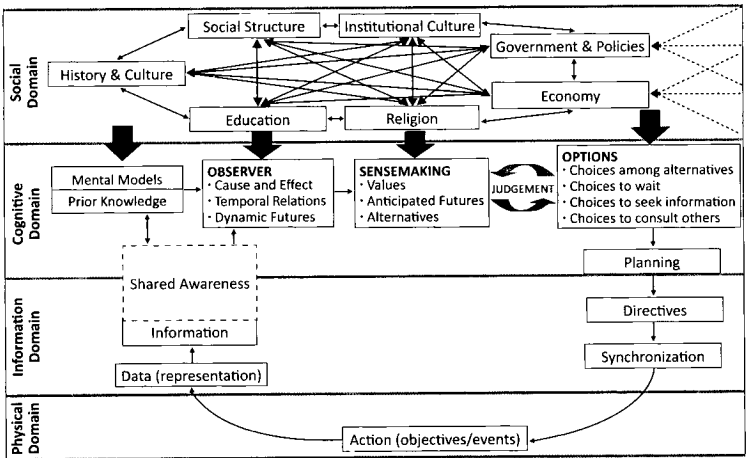
FIGURE 6. The Action/Reaction Cycle and the Influence of the Social Domain[143]

The Cognitive Domain

Human decisions are made in the cognitive domain, which exists in the minds of decision-makers. The cognitive domain is where "...perceptions, awareness, understanding, beliefs, and values reside."[144] Once a stimulus enters the cognitive domain, the decision-maker will attempt to contextualize the stimulus based on similar past

experiences and his/her own unique mental model in an attempt to make sense of it. The decision-maker will then apply this understanding to evaluate his/her available response options. The selected course of action (COA) is the cognitive endstate of the cycle. The decision is then operationalized back into the physical domain, through the information domain, where the cycle may commence once again.[145] Smith argues that this cycle is universal and is applicable from the tactical level to the strategic, and across all forms of conflict. All actions are ultimately directed at the cognitive domain, as this is where perceptions are formed, understanding occurs, and sense is made with the eventual outcome of the cognitive process being the selection of a course of action. Notably, Smith explicitly states that the focal point to the cognitive process is the "observer".[146]

The Social Domain

The social domain was originally introduced by David S. Alberts and Richard E. Hayes in their 2003 book *Power to the Edge*. The significance afforded the social domain is the strength of Smith's model.[147] The top row of Figure 6 identifies the key interdependent variables that form the social domain and shows where these variables influence the cognitive domain. These variables can form an increased understanding of the characteristics of a specific adversary, friend or neutral party. Smith argues that the decision methods utilized by humans and human organizations are "rational actor," generalizations that can become problematic when a decision-maker does not fully understand a situation or when dealing with asymmetric, non-western adversaries, which is often the case for SOF. Notably, attempting to understand an adversary from his/her point of view gives a better appreciation of the behaviour, or "effect" that an action may elicit.[148] The reactions of individuals and groups are not necessarily constant across cultures and require a level of comprehension that must

be developed through a greater social understanding. Smith explains that: "As in any CAS, the relationships among these sets of variables will continually change as the groups and the elements within them adapt and react to their environment."[149]

Within the social domain, Smith also emphasizes the significance of understanding allies or, in this case, WoG partners. The social context that an observer or group of observers find themselves working within will heavily influence how they understand and perceive actions in the physical domain and how they develop possible responses to those actions.[150] It is important to emphasize that these relationships will "adapt", improving and/or deteriorating, as new people are introduced and incorporated into the system.

The social variables identified in the action/reaction model add significant complexity to all aspects of the cognitive domain. The mental models of the observer (which Smith equates to a cognitive "analogy library" or the observer's "logic framework") must be consistent with the social context of a specific problem and be able to offer explanations sufficient to enable sensemaking. The observer will develop his/her own perceptions and understanding of an emerging situation that will ultimately influence his/her decisions. This connection is important in that it drives how the decision-maker will perceive and think based on education, training, experience and socialization. Further, it emphasizes the importance of selecting the appropriate decision-maker with the appropriate authorities and background. Social factors also influence how observations are placed into context within an intellectual framework incorporating a host of interdependent variables. Sensemaking will not be limited only to the variables surrounding the mental model established by the observer, but may also be based on metaphors used to make sense of the situation, historical precedents and inputs from other actors. Finally, in

evaluating options, or potential COAs for responding to a situation, the decision-maker will rely heavily on his/her judgement to the applicability and viability of the options. This process will depend on the capabilities available and the organizations concurrence with what is acceptable and what will work, values that Smith considers social domain-derived perceptions.

Boyd's OODA Loop

It is not coincidental that the action/reaction cycle clearly resembles John Boyd's OODA Loop.[151] In his first book, *Effects-Based Operations: Applying Network Centric Warfare in Peace, Crisis and War*, Smith relied heavily on Boyd's theory to explain his notion of EBO. However, Smith believes that Boyd's theory is a "tactical level" application of the cognitive process of decision-making. He states:

John Boyd's OODA loop reduces the cognitive process to a tactical short hand of Observe, Orient, Decide, and Act. In this OODA loop context, we can intuitively understand, for example, that operating faster than our opponent confers an advantage. The general concept of an OODA loop or decision-making cycle certainly has value when applied to operational level interactions and higher... [but] these operational level interactions are vastly more complex...and that the complexity increases still more at higher levels. The military-strategic and geo-strategic dimensions ... point to the need to consider actions in terms of a multi-level, multi-arena impact that spans friends and neutrals as well as enemies. ... Not only do these different dimensions of upper level interaction operate on an entirely different timeline from that of tactical OODA loop engagements, but they force us to consider that the nature and timing of actions and reactions are at least as important as their speed. They also force us to think ... in terms of institutional or organizational behavior

of increasing complexity. In fact, the farther we move away from the tactical level OODA loop, the more we are obliged to look to what might be termed "operations" in the cognitive domain.[152]

In his most recent book, *Complexity, Networking, and Effects-Based Approaches to Operations*, Smith defined both the OODA Loop and the action/reaction cycle as continuous cyclical approaches to problem solving, where the OODA Loop is a real-time decision-making process, while the action/reaction cycle is an "elaborate OODA Loop" which characterizes the complex interactions occuring within· the system of systems throughout the various domains.[153]

Putting the Effects-Based Approach into Context

Although natural, there is some danger inherent in attempting to standardize a cognitive model in a linear-type fashion. In order to make the action/reaction model both understandable and practical, Smith argues that there are five essential processes contained within the model: "Awareness creation, sensemaking, decision-making, execution and social influences."[154] These five processes can translate into a traditional military cycle of assessment, planning, and execution. (See Figure 7.) Smith believes that because EBO is about shaping interactions within CASs, any process must account for interactions with actors at the same level, similar actors outside of the system and actors at other levels (i.e. senior military personnel within the chain of command). In assessing these interactions, it must be understood that all actions can create unintended consequences or a disproportionate reaction anywhere within the system. Smith adds that as the number of actors increases, so does the complexity of the system thereby increasing the number of potential outcomes.[155]
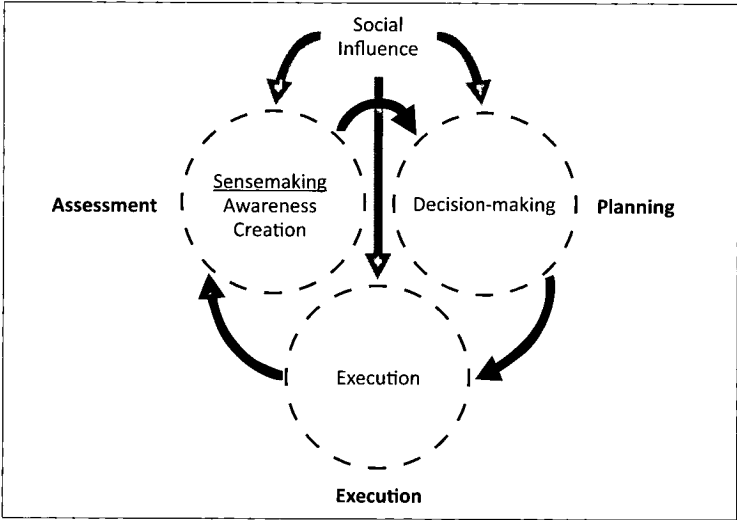
FIGURE 7. The Impact of the Social Domain on Assessment and Planning[156]

A SOF Scenario[157]

In order to demonstrate the practical application of Smith's effects-based action/reaction cycle, a hypothetical scenario will be introduced. In this scenario, a Canadian Ambassador to a central African country has disappeared and it is believed that a regional terrorist organization is responsible. A WoG team has been assembled from various departments and has arrived at the Canadian Embassy. The CF has deployed a SOF planning element to participate as part of the WoG team. Upon arrival, the WoG team has established an operations centre within the embassy and begun its integration.

Assessment (Awareness Creation and Sensemaking)

In order to commence options analysis, the SOF planner must first establish an understanding of the situation. This understanding is dependent on access to all sources of intelligence, not only on

57

the suspected terrorist organization, but on a variety of regional factors. The SOF planner must understand the region's history, culture, social structure, religion, political structure, tribal affiliations, economy and languages. Any option must be developed with this understanding in mind, as the greater effects of any SOF actions must be assessed against the long-term effects across all factors (i.e. risks). Much of this information will be generated from a variety of sources, therefore full integration and collaboration with WoG partners is a requirement for developing viable options.[158]

It is important to note that although a significant portion of collaboration occurs in the physical domain, and the information and intelligence collected pass through the information domain, collaboration primarily occurs in the cognitive domain where the interactions between WoG partners leads to an increase in their awareness, knowledge and understanding of a situation. Collaboration can lead to a common understanding of a problem and can improve planning by involving both the agency representatives responsible to conduct an operation and those supporting it.[159]

The problem that often occurs in the Canadian WoG context is the "stove-piping" of information between government departments. The solution to enable successful collaboration results from the interactions that occur within the social domain. Within this scenario, these social relationships necessitate an early demonstration of trust between actors. Although this is developed formally as a result of the SOF planner's authority, responsibility and accountability, it also develops informally as a result of positive social interactions between the SOF planner and other WoG team members.

Collaboration ensures that the SOF planner maintains a complete awareness of all of the other efforts that may be taking place simultaneously across the diplomatic, economic, legal and informational domains, in order to assess the potential impact of SOF's

actions to other efforts. The situation will likely remain fluid, so the SOF planner must gain full and timely access to intelligence and information in order to constantly reassess and re-evaluate SOF options.

To make sense of the situation, the SOF planner will rely on his/her education, training, experience and intuition. The SOF planner must assess where the best opportunities for a military option may exist while always assessing the political risk, specifically the risk to other developing WoG options. Finally, the knowledge to support the SOF planner's own sensemaking may be his/hers alone, or more likely will include inputs from other SOF team members who have varying experiences. Inputs may also come from other WoG team members, representing other perspectives outside of the military.

Planning (Decision-Making)

The SOF planner must use his/her sense of the situation to begin evaluating possible military options. This process cannot be conducted in isolation. It must be done in collaboration with other instruments of national power where the predicted effects of SOF's actions must be evaluated against those of the other departments and agencies. This calculation will allow the SOF planner to identify and determine when military options may prove advantageous over others or may enhance other options if conducted simultaneously. To effectively achieve this synchronization, the SOF planner must determine what the likely outcome is going to be, what assets are available to achieve that outcome and what risk is associated with the various options in comparison to other WoG capabilities that may be better suited to meet the same outcome. The result will be the selection of an option which could be kinetic, non-kinetic, supporting other efforts, or it may even be a decision to take no military action at all. However, in a complex and

fluid environment it is likely that the selected COA will continually change and require a reassessment as new actions initiate further action/reaction cycles and direction is imposed and amended by higher authorities.

Social Influences

The above scenario demonstrates that the social interactions between the SOF planner and other WoG actors are critical to both the assessment and planning phases of WoG efforts in national security operations. As demonstrated, the SOF planner has a requirement to fully integrate into a WoG team in order to access required intelligence and expertise that will enable situational awareness, and facilitate sensemaking. Further, the SOF planner must continually assess developing SOF options against the actions and intent of other WoG partners represented in the team.

This scenario has highlighted the necessity for collaboration in order to facilitate effective awareness, sensemaking, and enable decision-making. The management of large amounts of information must be a collaborative team effort, as the small SOF planning team may not be able to accomplish this alone. The social interactions must include regular coordination in order to exchange information and provide updates on each WoG partner's efforts. Finally, the expertise and diversity across government departments will enhance SOF's view of a national security situation, offering greater perspective in the development of potential options.

Summary

In the ambiguous and complex WoG environment in which CANSOF increasingly finds itself operating, an effects-based approach to decision-making can enhance rapid response planning. Regardless of the general debate surrounding EBO, this holistic

approach is ideal for SOF in non-traditional environments where it exists within multiple CASs. Further, an effects-based approach has been identified in CF doctrine as the preferred means for WoG activities involving multiple participants from a range of departments. The primary reason that the effects-based approach has been adopted by the CF is that it offers a holistic view of national security issues, in which the CF represents only one instrument of national power. Early proponents of effects-based approaches, such as John Warden, David Deptula and Maris McCrabb, have presented models that demonstrate the utility of a holistic approach to addressing strategic issues. SOF can only benefit from adopting such an approach to these highly complex strategic operations.

Edward A. Smith's action/reaction model represents an internalized process which can be mastered as a cognitive decision-making model within larger planning processes. Theoretically, the action/reaction model may not facilitate complex decisions as well as a more formal time-consuming processes, but in rapid response, comprehensive environments, it enables timely decision-making, which arguably results in as well-informed of a decision as time permits.[160] The strength of Smith's model is the significant link between the social domain and the cognitive domain. An understanding of the impacts of the social domain are central to enhancing SOF decision-making throughout the assessment and planning phases.

To accompish an enhanced level of decision-making utilizing an effects-based approach SOF must be proactive in its application. First, it is critical that the SOF chain of command deliberately selects the appropriate decision-maker for operations in a WoG environment. This individual must possess the appropriate authority, accountability and responsibility to earn the trust of other team members and the experience and decision-making abilities to operate effectively within this comprehensive environment. Next, the

61

SOF decision-maker requires a highly refined cultural intelligence, not only of the adversary and the operating environment but also of WoG partners. The SOF decision-maker must possess an understanding of the perspectives of WoG partners in order to shape the environment to SOF's benefit. Finally, the SOF decision-maker must have the social ability to establish key relationships that will foster the support for and employment of potential SOF options. This social ability includes previous exposure, and the respect and trust of WoG partners. Chapter four will address each of these issues independently and offer suggestions that will enhance SOF's ability to render rapid decisions in a WoG environment.

CHAPTER 4
THE SIGNIFICANCE OF THE SOCIAL DOMAIN TO SOF DECISION-MAKING

The social domain encompasses not only the primordial factors that govern how human beings relate to each other in social groupings but, most importantly, it also encompasses all of the idiosyncratic variables that might influence how particular observers or groups of observers will perceive, understand, and make sense of a situation, and view their options for response.[161]

An effects-based approach to special operations in non-traditional military environments has the potential to greatly enhance SOF decision-making. By developing options in collaboration with WoG partners, SOF can provide strategic decision-makers with viable solutions to national security problems. However, to successfully apply an effects-based approach, a comprehensive understanding of the social domain and its influence on the decision-making process is required. The effective integration of SOF into an unfamiliar WoG environment requires social acceptance by national security partners. The challenge in this environment, which is often time constrained with consistently changing actors, is for SOF decision-makers to rapidly establish the trust and confidence of WoG partners. A full appreciation of a national security situation requires access to necessary intelligence and information to support SOF planning, all of which is dependent on establishing critical personal relationships. If SOF decision-making is not fully enabled with the required intelligence, informational inputs and other agency support, SOF may be perceived as ineffective and its credibility may be questioned.

This chapter argues that CANSOF must develop an appreciation of the social domain and its impacts to effectively optimize an effects-based approach to SOF operations in a WoG framework. CANSOF must appreciate the significance of social interactions with WoG partners and the influence these relationships can have on the decision-making process. To accomplish this task, it is imperative that SOF operators develop a high level of cultural intelligence regarding WoG partners and comprehend the lens through which other actors view national security problems. CANSOF representatives must have the social ability to quickly establish key relationships in order to generate support for potential military solutions to national security problems. To fully appreciate other points of view, CANSOF must acknowledge the institutional biases that exist among WoG partners, resulting from a general societal misunderstanding about the organization, its roles and functions. Finally, CANSOF must remain an agile, adaptive organization that is able to function within multiple complex adaptive systems while meeting the expectations of WoG partners and the Government of Canada. The challenge for CANSOF is satisfying the requirements of the CF chain of command while simultaneously integrating into a WoG team where each crisis is unique and may require a different response.

Cultural Intelligence and Whole of Government Partners

Within complex human social systems, such as the living systems model described in chapter two, there will be a natural, ongoing process of competition and conflict taking place between human beings.[162] These social interactions between humans from different backgrounds have the ability to impact decision-making. The significance of this impact cannot be fully appreciated without forming a detailed understanding of the organizational culture that forms the perspective of the various actors within such an

environment. If an effects-based approach to operations concerns itself with the wider "effects" that result from the application of multiple national level capabilities towards a specific objective,[163] then a unity of effort is required for this approach to be successful.[164] Within an effects-based approach, the decision-maker must consider not only the behaviour of the adversary but also the behaviour of friends and neutrals. In other words, to effectively make decisions, the cognitive estimate must account for the complete web of social interactions that can have an effect on a national security event.[165]

Cultural intelligence is an analytical tool that offers a framework for understanding the social and cultural challenges that exist within the defence and security evironment. Leveraging cultural knowledge can increase operational effectiveness by understanding the lens through which other government agencies view national security problems, and possibly how these partners might view SOF.[166] Further, developing elaborate cultural intelligence can enable SOF to be more effective and interoperable with civilians, other government departments and international organizations.[167] As Canadian defence scientist Dr. Karen Davis states, "The effective development and execution of Canada's national security policy is dependent upon a thorough familiarity with Canadian national strategic culture."[168]

Director of Research and Education for the CANSOFCOM Professional Development Centre (PDC) Dr. Emily Spencer believes that carrying out non-traditional military activities collaboratively with diplomatic, defence, development and other agencies within a broader framework (such as an effects-based approach to national security problems) is necessary, as specific directives and mandates are usually insufficient to overcome the differences that exist across organizational cultures.[169] However, to be successful in the absence of directives and mandates, the application

65

of broader frameworks is dependent on the rapid establishment of social relationships among members once teams are formed. SOF representatives must realize that each national security situation will be different, resulting in variations in team composition and membership from crisis to crisis. It is therefore imperative (for unity of effort) that social relationships are established quickly to foster an effective team environment. In *Solving the People Puzzle: Cultural Intelligence and Special Operations Forces*, Spencer writes:

> ...understanding the people you work with – whether other Canadians, international alliance members, or host nation inhabitants – makes for smoother relationships, better communication and comprehensive, and therefore, more effective results. Grasping differences in how others think, behave, make decisions, view the world, and interpret actions assists in providing strategies and options for how best to engage them to achieve your own objectives.[170]

Dr. Spencer argues that establishing effective relationships based on high levels of cultural intelligence will assist in gaining support for operations through improved cooperation, information sharing and participation. Interpersonal skills, clear effective verbal communications and proper body language will ultimately result in less confusion due to misunderstanding.[171]

It is important to realize that the ability of SOF to develop cultural intelligence regarding other national security agencies will remain a challenge that must be deliberately addressed. Colonel Bernd Horn, Ph.D. believes that although challenging, it is imperative that military leaders learn to communicate, cooperate and work effectively with non-military partners. Horn explains that "...these agencies have different agendas, alien organizational cultures and differing philosophies. The greatest problem is one of ignorance.

66

None of the players fully understand who the other participants are; what they do; their mandates; or how they actually operate."[172] Dr. Bill Bentley of the Canadian Forces Leadership Institute contributes:

There has always been a certain tension in Canadian civil-military relations; indeed this is a characteristic of all western democracies. In Canada, these tensions have resulted in differing views on the utility of force in international politics and above all in the political desire to maintain a tight control over military policy. ... If civilian policy-makers and officials seemed indifferent or unresponsive to perceived threats, military officers often appeared to civilians to be overly zealous in their demands for action. All would do well, however, to remember that in a liberal democracy, the military can propose the level of armaments necessary to have a certain probability of successful defence ... [and] the nature of the threat posed by a particular enemy, but only the civilian can decide whether to feel threatened and, if so, how, or even whether, to respond.[173]

To facilitate overall cooperation, effectiveness and a greater understanding of other agencies, SOF operators at all levels require an enhanced level of cultural intelligence.[174] CANSOF must proactively seek opportunities to interact with security partners from other government departments through such activities as joint training, information briefings and team building events. Developing social relationships to establish an increased cultural awareness will allow SOF to better understand the lens through which security partners view national security issues when a crisis does occur and, more importantly, allow for a smoother integration of SOF elements into WoG teams. Proactively developing this understanding will alleviate the desire to apply inaccurate institutional

67

biases and stereotypes against partnered agencies, resulting in decreased frustration with regard to their efforts. Additionally, increasing cultural awareness will also assist SOF in realizing that similar biases and stereotypes are also regularly applied to both the CF and SOF.

Combating Institutional Bias

One of the challenges of integrating SOF into a WoG framework is the lack of understanding with respect to the role of SOF, which results in an institutional bias. The veil of secrecy that has historically surrounded SOF has led to an overwhelmingly inaccurate appreciation of who SOF actually are. The increased volume of open source speculation, primarily on the internet, has added to this misinformation.[175] Hollywood has regularly portrayed SOF as "Rambo" type characters or "cowboys" who operate outside of the traditional military rules, regulations and laws that govern conventional military forces. In reality, this projection is hardly the case. In Canada, CANSOF are bound by the same military rules, regulation and laws as all members of the CF. Although many of the operations undertaken by SOF are irregular in nature, such as those that may fit within the framework of this monograph, CANSOF operators are bound by the same high standards as other CF units and personnel. In a recent interview with *Vanguard,* CANSOFCOM commander Brigadier-General Denis Thompson reinforces this fact stating that "[t]here is nothing that CANSOF does that would violate the criminal code of Canada, that is outside the rule of law, the laws of armed conflict or the Geneva Convention. It is not a shadow operation; it is a full participant in CF operations and directed by the CDS himself."[176]

The lack of understanding regarding SOF is not confined to the general public, however. In his book *Special Forces: A Guided Tour*

of U.S. Army Special Forces, respected author Tom Clancy admits that he considers himself to be well-informed on military matters, having spent over half of his life studying and writing about them. However, when he began to analyze special operations forces prior to writing this book, he was shocked at how little he actually knew. For instance, initially Clancy had intended to call his book *Snakeater*, based on the popular perception of SOF dating back to the Vietnam War. However, he quickly realized that this would be a mistake as this description was inaccurate and simply a myth perpetuated by Hollywood movies which failed to accurately portray the true nature of SOF operators.[177]

All of this speculation creates a bias that SOF must address to be an effective WoG security partner. The danger of this continued misunderstanding has the potential to result in inaccurate strategic risk assessments regarding SOF employment as a means of addressing complex national security issues. Within all SOF communities there is an ongoing requirement to educate external audiences to the true nature of SOF. For example, United States Special Operations Command (USSOCOM) Commander Admiral William H. McRaven concluded his popular book *Spec Ops Case Studies in Special Operations Warfare: Theory and Practice*, finding it necessary to state that "the view of special operations as unruly and cavalier with a disdain for the brass was not borne out in this study." McRaven went on to characterize his subjects as, "professionals who fully appreciated the value of proper planning and preparations, of good order and discipline, and of working with higher authorities."[178]

In an age of dwindling budgets and dispersed, hidden enemies who consistently exploit the advantages of the COE, government leaders have relied more and more on "special operators" for an increasing number of missions.[179] What makes SOF so

attractive to strategic decision-makers is their adaptability across the full spectrum of conflict.[180] In describing SOF's increased utility through the 1990s and 2000s, Horn writes:

> [SOF's] rise to prominance increased because political decision makers and senior military commanders finally realized their true value. Quite simply, relatively small, highly skilled, and mobile units that proved extremely effective in operations, and that presented a relatively small footprint, provided the political and military leadership with a viable response.[181]

Referring to the employment of SOF in peacetime, U.S. Army Colonel (Retired) John M. Collins notes:

> SOF help shape the international security environment, prepare for an uncertain future, and respond with precision in a range of potential crisis. Unique training and skills enable them to operate in situations where conventional units cannot be used for political or military reasons...they place a priority on applying finesse rather than brute force.[182]

Often referred to as "cognitive warriors", SOF operators are the product of a rigourous selection and training process that prepares them for the uncertain and complex environments of the COE. Former CANSOFCOM Commander Brigadier-General D. Michael Day and Colonel Bernd Horn characterize the individuals who apply (and are ultimately selected) for SOF as the true providers of the "SOF edge". Day and Horn explain that: "SOF organizations seek individuals who are risk accepting" who are able to expertly consider options as they "...balance the risk of acting with the failure to act." SOF operators are creative in that they can provide innovative solutions (kinetic or non-kinetic) and

possess the intellectual ability to adjust as required. They are agile thinkers able to perform multiple tasks, "...employing the entire spectrum of military, political, social, and economic solutions to complex problems," in rapidly changing environments. They are adaptive, not scared to address the unknown, and they embrace change. SOF operators are self-reliant and eager to face all challenges. They are relentless in their pursuit of excellence, striving to achieve mission success, while always remaining compliant with, "...legal mandates, civil law, and the law of armed conflict."[183]

The above characterization of SOF needs to be better understood by national security partners and agencies that may work within these time-sensitive, national crisis response environments. Conversely, those who plan and conduct SOF missions must continue to educate security partners that kinetic options will most often only be a consideration when other options have been exhausted and operational and political risk is high.[184] Emphasis must be placed on the fact that SOF possess many non-kinetic capabilities that can assist other government departments in achieving effects by other means, making their collaboration with all instruments of national power essential.

In addition to WoG security partners, there are other national security elements that must continue to be educated on the roles and functions of SOF. SOF's integrity is fundamental to establishing trust with conventional military leadership and political decision-makers, which must exist if SOF are going to be enabled to apply their capabilities to the greatest effect.[185] CANSOF needs to acknowledge that stereotypes and misunderstandings likely exist at the highest levels of decision-making. Therefore, SOF must make a deliberate effort to correct misinformation where possible, instead of avoiding social interactions with potential partners under the veil of "operational security". In meeting the expectations to address national security issues, SOF members must fully integrate

and collaborate in order to aggressively challenge the institutional biases that exist across national security agencies.

Today's SOF operators are professional, capable warriors who attempt to avoid public acknowledgement and are satisfied to consider themselves "quiet professionals".[186] Although this silence is admirable, further targeted education of select demographics across government is necessary to ensure that an accurate understanding of SOF's capabilities is shared with potential WoG security partners. Although senior military and political leaders generally have a good understanding of SOF's capabilities, arguably there is a more limited understanding across the masses of potential security partners who may be directly involved in WoG responses to national security crises.

As such, it is in CANSOFCOM's best interest to deliberately initiate a campaign to educate key security partners at all levels. This outreach must be a continuous process, put in place to deliberately educate individuals and organizations regularly, rather than limiting interactions to those occasions when a national security crisis has already developed. The benefit for CANSOFCOM is in establishing the conditions for a smoother, more effective integration with WoG security partners in national crisis situations. This connectivity will ensure that a number of SOF leaders are known across other governmental departments and are prepared to undertake the roles and responsibilities as the SOF representative within a WoG team.

Selecting the SOF Decision-Maker

The selection and assignment of a SOF representative must be a deliberate consideration made by the chain of command to achieve the requisite level of social acceptance within a WoG team. To be considered credible, the SOF representative must

possess a high level of professional expertise, based primarily on a comprehensive body of theoretical and practical knowledge and SOF experience.[187] This individual must demonstrate an ability to function within the inter-agency environment and possess a comprehensive understanding of national security issues and policies. The SOF representative should be familiar with both national and international law and be able to advise on the strategic risks associated with SOF options and supporting capabilities.[188]

CANSOFCOM's leadership must deliberately select the appropriate individual, ensuring that he/she is of the appropriate rank and possesses the necessary competencies, authority and responsibility to make immediate decisions in a time sensitive environment.[189] The assigned level of command selected to address a military problem is an important consideration, as the individual should be of an appropriate level to act with a significant degree of autonomy. CANSOFCOM must ensure that the SOF representative is enabled to make decisions in the face of complex, rapidly changing situations. Critical to the successful integration of the SOF representative is the individual's ability to establish key relationships that will foster the required support for potential SOF options. The assigned SOF representative must be competent, possessing the physical, intellectual, emotional and interpersonal abilities required to integrate and accomplish mission success. Successful integration is dependent on a high level of social skills, leading to the development of, "...trust, respect, perceptiveness, and empathy that promote effective teamwork across the various departments."[190]

The chain of command must ensure that the selected SOF representative has the requisite authority. Authority is synonymous with the SOF representative's domain of influence. In the CF, "[c]ommand is based on formally delegated authority and is the authority vested in an individual of the armed forces for the direction, coordination, and control of military forces."[191] The

requisite authority ensures that the SOF representative is empowered to act within the required scope. However, in complex and uncertain situations, such as those described in *Breaching Barriers*, the level of authority may change as the situation evolves. It is therefore important that a SOF representative possess the highest level of authority anticipated for a specific task. Although commanders are able to, "...delegate all or part of their authority depending upon the scope and complexity of an operation, how much authority is delegated to the SOF representative must be clearly articulated at the onset."[192] In the end, it may be prudent for CANSOFCOM to initially deploy a senior representative, possibly even a commanding officer, to ensure that the requisite authorities are in place to maximize the chances of mission success.

Towards an Edge Organization

One of the most significant challenges facing SOF in the non-traditional environment will be establishing the appropriate degree of C2 when the very nature of a national security crisis will elicit significant interest from both senior military leadership and political decision-makers. Within the complexity of the non-traditional environment, the SOF mission might change radically as the situation unfolds. SOF may find themselves transitioning from supporting to supported, and/or from developing non-kinetic options to developing kinetic ones. With this required flexibility in mind, the C2 arrangement must remain agile and adaptive. A C2 arrangement that can morph from one moment to the next is ideal.[193]

C2 is a subject that has received significant attention throughout the last century. The increase in joint, combined and integrated operations, and the influence of the information age, have

continued to stimulate much debate.[194] In *Command in War,* military strategist Martin Van Creveld argues that the problems surrounding C2 of military forces are as old as war itself and that failure to consider and solve these problems can result in disaster for military forces, even making it impossible for the forces to exist.[195] Dr. David Alberts goes as far as explaining that military C2 in its current form is rigid and is a "significant impediment to progress." Alberts adds that to date this problem has not been overcome because of the ingrained belief that C2, "...is synonymous with a specific way in which traditional military organizations are organized and operate."[196] Defence scientists Dr. Ross Pigeau and Carol McCann believe that it is ironic that the military can contribute to the English lexicon, while at the same time fail to use the lexicon consistently in its daily activities.[197]

Philosophically, the delegation of decision-making rights is closely aligned with the CF philosophy of mission command.[198] Canadian military doctrine states: "CF culture emphasizes mission command and empowers all commanders with the authority to execute their mission while holding them accountable for the actions of the forces under their command."[199] Further, it directs that "[t]o be effective, command should normally be decentralized to the greatest degree practicable in order to cope with the uncertainty, the disorder, the complexity, and the confusion that are usually present at the tactical level."[200] Although well-intentioned, the practice of mission command has been applied in the CF with varying degrees of success. As Major-General Daniel P. Gosselin notes:

> In the past ten years mission oriented command – the concept that subordinate commanders are given wide latitude and use their initiative and creativity to achieve strategic and operational goals – has for all intents and purposes disappeared from the CF. ... Deployed

commanders nowadays are delegated limited authority to fulfill their responsibilities ... with most key decisions elevated to the strategic headquarters in Ottawa.[201]

In contrast, in a recent blog entry for the *Harvard Business Review* entitled "Bring Power to the Edge," John Sviokla states, "...special forces teams are able to deal effectively with the most complex and dynamic situations because they have been designed to be extremely agile ... by giving the rights to make decisions to the very skin of the organization."[202] Whether perception or reality, this statement, notably from a source outside of the military establishment, acknowledges the importance of orgnanizational agility in dealing with complexity and uncertainty. For an effects-based approach to be successful in the uncertainty and complexity of the non-traditional operating environment, there is a requirement for a command system that is agile and adaptive.

In *Command in War*, Van Creveld notes that uncertainty is the central fact that all command systems must cope. The appropriate command system is determined by the nature of the task and the structure of the organization. Historically, when confronted with a task and possessing a lack of information, organizations have reacted in one of two ways. The first way is to increase the ability to process information by expanding horizontally and vertically, growing the centre in size and complexity in order to centrally understand a complex problem. However, the more appropriate response has proven to be a redesign of the organization, simplifying it in such a way as to allow it to operate with less information. By decentralizing command and control and establishing forces capable of dealing with situations semi-independently, decisions thresholds can be delegated as far down the hierarchy as possible.[203] Van Creveld cautions, however, that "it is not enough ... simply to allow subordinate commanders wide latitude and then demand that they fill it with their initiative; to do so they

76

must first be properly trained and then provided with the right organizational means."[204]

If we accept that SOF operations in the non-traditional environment are part of an extended network of complex interactions across multiple levels of a complex adaptive system, then arguably the SOF decision-maker is in the best position to deal with the demands of rapidly evolving situations.[205] Additionally, the problem is not just one of planning operations but rather also one of rapidly coordinating and deconflicting actions and effects with other departments and agencies. In order to ensure that effects are meeting the desired common endstate, actions must be consistently and continuously assessed.[206]

SOF decision-makers must be empowered to act rapidly, while adapting to a non-traditional environment. National Defence University Professor Thomas J. Czerwinski speaks of "command-by-influence" where "great reliance is placed on the initiative of subordinates based on their local situational awareness, which translates to lower decision thresholds."[207] Czerwinski argues that command-by-influence is ideally suited to deal with non-linear, complex environments where prediction and control are denied and initiative must be "...exercised to exploit opportunities guided by commander's intent."[208]

A system of C2 in which the higher level of command imposes its own action/reaction cycle and pace on lower levels will remove the tactical commander's ability to adapt. This phenomenon is increased by the advances in information technology which feed the desire of higher headquarters to master all of the information available to tactical commanders who ultimately find themselves bogged down in details.[209] In the past, institutions have dictated the parameters of who must talk to whom in order to achieve a successful working environment. In the information age, this situation is no longer possible, as everyone needs to talk to

everyone. To remain agile, organizations must become completely interoperable.[210]

Dr. David Alberts believes that "...agility must become the 'sine qua non' of military organizations."[211] Although arguably difficult to implement in the traditional conventional military sense, it is a necessity to enable SOF in the non-traditional environment where a lack of agility will result in ineffectiveness. For military organizations to be effective, agile C2 must be combined with both agile forces and an agile operating concept. Moreover, the more uncertain and dynamic the environment, the more important agility becomes. To be effective, agility must combine, "...robustness, resilience, responsiveness, flexibility, innovation, and adaptability."[212] In non-traditional military environments CANSOF must strive to become an agile (or "edge") organization that can adapt to the uncertainties and complexities associated with the COE, while integrated into a WoG team. The effective employment of SOF in such environments depends on it being part of an edge organization.

Summary

CANSOF will continue to face many challenges as it attempts to integrate into a non-traditional WoG environment while retaining the ability to effectively make decisions that address national security problems. As chapter three presented, the key to effectively functioning within this environment is the employment of an effects-based approach which addresses problems holistically. To employ such an approach requires SOF operators to be socially accepted and fully integrated into WoG teams. Developing a greater understanding of the social domain, specifically focusing on WoG partners and understanding the impact that these individuals might have on the SOF decision-making process, will allow for a more efficient integration. CANSOF must become more

78

culturally aware of potential WoG partners and understand the institutional biases that exist. SOF representatives within a WoG team must possess the social ability to establish key relationships that will foster support for potential SOF solutions should they be required.

Institutionally, CANSOF must become a more agile, adaptive organization able to function within multiple complex adaptive systems, while meeting the expectations of WoG partners. The challenge will ultimately be satisfying the requirements of the CF chain of command while simultaneously integrating into a WoG team where no two crises will elicit the same response or solicit the same requirements.

SOF decision-makers must be selected based on their experience and their possession of the requisite authority, accountability and responsibility to react accordingly in complex, rapidly evolving situations. CANSOF senior leadership must ensure that decision-making rights are distributed to the selected SOF representative and CANSOFCOM must act as a filter to higher authorities to allow designated representatives autonomy to focus on the task at hand. The challenge here will be meeting the strategic leadership's need for constant feedback while also empowering SOF decision-makers to remain agile and adaptive.

CONCLUSION

Breaching Barriers has provided an overview of the decision-making challenges facing SOF in the complex and uncertain national security environments in which they are increasingly employed. The *ad hoc* nature of Canada's current comprehensive approach to such problems makes effective collaboration and cooperation difficult. One of the most significant challenges for CANSOF is breaking down the barriers that have historically existed between government security departments and agencies. To be successful in the future, CANSOF has a requirement to fully integrate into comprehensive WoG teams to improve collaboration with national security partners and develop shared solutions. These solutions must be based on a holistic understanding of national security problems.

To achieve effective integration, CANSOF would benefit from adopting a systems approach to national security threats. This type of approach would improve CANSOF's ability to make sense of the increased complexity associated with the contemporary security environment. To develop pragmatic WoG solutions to national security problems, CANSOF should adopt an effects-based approach to special operations. Edward A. Smith's action/reaction framework is an example of an effects-based approach that is ideally suited to this type of environment. The strength of the action/reaction cycle is its focus on the social domain which is critical to the effective functioning of WoG teams.

Today, CANSOF possesses a distinct ability to rapidly deploy as a unique military instrument of national power. In doing so, it provides the Government of Canada with a cost-effective and viable military option to address emerging crises. For this reason, CANSOF can fill a niche role between the deployment of larger,

more elaborate military forces, which often present excessive political risk, and national law enforcement agencies, which may not possess all of the necessary capabilities to provide potential solutions to complex national security problems abroad. In such situations, the requirement to engage quickly and efficiently, often with minimal intelligence, makes the decision-making process extremely complex and challenging.

To function effectively in a WoG environment, CANSOF must continue to improve the way in which it comprehends the complexity it will face in unfamiliar environments. Although traditional linear problem solving methodologies, such as CF OPP, continue to provide a means of addressing complicated problems, they are limited in addressing the complexity associated with the contemporary security environment. In these environments, CANSOF has a requirement to diverge from traditional linear mechanistic thinking and adopt a non-linear systems approach, which is better suited for rapid response operations.

A systems approach is a good option because it accounts for the involvement of an increased number of actors with a greater amount of influence and provides an improved understanding of the consequences that these interactions might produce. It is important for CANSOF to acknowledge that isolated, independent interactions between actors can create disproportional changes to situations, which can only be understood by analyzing the whole problem instead of its specific, isolated parts.

An effects-based approach, which focuses on developing a holistic understanding, is well suited for CANSOF elements to integrate and collaborate closely with its WoG partners. In fact, CF doctrine encourages an effects-based approach to operations involving WoG partners in complex crisis situations where time is at a premium and the threshold of available information is low. Notably,

a holistic approach is suitable in these circumstances as potential solutions must aim to influence events or behaviours by utilizing the appropriate instrument of national power at the appropriate time.[213]

Edward A. Smith's action/reaction cycle is an appropriate framework that CANSOF can adopt for applying an effects-based approach. The action/reaction cycle facilitates effective, rapid decision-making by integrating partnered organizations into an overall approach to operations aimed at delivering effects collaboratively. In the action/reaction cycle, a physical action originating in the physical domain passes through the information domain to become an element of shared awareness. However the physical action does not elicit a reaction until it enters the cognitive domain, where it is seen, heard or sensed by the decision-maker. This area is where the reaction is shaped.[214] But, as Smith points out, there is more to the action/reaction cycle. For an effects-based approach to be effective, it is important to know, "not only how humans in general might act, but also how the reactions of one individual or group might differ from others."[215] In other words, for CANSOF to successfully apply Smith's action/reaction cycle, it must focus its efforts on understanding and exploiting the social domain.

For SOF, the social domain is significant in the absence of an overarching control structure within a WoG framework. The personal relationships that are formed between SOF and other government security departments and agencies become critical to the effective application of an effects-based approach. However, these relationships are challenging to achieve and even harder to maintain. This situation is compounded by the fact that SOF remain an unknown entity to many potential government security partners. For this reason institutional biases have developed constraining relationships between security personnel and becoming

counter-productive, especially in time constrained environments. To effectively integrate, SOF must address these institutional biases and become more transparent with WoG security partners. This transparency will require the development of an educational campaign aimed at personnel of all levels in national security agencies that may be employed with SOF. Notably, establishing key relationships should not be left until a national security crisis occurs.

Additionally, for SOF to develop an improved understanding of the social domain, it requires a higher level of cultural intelligence regarding WoG security partners. Cultural intelligence aims to establish an understanding of the social and cultural challenges that exist across national security agencies. Developing such an understanding will allow SOF to more effectively and efficiently interact with national security partners and establish personal and professional relationships with WoG partners. By improving members' cultural intelligence, CANSOF will be in a better position to collaborate with national security partners, thereby streamlining the integration process for WoG teams.

Addressing institutional bias and developing an improved cultural awareness will only be successful if CANSOFCOM selects the appropriate decision-makers to integrate into WoG teams. To be considered credible and, more importantly, to earn the trust of WoG partners, the selected SOF representative must possess the necessary competency, authority and responsibility. It is important that the selected individual is of the appropriate rank level to be effective in a time constrained, crisis environment, while meeting other expectations of WoG partners.

The appropriate decision-maker must be enabled to represent SOF to the greatest degree possible. This effect will be challenging as the very nature of national security crises will elicit significant interest from both CF senior leadership and political decision-

makers. CANSOFCOM must ensure that decision-making rights are decentralized to the greatest extent possible and that the desire for constant feedback to higher levels is controlled.

The increased complexity and uncertainty of the COE will continue to generate significant security challenges for both the CF and the Government of Canada. As these complex challenges evolve, the government will look for innovative ways to protect national interests, both at home and abroad. Though rarely the lead agency, the CF will increasingly be relied upon to fill capability gaps that exist within other security departments agencies. As a unique military instrument of national power, CANSOF will remain a critical national security partner deployed as part of a WoG response. Although the establishment of CANSOFCOM has alleviated some of the challenges for CANSOF operating in non-traditional military environments, many continue to exist. Addressing these challenges is critical, as CANSOF will continue to be a unique military instrument of national power capable of providing solutions to complex national security problems well into the future.

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In 2002, Major Hunter was selected for service in Joint Task Force Two where, after successfully completing selection and his Special Operations Assaulter Course, he served as a Troop Commander, Squadron 2nd in Command, Chief Instructor and Squadron Commander. In 2005, Major Hunter deployed to Afghanistan as an Operations Officer for a Special Operations Task Force. In 2008, Major Hunter was promoted to his current rank. In 2009, Major Hunter returned to Afghanistan as a Lieutenant-Colonel (While So Employed) and was employed as a Task Force Commander for a Special Operations Task Force. Major Hunter has also deployed on operations to Haiti, Central Africa and the Middle East.

In 2011, Major Hunter was selected to attend the Canadian Forces Command and Staff College in Toronto where he completed his Master of Defence Studies. He is currently a student on French language training at the Canadian Forces Language School in Gatineau, Quebec.

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NOTES

1   Chief of Force Development, *The Future Security Environment 2008-2030* (Ottawa, ON: Department of National Defence, 2009), 94.

2   National Intelligence Council, *Global Trends 2025: A Transformed World* (Washington: United States Government Printing Office, 2008), x-xi; available from <http://www.dni.gov/nic/PDF_2025/2025_Global_Trends_Final_Report.pdf>, accessed 12 January 2012.

3   Chief of Force Development, *The Future Security Environment 2008-2030*, 86-87.

4   There are four instruments of national power, which are often referred to using the acronym DIME; diplomatic, informational, military and economic power. Diplomacy is the most important instrument in the application of national foreign policy. A state can combine diplomacy with military power as a means of persuasion against hostilities. Informational power is a strategic resource utilized in the pursuit of national interests. In the information age, national strategic decision-making is increasingly reliant on the real-time flow of relevant information. Further, military operations depend on the timely flow and dissemination of information to assist in rapid decision-making. The third instrument of national power is military power. Military power is applied when a state deems it necessary to achieve national objectives. Military power has historically been utilized as a means of last resort, failing the successful application of other instruments of national power. However, it is questionable if this remains so today. Finally, the fourth instrument is economic power, which is vast in its application. Economic power can be applied to open up or deny markets, facilitate foreign aid, and, "conduct economic activities in support of national objectives which may include disruption of trade, withdrawal of aid, or direct economic sanctions." The instrument of economic power may be combined with the application of military power to increase its effect. An example would be the enforcement of sanctions. See Department of National Defence,

Canadian Forces Joint Publication 01 - Canadian Military Doctrine (Ottawa: Canadian Forces Experimentation Centre, 2009), 2-1 to 2-2.

5   Joint Special Operations Forces Institute, *United States Special Operations Force Reference Manual* (Fayetteville: Cubic Applications, 1998), 1-2.

6   Department of Defense, *Joint Publication 3-05: Special Operations* (Washington: U.S. Government Printing Office, 2011), 1-1.

7   Department of National Defence, *Canadian Special Forces Command: An Overview* (Ottawa: DND Canada, 2008), 13.

8   Howard Coombs, "Perspectives on Operational Thought," in *The Operational Art: Canadian Perspectives*, (Kingston: Canadian Defence Academy Press, 2005), 75.

9   The focus of this monograph will remain on the institutional and human dimensions of decision-making in complexity. Mathematical or automated approaches will be avoided, as they have proven to be limited when applied to non-linear problems.

10   Colonel James K. Greer, "Operational Art for the Objective Force," *Military Review*, Vol. 82, Issue 5, (September/October 2002): 26-27.

11   Statement reportedly made by former Chief of the Defence Staff General Rick Hillier, during a speech to the Canadian Conference of Defence Associations held in Ottawa, 3-4 March, 2005 as reported in *Legion Magazine* by Adam Day, "Budget, Missile Defence Dominate Conference," *Legion Magazine* (May/June 2005); <http://www.legionmagazine.com/en/index.php/2005/05/budget-missile-defence-dominate-conference/>, accessed 5 February 2012.

12   Clausewitz explained complexity as the "friction of war," where although war appears to be simple, upon actually seeing it unfold, the difficulties become apparent. He believed that it is extremely difficult to predict all of the elements that will alter the way war unfolds. Clausewitz understood the unpredictability of the social domain and its added

complexity stating, "...we should bear in mind that none of [war's] components is of one piece: each part is composed of individuals. Every one of whom retains his potential of friction." Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret. (Princeton: Princeton University Press, 1976), 119-121.

13   National Intelligence Council, *Global Trends 2025: A Transformed World*, 71.

14   John M. Collins, "Special Operations Forces in Peacetime," *Joint Forces Quarterly*, No. 21 (Spring 1999): 56.

15   Ibid., 61.

16   Department of Defense, *Joint Publication 3-05: Special Operations*, IX.

17   Department of National Defence, *Canadian Special Operations Forces Command: An Overview*, 12.

18   Stephen J. Flanagan and James A. Shear, *Strategic Challenges: America's Global Security Agenda* (Dulles: National Defense University Press, 2008), 2.

19   Chief of Force Development, *The Future Security Environment 2008-2030*, 10.

20   Thomas P.M Arnett, *The Pentagon's New Map* (New York: G.P. Putnam's Sons, 2004), 214-245.

21   Chief of Force Development, *The Future Security Environment 2008-2030*, 10.

22   Ibid., 17.

23   North Atlantic Treaty Organization (NATO), "The Multiple Futures Project: Navigating towards 2030 – Final Report," (April 2009), 52; available from <http://www.act.nato.int/index.php/mfp-documents>, accessed 20 January 2012.

24   Global Policy Forum, "Failed States"; available from <http://www.globalpolicy.org/nations-a-states/failed-states.html>, accessed 4 February 2012.

25   Noted U.S. professors of strategic studies, Dr. Steven Metz and Dr. Douglas V. Johnson II, describe asymmetry as it applies to the realm of military affairs and national security as, "acting, organizing, and thinking *differently* than opponents in order to maximize one's own advantages, exploit an opponent's weaknesses, attain the initiative, or gain greater freedom of action. It can be *political-strategic, military-strategic, operational*, or a *combination* of these. It can entail different *methods, technologies, values, organizations, time perspectives*, or some *combination* of these. It can be *short-term* or *long-term*. It can be deliberate or by default. It can be *discrete* or pursued in *conjunction with* symmetric approaches. It can have both psychological and physical dimensions." Steven Metz and Douglas V. Johnson II, "Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts," U.S. Army War College, Strategic Studies Institute, January 2001, 5-6.

26   National Intelligence Council, *Global Trends 2025: A Transformed World*, 68.

27   Department of Foreign Affairs and Trade, *Canada's International Policy Statement: A Role of Pride and Influence in the World - Diplomacy* (Ottawa: Government of Canada, 2005), 1.

28   Emily O. Goldman, *Power in Uncertain Times* (Stanford: Stanford University Press, 2011), xi.

29   Department of National Defence, B-GJ-005-000/FP-001 *Canadian Forces Joint Publication 01 - Canadian Military Doctrine*, 2-11.

30   Privy Council Office, *Securing an Open Society: Canada's National Security Policy* (Ottawa: Government of Canada, 2004), 4-5; available from <http://publications.gc.ca/collections/Collection/CP22-77-2004E.pdf >, accessed 12 February 2012.

31   Ted Parkinson, "Has the Time Arrived for a Canadian Foreign Intelligence Service?" *Canadian Military Journal* Vol. 7, No. 2 (Summer, 2006): 17; <http://www.journal.forces.gc.ca/vo7/no2/doc/parkinso-eng.pdf >, accessed 10 February 2012.

32   Privy Council Office, *Securing an Open Society: Canada's National Security Policy*, iii.

33   Ibid., 4.

34   Ted Parkinson, "Has the Time Arrived for a Canadian Foreign Intelligence Service?", 17.

35   In the 2001 Canadian federal budget, the government of Canada announced an additional $119 million to double the size of Joint Task Force 2, Canada's national counter-terrorism force, over a 5 years period with a view to expanding CANSOF's ability to respond domestically and abroad. Department of Finance, *Enhancing Security for Canadians, Budget 2001*, <http://www.fin.gc.ca/budget01/bp/bpch5e.htm>, accessed 15 February 2012.

36   CANSOFCOM is made up of four units: Joint Task Force 2, the Canadian Special Operations Regiment (CSOR), the Canadian Joint Integrated Response Unit (CJIRU), and 427 Special Operations Aviation Squadron. For more information see <http://www.cansofcom.forces.gc.ca/index-eng.asp>.

37   Bill Bentley, *Broadsword or Rapier? The Canadian Forces Involvement in 21st Century Coalition Operations. Report Prepared for the Strategic Joint Staff to Study the CDS's Critical Topic List Item #6* (Kingston: Canadian Forces Leadership Institute, 2008), 22.

38   Nonetheless, the absence of a single authority makes effective collaboration critical to ensure the continued passage of information and intelligence. If successful cooperation prevails as a result of the effective social interactions between team members, the expectations of multiple agencies can be met simultaneously leading to a more

productive environment. For example, Department of Foreign Affairs and International Trade (DFAIT) representative Gavin Buchan states regarding his experience in Afghanistan that "neither of the traditional departmental leads on complex missions (DFAIT and CF) could control the process, ensuring instead that they collaborated on an equal footing. This limited the likelihood of either the civilian or the military viewpoint being imposed, encouraging instead compromise and accommodation." Gavin Buchan, "Breaking Down the Silos: Managing the Whole of Government Effort in Afghanistan," *Canadian Military Journal* Vol. 10, No. 4 (Autumn 2010): 76.

39   B.J. Brister, "Family Relations: A Preliminary Analysis of the Use of the Comprehensive Approach at the Vancouver 2010 Winter Olympics," in *Security Operations in the 21st Century: Canadian Perspectives on the Comprehensive Approach*, eds. Michael A. Rostek and Peter. Gizewski, (Kingston: Queen's Centre for International Relations, 2011), 168-169.

40   Emily O. Goldman, *Power in Uncertain Times*, 1.

41   NATO, "The Multiple Futures Project: Navigating towards 2030 – Final Report", 7.

42   For more details on significant kidnapping incidents involving Canadians abroad see: Robert R. Fowler, *A Season in Hell: My 30 Days in the Sahara with Al Qaeda* (Toronto: Harper Collins Publishing Limited, 2011), 342; Mellissa Fung, *Under an Afghan Sky: A Memoir of Captivity* (Toronto: Harper Collins Canada, 2011), 358; <http://en.wikipedia.org/wiki/Amanda_Lindhout>; <http://en.wikipedia.org/wiki/Christian_Peacemaker_hostage_crisis>.

43   Department of National Defence, *Canada First Defence Strategy*, (Ottawa: DND, 2008), 7; available from <http://www.forces.gc.ca/site/pri/first-premier/June18_0910_CFDS_english_low-res.pdf>, accessed 30 October 2011.

44   Department of Foreign Affairs and International Trade. *Canada's International Policy Statement: A Role of Pride and Influence in the World – Overview* (Ottawa: Government of Canada, 2005), 11.

45   Department of National Defence, *Canada First Defence Strategy*, 8.

46   Department of Foreign Affairs and International Trade. *Canada's International Policy Statement: A Role of Pride and Influence in the World – Overview*, 23.

47   Department of National Defence, *Canada First Defence Strategy,* 8.

48   Chief of Force Development, *The Future Security Environment 2008-2030*, 87.

49   Department of National Defence, B-GJ-005-000/FP-001 *Canadian Forces Joint Publication 01 – Canadian Military Doctrine*, 2-16.

50   Ibid., 2-11.

51   NATO, "The Multiple Futures Project: Navigating towards 2030 – Final Report," 3.

52   E. Luttwak, *A Systematic Review of "Commando" (Special) Operations 1939–1980* (Potomac: C&L Associates), I-1.

53   Department of Defense, *Joint Publication 3-05: Special Operations*, GL-12.

54   Ibid., II-2 to II-4.

55   The SOF truths were initially adopted by USSOCOM, but have since become the guiding principles for many other SOF forces, including CANSOF. For more information see <http://www.socom.mil/default.aspx>, accessed 10 February 2012.

56   Due to its small size and highly compartmentalized employment, there is very little open source documentation of JTF-2 and the operations it conducted over this period.

57   Lieutenant-General Michael Jeffery (ret'd), *Inside Canadian Forces Transformation: Institutional Leadership as a Catalyst for Change* (Kingston: Canadian Defence Academy Press, 2009), 31.

58   BGen D. Michael Day, and Col Bernd Horn, "Canadian Special Operations Command: The Maturation of a National Capability," *Canadian Military Journal* Vol. 10, No. 4 (Autumn 2010): 74; <http://www.journal. forces.gc.ca/vol10/no4/doc/12-day%20horn-eng.pdf>, accessed 24 February 2012.

59   Department of Defence, *Joint Publication 3-05: Special Operations*, 1-1.

60   BGen D. Michael Day, and Col Bernd Horn, "Canadian Special Operations Command: The Maturation of a National Capability," 69.

61   In the Canadian sense, counter terrorism operations includes hostage rescue, recovery of sensitive material recovery and exploitation, and direct action strikes against infrastructure. In the domestic context CANSOF can be called upon to support Canadian Law Enforcement Agencies. Maritime counter-terrorism operations represent complex endevours requiring a high level of expertise and specialized equipment to prosecute. Finally, "other high value tasks" refer to missions at home or abroad, that may be determined essential to the security objectives of the Government of Canada. "They include (but are not limited to) counter proliferation, special reconnaissance, direct action and defence, diplomacy and military assistance." For more information see Department of National Defence, *Canadian Special Forces Command: An Overview* or <http://www.cansofcom.forces.gc.ca/index-eng. asp>.

62   Department of National Defence, B-GJ-300-000/FP-001 Canadian Forces Joint Publication 03 – Operations (Ottawa: Canadian Forces Warfare Centre, 2011), 3-6.

63   G. John Ikenberry, "Liberal Order Building," in *To Lead the World: American Strategy After the Bush Doctrine*, ed. Melvin P. Leffler and Jeffery W. Legro, 85-108 (New York: Oxford University Press, 2008), 91.

64   Carl von Clausewitz, *On War,* ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 135.

65   Colonel James K. Greer, "Operational Art for the Objective Force," 26-27.

66   Ervin Lazlo, *The Systems View of the World: A Holistic Vision for Our Time*, 3rd ed. (Cresskill: Hampton Press, 2001), 7.

67   Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity* (New York: Columbia University Press, 2009), 30.

68   John F. Schmitt, "Command and Out of Control: The Military Implications of Complexity Theory," in *Complexity, Global Politics and National Security*, ed. David S. Alberts and Thomas J. Czerwinski, 99-111 (Washington: National Defence University, 1997), 99.

69   Murray Gell-Mann, "The Simple and the Complex," in David S. Alberts and Thomas J. Czerwinski, (Eds.), *Complexity, Global Politics and National Security*, (Washington: National Defense University, 1997), 2-12.

70   Thomas Czerwinski, *Coping with the Bounds: Speculations on Non-linearity in Military Affairs* (Washington: CCRP, 1998), 8.

71   John F. Schmitt, "Command and Out of Control: The Military Implications of Complexity Theory," 99.

72   Ibid., 100-101.

73   Like most Western militaries, the CF employs a linear reductionist planning methodology known as the Operational Planning Process. The OPP is used to prepare military plans and orders by providing a logical and analytical framework for military staff planning. This process has served the CF well historically and continues to demonstrate its utility in many cases today. However, the process has been criticized for being heavily dependent on information and slow. In today's complex and uncertain environment, which often includes government participants from other departments, the OPP has demonstrated some potential limitations. For more information on the CF OPP see Department of

National Defence, B-GJ-005-500/FP-000 *Canadian Forces Operational Planning Process* (Ottawa: Department of National Defence, 2008).

74   Department of National Defence, B-GJ-005-500/FP-000 *Canadian Forces Operational Planning Process* (Ottawa: Department of National Defence, 2008), 1-3.

75   Robert Jervis, "Complex Systems: The Role of Interactions," in *Complexity, Global Politics and National Security*, ed. David S. Alberts and Thomas J. Czerwinski, 20-31 (Washington: National Defence University, 1997), 20.

76   For a complete overview regarding the evolution of military thought, see Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity* (New York: Columbia University Press, 2009).

77   Ervin J. Rokke, foreword in David S. Alberts and Thomas J. Czerwinski, *Complexity, Global Politics and National Security* (Washington: National Defence University, 1997), ii.

78   David Alberts and Thomas Czerwinski credit author Mitchell Waldrop's book *Complexity: The Emerging Science at the Edge of Order and Chaos, and Steven Lewin's Complexity: Life at the Edge of Chaos* with bringing complexity theory into the public domain. David S. Alberts and Thomas J. Czerwinski, Complexity, Global Politics and National Security (Washington: National University Press, 1997), iii.

79   Ibid.

80   Bill Bentley and Scott M. Davy, "Military Decision-Making and Soft Systems Methodology," in *Decision-Making: International Perspectives* (Kingston: Canadian Defence Academy Press, 2009), 25.

81   Thomas Czerwinski, *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*, 9.

82   Ervin J. Rokke, foreword in David S. Alberts and Thomas J. Czerwinski, *Complexity, Global Politics and National Security*, ii.

83   Bill Bentley and Scott M. Davy, "Military Decision-Making and Soft Systems Methodology," 26.

84   Robert Jervis, "Complex Systems: The Role of Interactions," 20.

85   Sargut Gökçe and Rita Gunther McGrath. "Learning to Live with Complexity," *Harvard Business Review* (September 2011): 71-72.

86   Robert Jervis, "Complex Systems: The Role of Interactions," 20.

87   Sargut Gökçe and Rita Gunther McGrath, "Learning to Live with Complexity," 70.

88   Michael J. Mauboussin, "Embracing Complexity," *Harvard Business Review* (September 2011): 90.

89   James N. Rosenau, "Many Damn Things Simultaneously: Complexity Theory and World Affairs," in David S. Alberts and Thomas J. Czerwinski, (Eds.), *Complexity, Global Politics and National Security* (Washington: National Defense University, 1997), 32.

90   Ibid.

91   Ibid., 35.

92   Sargut Gökçe and Rita Gunther McGrath. "Learning to Live with Complexity," 70.

93   Robert R. Maxfield, "Complexity and Organization Management," in *Complexity, Global Politics and National Security*, ed. David S. Alberts and Thomas J. Czerwinski, 78-97 (Washington: National Defense University, 1997), 79.

94   Christopher R. Paparone, Ruth A. Anderson and Reuben R. McDaniel, Jr, "Where Military Professionalism Meets Complexity Science," *Armed Forces and Society* Vol. 34, No. 3 (April 2008): 439.

95   Kimberley B. Boal and Patrick L. Shultz, "Storytelling, Time, and Evolution: The Role of Strategic Leadership in Complex Adaptive Systems," *The Leadership Quarterly* Vol. 18, No. 5 (October 2007): 412.

96   Sargut Gökçe and Rita Gunther McGrath, "Learning to Live with Complexity," 72.

97   Thomas Czerwinski, *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*, 92.

98   Christopher R. Paparone, Ruth A. Anderson and Reuben R. McDaniel, Jr, "Where Military Professionalism Meets Complexity Science," 442.

99   Ibid., 439.

100   Michael J. Mauboussin, "Embracing Complexity," *Harvard Business Review* (September 2011): 89.

101   Christopher R. Paparone, Ruth A. Anderson and Reuben R. McDaniel, Jr, "Where Military Professionalism Meets Complexity Science," 443.

102   Ibid., 441-442.

103   Thomas Czerwinski, *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*, 13.

104   Michael J. Mauboussin, "Embracing Complexity," *Harvard Business Review* (September 2011): 89.

105   John F. Schmitt, "Command and Out of Control: The Military Implications of Complexity Theory," 106.

106   In his work *Living Systems*, James Grier Miller, a pioneer of living systems theory, proposed that there are structures and processes from the biological world that can be used to explain the interactions in the non-living, physical world. For instance, Miller posited that human inter-relationships, not unlike cells, organs, and organisms, exist as

components of a greater system that crosses into other, more complex systems. Further, these inter-relationships can have an equal effect on other systems within the hierarchy. This theory is often referred to as "system of systems" or a living systems model. For more information see James Grier Miller, *Living Systems* (New York: McGraw-Hill, 1978), 1102.

107 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, (Washington: CCRP Publications, 2006), 45-50.

108 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 51.

109 Ibid., 45-50.

110 David S. Alberts and Richard E. Hayes, *Understanding Command and Control* (Washington: CCRP, 2006), 1-2; <http://www.dodccrp.org/files/Alberts_UC2.pdf>, accessed 3 March 2012.

111 The Oxford Dictionary defines "covert" as not done openly; secret. Catherine Soans, *Pocket Oxford Dictionary* (New York: Oxford University Press, 2002), 202.

112 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 101.

113 Allan English, Richard Gimblett and Howard Coombs, *Networked Operations and Transformation: Context and Canadian Contributions* (Kingston: Queen's University Press, 2007), 133-134.

114 In a 2008 *Joint Forces Quarterly* article, Commander of the now disestablished U.S. Joint Force Command (USJFCOM), General James N. Mattis, ordered the immediate removal of EBO from the official lexicon concerning training and operations within USJFCOM. Although General Mattis highlighted EBOs benefits, which include fostering a complete examination of all desired outcomes the likely consequences of the actions taken, his rationale for removing EBO was based on a belief that it had "been misapplied and overextended," and was a hindrance to

effective joint U.S. military operations. General Mattis further stated that EBO (and its associated Operational Net Assessment and System of Systems Analysis) had not delivered, and lacked a clear understanding across the U.S. military. Specifically in reference to the challenges of integrating DIME's instruments of national power, Mattis argued that the comprehensive approach did not require a new lexicon, but a more collaborative means to "gain and maintain a shared understanding of the problem and the complexity involved in developing comprehensive solutions." He further argued that the best way to "break down the cross-governmental barriers is through effective campaign design, planning, and assessment as outlined in Marine Corps and Army doctrine." This author believes that although this argument may prove sound in some traditional military environments, it is probably unachievable in the Canadian WoG context. First, other Canadian government departments would not likely be open to a military imposed planning methodology. For most endeavours of this sort, the CF participates in as a supporting element, not as a lead agency. Second, there is little familiarity across Canadian government organizations with CF OPP, let alone how to function effectively within it. The common ground for WoG participants is the need to understand the political, military, economic, social, information, infrastructure (PMESII) characteristics associated with the operating environment as a means of achieving shared awareness. This author believes that functionality within the WoG environment results from the social interactions that inform and enable a common understanding of the problem set supporting decision-making in complex non-traditional military environments. For more information on USJFCOM and EBO see General James N. Mattis, USMC, "USJFCOM Commander's Guidance for Effects-Based Operations," *Joint Forces Quarterly* Vol. 51 (4th Quarter 2008).

115   CF doctrine defines rapid response operations as "... those force employment activities that require an immediate CF action to save lives, reduce human suffering, and/or mitigate property damage. In the interest of achieving timely effects, planning will be reduced to its essential components; thus higher risk is accepted in planning, preparing and coordinating the operation." See Department of National Defence,

B-GJ-005-000/FP-001 *Canadian Forces Joint Publication 01 – Canadian Military Doctrine*, 6-2.

116   Department of National Defence, B-GJ-300-000/FP-001 *Canadian Forces Joint Publication 03 – Operations*, 3-6.

117   Edward A. Smith, "Effects Based Operations: The Way Ahead," *9th International Command and Control Research and Technology Symposium* (Copenhagen, Denmark, September 2004), 2.

118   This definition was originally found within a USJFCOM pamphlet entitled, "Operational Implications of Effects-based Operations (EBO)," produced by the Joint Warfighting Center Joint Doctrine Series (Pamphlet 7, 17 November 2004). This pamphlet is no longer available online. The definition was taken from Colonel J.F. Cottingham, "Effects-Based Operations: An Evolving Revolution," in *Effects-Based Approaches to Operations: Canadian Perspectives*, ed. Allan English and Howard Coombs (Ottawa: Department of National Defence, 2008), 48.

119   Ibid.

120   Department of National Defence, B-GJ-005-000/FP-001 *Canadian Forces Joint Publication 01 – Canadian Military Doctrine*, 6-4 to 6-5.

121   The only reference to effects-based operations found within Canadian joint doctrine is contained in *Canadian Forces Joint Publication 01 – Canadian Military Doctrine*, which states, "[a]n effects-based approach to planning recognizes the requirement to employ the military instrument of power in harmony with diplomatic and economic efforts to find a long-term solution to a crisis. An effects-based philosophy deals with the situation as a whole and the changes that need to be made to physical and cognitive elements to secure a favourable outcome. Commanders need to assess the impact of their decisions and actions on the will, understanding, and capability of all participants, not merely the impact on the adversary. Effects-based thinking takes into consideration the physical and non-physical effects during all aspects of an operation (e.g., planning, preparations, execution, and assessment).

Intermediate layers, called "effects," exist between high-level objectives and physical actions. Effects-based thinking is a tool in support of the operational art, which links tactics to strategic aims." Ibid.

122 Colonel John A. Warden III, "The Enemy As a System," *Airpower Journal* Vol. 9, No. 1 (Spring 1995): 40-55.

123 Ibid., 44.

124 Ibid., 46.

125 For example, this is a classic criticism made by contemporary counter-insurgency advocates such as General David Petraeus and Lieutenant-Colonel John Nagl. From a COIN perspective, they argue that although killing or capturing insurgents is necessary, it can also be counterproductive in that it can generate resentment, create martyrs and motive new recruits. Further, insurgent groups can rapidly replace their losses negating any short-term advantage achieved. See Department of the Army, *The U.S. Army/Marine Corps Counterinsurgency Field Manual: U.S. Army Field Manual No. 3-24, Marine Corps Warfighting Publication No. 3-33.5* (Chicago: University of Chicago Press, 2007), 1-128 to 1-129.

126 Colonel J.F. Cottingham, "Effects-Based Operations: An Evolving Revolution," 23.

127 Colonel John A. Warden III, "The Enemy As a System," 47.

128 Ibid., 44.

129 David A. Deptula, "Effects-Based Operations," *Air and Space Power Journal* Vol. 20, No. 1 (Spring 2006): 4.

130 David A. Deptula, *Effects-Based Operations: Change in the Nature of Warfare* (Arlington, VA: Aerospace Education Foundation, 2001), 5-6.

131 In distinguishing between the three types of military operations, Maris McCrabb explains that: "Target-based approaches identify the

enemy entities or targets and sets out to destroy them. The focus is on the physical effects at the target level only. It has been the traditional—and bloody—approach to warfare for millennia. Objectives-based approaches look at the strategy at one level and turn that strategy (such as the national security level) into objectives at the next lower level (such as the theater or campaign level). The focus here is on objectives to satisfy the higher level strategies. This became a commonly used approach for planning, assessing, and executing warfare at all levels over the past decade. With an effects-based operations approach one explicitly examines and models the causes between actions and effects. Both physical and behavioral direct and indirect effects. Effects are the main focus. EBO encompasses and supplements both target-based and objectives-based approaches. The goal is to model the enemy as a system and provide dynamic real-time assessment as opposed to the other approaches where no dynamic assessment is made." Maris "Buster" McCrabb, "Effects-Based Operations: An Overview," available from <http://www.au.af.mil/au/awc/awcgate/af/ebo.ppt>, accessed 13 March 2012.

132 Sandra Marshall, "Measures of Attention and Cognitive Effort in Tactical Decision Making," in *Decision Making in Complex Environments*, ed. Malcolm Cook, Jan Noyes, and Yvonne Masakowski (Aldershot: Ashgate Publishing Ltd, 2007), 321.

133 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 95-96.

134 Edward A. Smith, "Effects Based Operations: The Way Ahead," 6.

135 Edward A. Smith, *Effects Based Operations: Applying Network Centric Warfare in Peace,* Crisis and War (Washington: CCRP Publications, 2003), xv.

136 Edward A. Smith, "Effects Based Operations: The Way Ahead," 6.

137 The Command and Control Research Programme (CCRP) is an organization with a mandate to improve the U.S. Department of Defense's

understanding of the national security implications of the Information Age. The Programme is mostly focused on Command and Control and the associated impacts of emerging technologies. The CCRP sees itself as a bridge between the operational, technical, analytical, and educational communities. More information can be obtained at <http://www.dodccrp.org/>.

138 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations,* 96.

139 David S. Alberts, and Richard E. Hayes, *Power to the Edge: Command... Control... in the Information Age* (Washington: CCRP, 2005), 113; <http://www.dodccrp.org/files/Alberts_Power.pdf>, accessed 15 March 2012.

140 Ibid.

141 According to Alberts, Garstka, Hayes, and Signori, "The information domain serves both as the linkage between reality and the cognitive domain (inside people's heads) and as the medium by which information (technically data, information, pre-real time knowledge, images, and understandings about the current and projected situation) is stored, retrieved, and disseminated. The information domain can be interpersonal (voice, face to face) or manifested in machines, such as computers and communications systems." David S. Alberts, John J. Garstka, Richard E. Hayes, and David T. Signori, *Understanding Information Age Warfare* (Washington: CCRP, 2001), 106; <http://www.dodccrp.org/files/Alberts_UIAW.pdf>, accessed 3 March 2012.

142 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 99.

143 Ibid., 104.

144 David S. Alberts, John J. Garstka, Richard E. Hayes, and David T. Signori, *Understanding Information Age Warfare*, 13.

145 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 99.

146 Edward A. Smith, "Effects Based Operations: The Way Ahead," 6.

147 Edward Smith originally deviated from Alberts and Hayes original description of the social domain by referring to it as the "societal" domain in order to emphasis the focus on shaping the behaviour of specific social groupings to perceive and decide, vice society as a whole. In later writings Smith reverted back to using the "social domain". See Edward A. Smith, "Effects Based Operations: The Way Ahead," 7; and David S. Alberts and Richard Hayes, *Power to the Edge: Command... Control...in the Information Age* (Washington: CCRP, 2005), 15.

148 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 100.

149 Ibid., 103.

150 Edward A. Smith, "Effects Based Operations: The Way Ahead," 7.

151 In *The Scientific Way of War,* Antoine Bousquet explains that "OODA stands for Observe-Orient-Decide-Act, and models the decision making process in four stages. The *observation* stage explains the process that the actor undertakes to gathers information from the environment, assess himself within this environment and assess the actions of the adversary. The *orientation* stage, arguably the most important, is where the actor interprets this newly acquired information through an existing framework (or schema) to create meaning, identify opportunities and threats, and provide a range of responses for initiation. The *decision* stage sees the selection of a best course of action after a comparison with competing courses of action. Finally, the *action* phase sees the selected course of action actualized." For more information on Smith's use of Boyd's Theory, see Edward A. Smith, *Effects-Based Operations: Applying Network Centric Warfare in Peace, Crisis and Warfare;* Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity* (New York: Columbia University Press, 2009).

152 Smith, *EBO: Applying Network Centric*, 158.

153 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 311.

154 For more information on these essential processes see Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 110-148.

155 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations,* 151-152.

156 Ibid., 151.

157 This scenario is inspired by those presented in Chapter 5 of Edward A. Smith's book *Complexity, Networking and Effect-Based Approaches to Operations*, as well as the personal experiences of this author. Although this scenario is hypothetical, for the purposes of this monograph, this author has chosen to focus on the assessment and planning processes and the associated social influences. In his book, Edward Smith discusses the execution process; however, it is this author's opinion that any discussion regarding the execution of a SOF mission in this type of environment would be pure speculation and would fail to add any substance to the monograph. Further, the decision to execute a SOF mission of this type ultimately rests with the highest authorities within the Government of Canada.

158 Alberts, Garstka, Hayes, and Signori note that "in non-traditional missions the range of information that must be available to the commander and staff extends across political, military, economic, social, and information (media, etc.) arenas. Failure to recognize the full range of these information needs can create serious problems." David S. Alberts, John J. Garstka, Richard E. Hayes, and David T. Signori, *Understanding Information Age Warfare* (Washington: CCRP, 2001), 106; <http://www.dodccrp.org/files/Alberts_UIAW.pdf>, accessed 3 March 2012.

159 Alberts, Garstka, Hayes, David, and Signori define collaboration as "sharing in order to work together toward a common purpose." See David S. Alberts, John J. Garstka, Richard E. Hayes, and David T. Signori, *Understanding Information Age Warfare*, 197.

160 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 311-312.

161   Ibid., 101.

162   Ibid., 48.

163   Peter J. Williams, "Being Effective in Snake Fighting – Lessons for the Canadian Forces in the Effects-Based Operations Era," *Canadian Military Journal* Vol. 10, No. 4 (Autumn 2010): 19.

164   "Unity of effort can be characterized as the coordination and cooperation that occurs amongst participants toward achieving a commonly recognized political objective, even when the elements are not part of the same command structure. Within a comprehensive approach, unity of command may not be possible due to the assortment of agencies and/or participants from other nations. However, the requirement for unity of effort remains paramount." See Department of National Defence, B-GJ-300-000/FP-001 *Canadian Forces Joint Publication 03 – Operations*, 1-3.

165 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 131.

166 Karen Davis, *Cultural Intelligence and Leadership* (Kingston: Canadian Defence Academy Press, 2009), vii.

167 Dr. Emily Spencer defines cultural intelligence as, "the ability to recognize the shared beliefs, values, attitudes, and behaviours of a group of people and, most importantly, to apply that knowledge toward a specific goal." See Dr. Emily Spencer, *Solving the People Puzzle: Cultural Intelligence and Special Operations Forces* (Toronto: Dundurn Press, 2010), 11.

168   Karen Davis, *Cultural Intelligence and Leadership*, xi.

169   Dr. Emily Spencer, and Major Tony Balasevicius, "Crucible of Success: Cultural Intelligence and the Modern Battlespace," *Canadian Military Journal* Vol. 9, No. 3 (Autumn 2009): 42.

170 Dr. Emily Spencer, *Solving the People Puzzle: Cultural Intelligence and Special Operations Forces*, 11-12.

171 Ibid., 12.

172 Bernd Horn, "Full Spectrum Leadership Challenges in Afghanistan," in *In Harm's Way – The Buck Stops Here: Senior Military Commanders on Operations* (Kingston: Canadian Defence Academy Press, 2007), 197-198.

173 Bill Bentley, "Cultural Intelligence and Strategic Culture," in *Cultural Intelligence and Leadership*, edited by Karen D. Davis, (Kingston: Canadian Defence Academy Press, 2009), 36.

174 Dr. Emily Spencer, *Solving the People Puzzle: Cultural Intelligence and Special Operations Forces*, 95.

175 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations,* 121.

176 BGen Denis Thompson, "Special Operators: Unique Skill Set in High Demand," *Vanguard*, Issue 3, April/May 2011; <http://www.vanguardcanada.com/SpecialOperatorsThompson>, accessed 23 March 2012.

177 Tom Clancy, *Special Forces: A Guided Tour of U.S. Army Special Forces* (New York: Berkley Books, 2001), xv.

178 William H. McRaven, *Spec Ops: Case Studies in Special Operations Warfare* (Novato: Presidio, 1995), 391.

179 Daniel Klaidman, "Obama's Secret Army," *Newsweek Magazine,* February 27, 2012, 33.

180 Tom Clancy, *Special Forces: A Guided Tour of U.S. Army Special Forces*, xvii.

181 Bernd Horn, "When Cultures Collide: The Conventional Military/ SOF Chasm," in *Casting Light on the Shadows: Canadian Perspectives on*

Special Operations Forces (Kingston: Canadian Defence Academy Press, 2007), 135-136.

182 John M. Collins, "Special Operations Forces in Peacetime," *Joint Forces Quarterly*, No. 21 (Spring, 1999), 56.

183 BGen D. Michael Day, and Col Bernd Horn, "Canadian Special Operations Command: The Maturation of a National Capability," 70-72.

184 David Tucker, and Christopher J. Lamb, *United States Special Operations Forces* (New York: Columbia University Press, 2007), 103.

185 Ibid., 51.

186 Tom Clancy, *Special Forces: A Guided Tour of U.S. Army Special Forces*, xv.

187 Allan D. English, *Command & Control of Canadian Aerospace Forces: Conceptual Foundations*, ed. Canadian Forces Aerospace Warfare Centre Production Section (Canada: Government of Canada, 2008), 1.

188 Department of National Defence, A-PA-005-000/AP-001 *Duty with Honour: The Profession of Arms in Canada* (Kingston: Canadian Defence Academy, 2009), 17.

189 Defence researchers Ross Pigeau and Carol McCann define "competency" as the skills and abilities required by military members to accomplish their mission successfully. They believe that the competencies fall into four categories: "Physical, intellectual, emotional and interpersonal, which are significant in delineating command capability." Pigeau and McCann define "authority" as the dimension that gives a commander his/her power to act, and the scope and resources required to fulfill the mission. Command authority is derived from the power that is assigned to an individual and that which the individual earns through credibility. Finally, Pigeau and McCann define "responsibility" as the dimension in which "...an individual accepts the legal and moral liability that corresponds to their command." See Ross Pigeau, and Carol McCann,

"Re-Conceptualizing Command and Control," *Canadian Military Journal* Vol. 3, No. 1 (Spring, 2002): 58-60.

190 Ross Pigeau, and Carol McCann, "Re-Conceptualizing Command and Control," 58.

191 Department of National Defence, B-GJ-005-000/FP-001 *Canadian Forces Joint Publication 01 – Canadian Military Doctrine*, 5-2.

192 Department of National Defence, B-GJ-300-000/FP-001 *Canadian Forces Joint Publication 03 – Operations*, 3-1.

193 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 21.

194 NATO defines joint operations as those in which elements of at least two services take part and they define combined operations as those in which elements of two or more nations participate. Integrated operations are a more recent and more challenging concept to define. Retired U.S. Gen Richard D. Downie attempted to do so in a recent *Joint Forces Quarterly* article. In an attempt to bring greater precision to describing the various operations taking place within the complexity of the COE, Gen Downie defined integrated operations as those operations in which multiple "services, Federal agencies, allies and their governmental agencies, corporations, and nongovernmental organizations must cooperate to meet the full spectrum of military operations, from peacekeeping to battle to the transition to a lasting peace." See Richard D. Downie, "Defining Integrated Operations," *Joint Forces Quarterly* No. 38 (July 2005): 10-13.

195 Martin Van Creveld, *Command in War*, (Cambridge: Harvard University Press, 1985), 1.

196 David S. Alberts, "Agility, Focus, and Convergence: The Future of Command and Control," *The International C2 Journal* Vol. 1, No. 1 (2007): 1-2.

197 Ross Pigeau and Carol McCann, "Re-Conceptualizing Command and Control," 53.

198 The CF has adopted a philosophy of mission command, which "basically relies on a clear understanding of the commander's intent to co-ordinate the actions of subordinate commanders and which thereby allows them maximum of freedom of action in how they accomplish their missions. Mission command has its origins in the German Army concept of *Auftragstaktik*, and is often contrasted with a command style which relies more on procedural direction and control." See Department of National Defence, A-PA-005-000/AP-004 *Leadership in the Canadian Forces: Conceptual Foundations* (Kingston: Canadian Defence Academy, 2005), 131.

199 Department of National Defence, B-GJ-005-000/FP-001 *Canadian Forces Joint Publication 01 – Canadian Military Doctrine*, 5-1.

200 Ibid.

201 Daniel Gosselin, "The Loss of Mission Command for Canadian Expeditionary Operations: A Casualty of Modern Conflict?" in *The Operational Art: Canadian Perspectives – Leadership and Command*, ed. Alan English. (Kingston: Canadian Defence Academy Press, 2006), 194.

202 John Sviokla, "Bring Power to the Edge," *Harvard Business Review* [Blog Online]; available from <http://blogs.hbr.org/sviokla/2009/05/bringing_power_to_the_edge.html>, accessed 10 February, 2012.

203 Martin Van Creveld, *Command in War*, 268-270.

204 Ibid., 271.

205 Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 270.

206 Ibid., 272.

207   Thomas J. Czerwinski, "Command and Control at the Crossroads," *Parameters* Vol. 26, No. 3 (Autumn 1996): 123.

208   Ibid., 124.

209   Edward A. Smith, *Complexity, Networking and Effect-Based Approaches to Operations*, 268.

210   David S. Alberts, and Richard E. Hayes, *Power to the Edge: Command... Control... in the Information Age*, 60.

211   David S. Alberts, "Agility, Focus, and Convergence: The Future of Command and Control," 23.

212   David S. Alberts, and Richard E. Hayes, *Power to the Edge: Command... Control... in the Information Age*, 127-128.

213   Colonel J.F. Cottingham, "Effects-Based Operations: An Evolving Revolution," in *Effects-Based Approaches to Operations: Canadian Perspectives*, ed. Allan English and Howard Coombs (Ottawa: Department of National Defence, 2008), 48.

214   Smith, Complexity, *Networking and Effect-Based Approaches to Operations*, 98-99.

215   Ibid.

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