DEVELOPING CREATIVE LEADERS: UNDERSTANDING INNOVATION WITHIN THE PROFESSION OF ARMS

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Executive Summary

In the Information Age, there are existential threats created by emergent domains that will bridge multiple previously unrelated disciplines. Emergent domains and capabilities, unique to the Information Age, have created an interconnected global environment that has shattered previously conceived "stove pipes" of a State's organizational responsibilities. Government departments of global affairs, commerce and defence are brought closer together as their responsibilities begin to intermix and become dependent upon each other's actions. In this new reality, creativity is a necessary capability that will help envision an unexplored and unknown future societal construct. We don't know exactly what a futuristic information saturated environment behaves like, nor could we comprehend an economical system driven by machine learning. These future possibilities are as foreign to our reality as would be the idea of social media having a direct impact on politics to someone from the 1990s. We find ourselves on the precipice of a monumental social, economic and political transformation without the ability to peer over the edge to see what awaits us. It may be the first occasion where society is charging towards a phenomenon that it knows will alter it's very core values, rather than trying to slow down the effects of change.

As military forces become increasingly aware of the reality that they are losing their monopoly on the use of force on behalf of the State, there will be a movement towards more creative approaches to affirm their jurisdiction in the future. In order to understand how creativity could be integrated and utilized in a profession founded and reliant on structure, organization and conformity, it is important to analyze where, and in what context that it might be helpful. This paper deconstructs the various definitions and qualities of creativity, then uses the "Learning

Organization" model as a framework to identify where and how creativity can be developed within the "Profession of Arms". Research and case studies that outline the benefits and challenges derived from this cognitive quality are used to reinforce the central component of a Learning Organization — personal mastery. Through understanding and building of mental models, open dialogue, intrinsic motivation and a shared organization vision, there is a better comprehension of how creativity can compliment the responsibilities of the profession.

Modern militaries find themselves in a unique situation with the introduction of these new domains, disciplines, and systems that skirt and intersect a number of existing specialties. The increased interest of other actors, both political and corporate, to participate in what was once a monopoly on the management of force towards existential treats will force a dynamic shift in philosophy. In order to secure the interest of the profession, the military professional must deepen their understanding of the unique elements of their societal service in order to defend its jurisdiction.

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Introduction

The qualities associated with creativity are not the first to be conjured in the minds of those studying the concepts of National Defence and Security. The ideas typically associated with defence organizations, such as the military, are those of deductive reasoning, conservative conformity and results driven productivity. These ideologies are a stark contrast to those of the creative mind; they can be viewed as the antithesis to divergent thinking, inductive reasoning and fostering self-expression. With such polarizing perspectives, it seems futile to search for a bridge to merge these two worlds together — said the deductive reasoned.

In a briefing to the students of the Joint Command and Staff Programme (JCSP) 45 at the Canadian Forces College (CFC), General Vance, Chief of Defence Staff (CDS), said "*I am surrounded by extremely intelligent people at the Strategic level, what I need increasingly more of is creativity.*" He went on to describe the challenges being introduced by the changing security environment, the development of emerging capabilities and the complexities that they introduce. The Information Age has given way to an era defined by social media, Big Data, Cyber and others, which have created a constellation of challenges to the orthodox convictions of defence and security of democratic States. These emergent capabilities give the illusion of shrinking the physical space between State-borders and even bridge the span of oceans. Where Canada, once espoused the notion of "...a fireproof house, far from inflammable materials."[1], it is now faced with the reality that it is no longer isolated from the remainder of the world by its physical barriers. As aptly pointed out in a recent issue of Global Brief, "*...unlike at Confederation,*

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[1] Robert Bothwell, "The Canadian Isolationist Tradition," *International Journal* 54, no. 1 (1999): 1, doi:10.1177/002070209905400106.

Canada has not one or two, but four essential borders this century..."[2]. When faced with the prospect of an abstract future, where conventional practices of a military's management of force may not be sufficient, creativity is a commodity that has the potential to provide the answers needed.

In light of the existential restraints of the institution placed on allowing creative cognition to develop in contemporary military organizations, how much organizational creativity and adaptation could the Canadian Armed Forces (CAF) put in place in order to manage the development of the emergent challenges discussed above? The research and practices discovered through Learning Organizations concerning creative tension, intrinsic motivation, and shared vision can increase CAF creativity, providing the institutional restraints of stringent hierarchical structure and risk adverse leadership are molded with the ideals of collective contribution, personal mastery, mentoring, and constructive motivation.

In an era that has been defined by an increased potency of asymmetric security threats, and emerging capabilities that have the potential to alter socio-cultural norms, militaries are struggling to maintain their footing in their profession. This paper seeks to outline the importance of developing creativity within a Profession of Arms through the application of training, education, and leadership in order to adapt to future existential challenges. This will be accomplished through analyzing the impact of the Information Age by way of review of the inception of Cyber as a domain, grey-zone operations and Hybrid Warfare, and how these ideas are redefining military conceptual thinking of its societal service and its placement in

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[2] Irvin Studin, "An Open Letter to Justin Trudeau : Global Brief," 21, accessed February 18, 2019, http://globalbrief.ca/blog/2018/10/30/an-open-letter-to-justin-trudeau/.

organizational interdependencies. Working with the model of a Learning Organization[3], and using studies on developing creativity in education and corporations, the concepts and characteristics of creativity development will be explored.

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[3] Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization*, Rev. and updated (New York: Doubleday/Currency, 2006).

Background

In order to be able to assess the qualitative benefits of developing creativity within a profession that is founded on traditions, discipline and conformity, it is imperative to better understand the profession itself. The following are the concepts that apply to the development of creativity in the context of the Profession of Arms. Certain definitions may differ from other readings on creativity as the context in which they are used alters one's perception. Moreover, terms such as "creativity" and "profession" have more fluid definitions that are moulded to the environment being discussed. It is therefore important to understand the meaning and use of these terms as they apply to this thesis.

The Reborn Impetus

The terms "creativity" and "innovation" are not unique to the information age, militaries have used "genius minds" in every transformational era of the past. The invention of the Chariot permitted Egypt to rise to become a world power. The introduction of saddle stirrups allowed for the introduction of heavy cavalry in Europe during the middle ages.[4] More recently Germany used submarines, or U-Boats to control the Atlantic Ocean during World War I. However, in recent years they have become renewed concepts of interest in both the private and public sectors. While the requirement for this particular form of human resource has typically mirrored the historical ebbs and flows of change in economic, social and political evolutions, the current movement has generated an abnormally high degree of global demand for this capability.[5] The

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[4] Kallie Szczepanski, "Who Invented the Saddle Stirrup?," *ThoughtCo*, accessed April 15, 2019, https://www.thoughtco.com/invention-of-the-stirrup-195161.

[5] Gerard J. Puccio et al., "Creativity on Demand: Historical Approaches and Future Trends," *AI EDAM* 24, no. 2 (2010): 153, doi:10.1017/S0890060410000028.

emphasis placed on the need for imaginative thinkers in this age of information and "Big Data" is a result of the social-cultural transformation that defines this very era. It is well appreciated in developed societies that the influence of information, access to knowledge and evolution of technology has never been as prevalent and influential as they are presently. Social media, cyber security and identity protection are just a few of the new areas of concern that are reshaping our societal construct; how we communicate, gain knowledge, educate ourselves and, ultimately, how we make decisions.[6]

These emergent areas are redefining our understanding of security and how Canada must move away from the idea that it is isolated and insulated from motivations of State and non-state actors.[7] Considering the overwhelming implications of Russian influence in the 2016 US election,[8] the proposed non-state involvement in the Paris "Yellow Vest" movement,[9] or even the advent of corporate targeted advertising based on "Big Data" collection, it is clear that borders are no longer distant and impenetrable as they were once perceived to be. These changes in socio-political and socio-economic areas have not only forced corporations and governments to adapt to how they function, it has also necessitated the need to re-evaluate defence training requirements.[10] In order to adapt to these increasingly complex and dynamic threats, western militaries are mostly focusing on tactical skills, however there is also some movement towards

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[6] Charles Edward White, *The Enlightened Soldier: Scharnhorst and the Militärische Gesellschaft in Berlin, 1801-1805* (New York: Praeger, 1989), 45.

[7] Bothwell, "The Canadian Isolationist Tradition."

[8] Mike O'Brien, "How the Military Is Training Next Generation Cyber Warfare Officers," *IDGA*, April 26, 2013, https://www.idga.org/government-defense-it-communications/news/how-the-military-is-training-next-generation-cyber.

[9] John Lichfield, "Why Are France's Yellow Jackets so Angry?," *POLITICO*, December 14, 2018, https://www.politico.eu/article/why-are-france-yellow-jackets-so-angry-fuel-tax-emmanuel-macron/.

[10] O'Brien, "How the Military Is Training Next Generation Cyber Warfare Officers."

more conceptual capability development such as Design Thinking, understanding Hybrid

Warfare and whole-of-government approach.[11] [12] [13]

These focuses on conceptual capabilities share a common field of expertise —they all rely

heavily on various characteristics of creativity. Design Thinking is defined as "an iterative

process in which we seek to understand the user, challenge assumptions, and redefine problems

in an attempt to identify alternative strategies and solutions that might not be instantly apparent

with our initial level of understanding.".[14] Hybrid Warfare is simply the creative application of

ancient practices of diversion, coercion and information warfare, magnified by the capabilities

inherent to the modern era.[15] Whereas Canada's "whole-of-government" approach was the

realization that military operations are no longer capable to act independently in defence,

security and political objectives. There is now a clear need for collaborative efforts through

every stage of military operations.[16] These movements towards more esoteric ways of thinking

are both symptoms and evidence of change in how militaries will operate in the near future.

China, Russia and non-state actors are experienced in this area, and thanks to the increased

societal capability of information sharing, they have been able to study and exploit these newly

defined weaknesses in how western countries and alliances such as NATO have created a

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[11] "Design Thinking Comes to the U.S. Army," *Design Observer*, accessed March 16, 2019, http://designobserver.com/feature/design-thinking-comes-to-the-us-army/13478.

[12] "Operating in the Gray Zone: An Alternative Paradigm for U.S. Military Strategy," accessed April 16, 2019, https://ssi.armywarcollege.edu/pubs/display.cfm?pubID=1318.

[13] Department of National Defence Government of Canada and National Defence Government of Canada, "Developing a Comprehensive Approach to Canadian Forces Operations," accessed April 16, 2019, http://www.journal.forces.gc.ca/vo9/no1/04-leslie-eng.asp.

[14] Rikke Dam and Teo Siang, "What Is Design Thinking and Why Is It So Popular?," *The Interaction Design Foundation*, accessed March 16, 2019, https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular.

[15] Sebastien Roblin, "The Russian New Warfare Doctrine Has the Army Worried Enough to Make a Manual About It," Text, *The National Interest*, (February 11, 2018), https://nationalinterest.org/blog/the-buzz/the-russian-militarys-new-warfare-doctrine-has-the-army-24439.

[16] Government of Canada and Government of Canada, "Developing a Comprehensive Approach to Canadian Forces Operations."

dependency on conventional military deterrence. In order to survive in future definitions of a "battle space", militaries and their political overseers must be prepared to adapt, innovate and design new norms of operation. All of which will require the development of individual creativity and innovation management.

Emergent Capabilities

The concept of emergent capabilities is more apparent to the casual observer when explained through examples of the changing socio-cultural norms brought on by the Information Age. This period of transition between a post-industrial age and a new period where information has become the economic driving force, denotes a cultural shift as foreign to individuals as was the advent of powered machinery at the turn of the nineteenth-century. While these cultural shifts are not being caused by completely new ideas, it is the incarnation of old ideas with new tool-sets that make these capabilities worth future study. Society is only beginning to map out the philosophical and cultural pathways that connect our new views of a world founded on this distribution of information — an era aptly framed by its debut through the Information Technology Revolution. Moreover, the generations that have been borne into the Information Age, have developed a sense of familiarity with their environment that may provide a false sense of security of its stability. They may view themselves as natural citizens and practitioners of the tools and benefits that this age brings, without realizing the speed at which this age has the potential to evolve. To truly appreciate the volatility of socio-cultural transformation, we need to "*...understand where we are in the life cycle of the information economy, and how much longer it*

will last.".[17] A question that far exceeds the aim of this paper, however provides the context to better understand the developing construct of challenges that test the jurisdictional and procedural practices of this profession.

Society is struggling to understand how to cope with complicated products of the Information Age. Seemingly productive and benevolent intended inventions have created unpredictable cultural and social order changes. Social-media is one of the more apparent examples of an invention that spawned these unintended consequences. Consider the popular social-media website Facebook, created by Mark Zuckerberg and co-founded with his college roommates; Eduardo Saverin, Andrew McCollum, Dustin Moskovitz, and Chris Hughes. The intent of this platform had an altruistic start, expected to link communities and promote discussion — depicted by Zuckerberg as "...*Facebook was ultimately a force for social good by enabling discussion…*".[18] However, as the site became woven into the fabric of society's methods of communication, it quickly exposed a vulnerability in how we collectively respond to popular opinion and our naive willingness to accept them as factual, a vulnerability that was quickly leveraged by other States and organizations through various influential campaigns across multiple networks, intended to affect the 2016 United States election. Zuckerberg himself admitted his ignorance of these unintended consequences, something that can also be attributed to the majority of all citizens and even elected officials of democratic societies, given the collective shock that the world felt once this attack was uncovered. After society wrestled with its new unpleasant reality, that it had created its own Trojan Horse, Zuckerberg accepted

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[17] Stan Davis, "Beyond the Information Age," *Optimize; Manhasset*, December 2002, http://search.proquest.com/docview/205222087/abstract/EE3945F71B5E4CB6PQ/1.

[18] Kathleen Chaykowski, "Zuckerberg Defends Facebook's Role In Election But 'Regrets' Dismissing Impact Of Fake News," *Forbes*, accessed February 24, 2019, https://www.forbes.com/sites/kathleenchaykowski/2017/09/27/zuckerberg-defends-facebooks-role-in-election-but-regrets-dismissing-impact-of-fake-news/.

Facebook's unintended involvement and solidified a new social truth. "*After the election, I made a comment that I thought the idea misinformation on Facebook changed the outcome of the election was a crazy idea... Calling that crazy was dismissive and I regret it. This is too important an issue to be dismissive.*"[19] While this campaign clearly targeted the sovereignty of a State and falls squarely into the idea of National Security and Defence, the military is not the sole actor in this battlefield, nor is it always considered to be the leader. While militaries enjoy a monopoly of control in the physical arenas, the digital world is shared with political, bureaucratic and civilian actors with competing interests, and that is at times indistinguishable from the enemy force.

Authors, such as Manuel Costells, have been labelled philosophers and theorists of this modern age. They are attempting to untangle the complexities of this unknown environment, and more importantly they seek to understand how current cultures might evolve to survive within it. As Costells indicated, "*the term informational indicates attributes of a specific form of social organization in which information generation, processing and transmission become the fundamental sources of productivity and power.*".[20] The very attempt to untangle the semantics and definitions to help understand this environment is crucial to developing our common understanding. In *Cyber Insecurity*, the authors reinforce this notion of exploratory assessment of these environments.[21] One of the more visual analogies used by the authors, depicts the settler-like state that society is now confronted with; "...*we can only partially comprehend and map the unknown. We do so by relying on reports filtering back from scattered settlements and from*

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[19] Ibid

[20] Manuel Castells and Manuel Castells, *The Rise of the Network Society*, Information Age, v. 1 (Malden, Mass: Blackwell Publishers, 1996), 21.

[21] Richard M. Harrison and Trey Herr, eds., *Cyber Insecurity: Navigating the Perils of the next Information Age* (Lanham: Rowman & Littlefield, 2016).

explorers who tell, sometimes inaccurately, where some trails lead."[22] As pioneers of the Information Age, society's greatest tool to explore a chaotic and unfamiliar landscape will be to turn to the creative mind. To rely on existing mental models, those intuitive perceptions that we use to rationalize how things work, and use them to explain and provide transformational guidance that will navigate the institution through new unchartered waters.

Cyber Space

In this new and foreign world, businesses, organizations and governments seek to understand how they will continue to operate in an environment with tools that become antiquated with the slightest passage of time. It is now a commonly accepted norm in these fields of emergent capabilities that States have an overwhelming desire to explore and develop this map, as every turn creates an unknown number of complications in our current concepts of National Security.[23] Cyber Space is one of those areas, where defence and security organizations, both private and public, are feverishly attempting of comprehend and operate in an ever-evolving reality. The very idea of a new domain, as is the debate when trying to categorize Cyber Space, is a complex notion to comprehend on its own.

National interests in most, if not all, democratic societies have a renewed interest in the definitions and their understanding of National Security and Defence thanks to the evolution of this emergent capability. While the advent of new technology at the debut of the Information Age was specifically targeted at improving security, research and exploration; somewhere along the way these fields lost dominant control over technological innovation. When the "explorers"

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[22] Ibid, 10.
[23] Ibid, 11

were few in number and patriots to national priorities, the pace of exploration was anticipated and sequential. Today, we are faced with the reality that "explorers" are self-made and unbound by professional attributions. They crash through multiple fronts of the unexplored expanse, without sense of collective direction nor an established pace. The speed of these breakthroughs has now exceeded the institution's decision making abilities to comprehend and develop the necessary legislative frameworks to contend with the various unintended effects. The once considered loyal technological expert is now as likely to discover new capabilities that can degrade, rather than strengthen, National Security.[24]

While businesses have been quick to recognize the importance to develop and control an integrated percentage of creativity, government organizations are more resistant to this function. With the fast paced and untamable development of Cyberspace, some of the more successful companies have constructed a creative branch that feeds into the productivity of the organization.

Grey-zone and Hybrid Operations

The idea of "Grey-zone Operations" is not a new one; however it has developed a unique flavour and undeniable importance within the Information Age. This title describes the tension and space between nations in a time of peace, where influence is a state-craft that is aimed at effects normally reserved for military application. The idea of influencing peer or near-peer States in time of peace was possible prior to the Information Age, however their reach, speed and effectiveness could not compare to more recent events. It is not difficult in the modern era to view the effectiveness of Russia's influence in Ukraine, NATO's defensive Information Operation in the Baltic region, or even the United States' recent attempts to influence peers

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[24] Harrison and Herr, *Cyber Insecurity*, 10.

politically in Israel. "*The grey-zone is a metaphorical state of being between war and peace, where an aggressor aims to reap either political or territorial gains associated with overt military aggression without crossing the threshold of open warfare with a powerful adversary.*"[25]

Western military organizations have adopted terminology of "Phase 0" to identify the "shaping" objectives needed to operate in this "Grey-zone". It has become clear to these military planners that there now exists a pre-operational imperative of activities that requires a longer lead time to accomplish. Functions related to intelligence gathering, civil-military relations and influencing campaigns have gained heightened importance towards operational success of today's complex and diverse missions. The dilemma that military organizations of democratic States face is the legal authority to act prior to the public declaration of an intended mission. In order for typical democracies to conduct operations, the alliance and governmental approvals are complex and necessary, however once granted the political ambition fuels the imperative for progress and productivity, leaving little room for Phase 0 operations. Conversely, these military organizations lack the authority to conduct any significant actions prior to being granted political direction. This "catch twenty-two" that limits modern militaries to be proactive is a tether from the principles of the Profession of Arms.

The Norwegian Institute of International Affairs published a comprehensive review of current studies to try to create a baseline of understanding of what Hybrid Warfare is, and is not. The document published under the Multinational Capability Development Campaign (MCDC) 2016-17 did not define the term, however it provided the context to better describe it. An apt quote

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[25] "Between War and Peace: Grey-Zone Operations in Asia - AIIA," *Australian Institute of International Affairs*, accessed February 24, 2019, http://www.internationalaffairs.org.au/australianoutlook/paramilitaries-grey-zone-operations-asia/.

from the Introduction of this documents covers the disparity of an agreed international understanding; "*The international consensus on 'hybrid warfare' is clear: no one understands it, but everyone, including NATO and the European Union, agrees it is a problem.*"[26] The same authors describe Hybrid warfare as "*the synchronized use of multiple instruments of power tailored to specific vulnerabilities across the full spectrum of societal functions to achieve synergistic effects*".[27]

As its name implies, Hybrid Warfare is the combined and coordinated application of military, political, economic, civilian and informational (MPECI) instruments of power in order to achieve a near-war-like result. A recent example of this reinvented aggressive action is Russia's interventions in Ukraine starting in 2014 and continuing to present day. Russia has long declared that countries who fell under the control of the Union of Soviet Socialist Republics (USSR) long to return to the "Mother State". Russia's motivation to alter the delicate balance between peace and security has been likened to their desire to regain political influence on the world stage. Ukraine is an ideal testing ground for Russia given its slower economic growth and hesitation to gravitate towards NATO as Poland did immediately following the collapse of the USSR. Russia has employed a number of deception tactics, from claiming that troops mistakenly entered Ukrainian borders, Cyber attacks on the power grid and "fake news" campaigns that led to riots and chemical spraying around schools. This asymmetric coordinated use of an array of socio-political powers has become the new near-war aggression that western societies must now contend with.

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[26] Patrick Cullen and Erik Reichborn-Kjennerud, "Understanding Hybrid Warfare," n.d., 3, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/647776/dar_mcdc _hybrid_warfare.pdf.
[27] Cullen and Reichborn-Kjennerud, "Understanding Hybrid Warfare."

NATO countries are most affected by this targeted aggression and non-military actions aimed at achieving political goals. The ambitious application of Hybrid Warfare is largely employed by state and non-state actors that have a sense of being constrained by the large alliance of nations that are not aligned with their own ideologies.[28] Some of the more notable and transformative attempts at expanding the application for Hybrid Warfare have been made in recent years from Russia's calculated plans at regaining control over previously annexed states to the USSR. NATO nations are at a disadvantage for counteracting the application of Hybrid Warfare tactics as current policy and working culture are based on concepts of deterrence. Since the application of Hybrid Warfare is accomplished through non-conventional means, and can focus on an array of strategic vulnerabilities, traditional deterrence strategies do not present the necessary solutions needed in this new asymmetric environment. The use of misinformation, propaganda and other Cyber tactics cannot be met by the application of conventional military powers, and political actions have also proven to have little effect in countering these new aggressive actions. NATO countries are struggling to find new capabilities and practices that will ensure civilian security, stability and confidence threatened by the acts of other state and non-state actors employing these tactics to further their agendas in plain sight of the world stage.[29] The evaluation of conventional national defence mental models requires to be dissected, rearranged and reconstructed into new strategic processes that are adapted to this new threat. However, the process of cultural shift is an arduous and complicated endeavour that is more reactive than planned. It seems inevitable that the risk to public security in contested areas will remain, and require to be accepted during this culture-transformation process. This is due to the lengthy process of allowing ingenuity to develop naturally and progress the deliberate evolution of policy

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[28] Erik Reichborn-Kjennerud and Patrick Cullen, "What Is Hybrid Warfare?," accessed February 24, 2019, https://brage.bibsys.no/xmlui/handle/11250/2380867.

[29] Ibid.

and working culture. Alternatively, NATO nations can choose to implement innovative

management frameworks to target and develop creative solutions that would expedite the manner

in which a State or Alliance of states would respond to future Hybrid Warfare threats.

Threats vs potential

There is no lack of quotes from military generals that explain their concern, "*what keeps them up

at night*", pointing to the speed and complexity of the asymmetrical challenges that face

militaries today. One of the more succinct viewpoints on this subject was given by General

Martin Dempsey of the US Army and then chairman of the Joint Chiefs of Staff:

> "It's the most dangerous period in my lifetime. In my 41 years of military
>
> experience, we often had the opportunity to focus on one security threat or
>
> another. First it was all about the Soviet Union, then it was peacekeeping, then it
>
> was terrorism. Now we've got lots of things cropping up at the same time. We
>
> have multiple challenges competing for finite resources—and grotesque
>
> uncertainty with regard to the military budget."[30]

The idea that western military forces face an ever-increasing multitude of concurrent challenges

has been evident for a number of years. This fact, coupled with the reality that resources

available to militaries are directly linked to public opinion on security, western militaries are ill-

positioned to keep up with the demands created by emergent capabilities. The increasing access

to information, connective influence of social media and the global availability of advanced

technology have not only improved society, they have also created fertile ground for the growth

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[30] "Notes From the Chairman: A Conversation With Martin Dempsey," *Foreign Affairs; New York*, October 2016, http://search.proquest.com/docview/1815343054/abstract/9A04B36E72334B23PQ/1.

and spread of ideas from any motivated individual. Governments will not only need to assess the increase of threats, they will also need to determine what levels and branches of it's collective capabilities will be charged with each unique and convergent or divergent threat. Designing new modes of interoperability between governmental organizations, and interconnectivity between macro (national political) and meso (operational organizational) levels will be crucial to ensuring effectiveness.[31]

Creativity

"*what sets us apart from all other species is our collective creativity, something that is innate in each of us and shared by every one of us*".[32]

To better understand creativity it is important to consider it as a cognitive capability, best described as a divergent thinking process, providing unique perspectives and outcomes. A psychiatric research paper defined creativity as: "...*the ability that allows the production of new or unusual associations among known ideas or concepts.*"[33]. As highlighted in this research, it is important to acknowledge that creativity, as a cognitive process, is of little use without a wealth of existing knowledge on which to draw upon. The idea, that creativity is amplified by a wealth of knowledge, was repeated in various forms from every article and paper reviewed through the research for this paper, even those who caution the over-reliance on creativity have identified this same correlation. This idea is central to better understand how the complex abstraction of

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[31] David H. Cropley, James C. Kaufman, and Arthur J. Cropley, "Measuring Creativity for Innovation Management," *Journal of Technology Management & Innovation* 6, no. 3 (August 22, 2011): 2, doi:10.4067/S0718-27242011000300002.

[32] Florida, *Rise of the Creative Class--Revisited*, chap. 1.

[33] Antonio Preti and Paola Miotto, "The Contribution of Psychiatry to the Study of Creativity: Implications for AI Research.," 2019.

creativity, normally seen as a genetic aptitude, can be improved, elaborated and ultimately

trained in all persons regardless of their start point.

> "Education provides exposure to a variety of experiences, viewpoints, and
>
> knowledge bases, reinforces the use of experimentation and divergent problem
>
> solving skills, and develops individuals cognitively so that they are more likely to
>
> use multiple and diverse perspectives and more complicated schemas"[34]

Creativity also does not belong to the theory of multiple intelligences created by Howard

Gardner[35], nor the more generic definitions of intelligence. Studies have explored the common

conceived link between creativity and intelligence and have found that, while there is certainly a

positive relationship between the two factors, it cannot be described as one of causation. In one

such study, measuring creativity in subjects did show a requirement for a minimum level of

intellectual ability, however higher intellect did not correspond to greater creative capability.[36]

The study did however show marked improvements in the creative products with increased

knowledge on the subject at hand. Other studies confirm the benefit of a depth in knowledge to

the creative process, and expand this concept to include the benefit of also having a breadth of

knowledge in a variety of subjects, not just those of the subject at hand.[37] These studies expose

fundamental facts about developing creativity; it is a trainable cognitive capability, its

effectiveness improves through higher levels of knowledge, and it cannot be recognized in

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[34] Christina E Shalley and Lucy L Gilson, "What Leaders Need to Know: A Review of Social and Contextual Factors That Can Foster or Hinder Creativity," *The Leadership Quarterly* 15, no. 1 (February 1, 2004): 33–53, doi:10.1016/j.leaqua.2003.12.004.

[35] Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (New York: Basic Books, 2011), http://public.eblib.com/choice/publicfullrecord.aspx?p=665795.

[36] Donald W. Mackinnon, "The Nature and Nurture of Creative Talent," *American Psychologist* 17, no. 7 (1962): 10, doi:10.1037/h0046541.

[37] Shalley and Gilson, "What Leaders Need to Know," 4.

individuals using socially accepted biases of intelligence. "*Creativity depends upon more than intelligence: it involves personality factors in respect to the individual and domain*".[38]

While there exists no holistic definition of creativity that seems to satisfy all interested parties, there are a number of characteristics that are commonly used to describe it. One of the more inclusive list has been condensed in a study of testing models used to evaluate creative capability, see Table 1-1.[39] The convergence of the many testing models developed since the mid-twentieth century, provides for a categorized list of creativity characteristics divided across four groupings; Product, Process, Motivation and Abilities. In his research, Arthur Crowley discovered that these traditional evaluations were dependent on domain experts and highly susceptible to subjectivity of judgments. He advocates that the requirement for an effective assessment process of creativity can facilitate product innovation, however it must be an intuitive process to be of value to the organization. Within the CAF, a tool of this function can assist significantly with talent management and the identification of the requirements for innovative management.

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[38] Gardner, *Frames of Mind*, chap. Introduction.

[39] Arthur J. Cropley, "Defining and Measuring Creativity: Are Creativity Tests Worth Using?," *Roeper Review* 23, no. 2 (2000): 7, doi:10.1080/02783190009554069.

Product	Process	Motivation	Personality/abilities
Originality	"Uncensored" perception and encoding of information	Goal-directedness	Active imagination
Relevance		Fascination for a task or area	Flexibility
Usefulness	Fluency of ideas	Resistance to premature closure	Curiosity
Complexity	Problem recognition and construction		Independence
Understandability		Risk-taking	Acceptance of own differentness
Pleasantness	Unusual combination of ideas	Preference for asymmetry	
Elegance	Construction of broad categories	Willingness to ask many (unusual) questions	Tolerance for ambiguity
			Trust in own senses
	Recognizing solutions	Willingness to display results	Openness to subconscious material
	Transformation and reconstruction of ideas	Willingness to consult others	Ability to work on several ideas simultaneously
	Seeing implications	Desire to go beyond the conventional	Ability to reconstruct problems
	Elaborating and expanding ideas		Ability to abstract from the concrete
	Self-directed evaluation of ideas		

Creativity and Innovation

Colloquially, the terms of creativity and innovation are conflated regularly, interchanged and used in general discussion as descriptors. However, when considering the precision required to identify, assess and develop creativity in order to effectively manage innovation within a profession, a clear and accurate definition of these terms is necessary.

As discussed in the previous section, creativity is that cognitive process of repackaging knowledge into new ideas and products. The Oxford dictionary defines creativity as "involving

the use of imagination or original ideas to create something", whereas innovation is defined as the process to "make changes in something established, especially by introducing new ideas, or products.". Where creativity is a trait or characteristic of an individual, innovation is broader and reflects the introduction of creative products which can be attributed to the work of an individual or group. "innovation—the process of applying creativity to generate new and valuable ideas, products and processes."[40] This distinction is a crucial one, as it outlines that an organization can both foster creativity within its personnel and identify the level, placement and quantity of innovation required for productivity. This leads to the categorization of creativity as belonging to the function of talent management, whereas innovation belongs to the management of the institution, discussed later as "innovation management". Separating the development of creativity as human capital from the identification of innovative requirements, provides organizations with two fronts of exploration and potential gains.

These two groups seem to share an intrinsic, yet chaotic link; meaning the changes in one of the areas will likely have a significant, yet unpredictable effect on the other. The study of this relationship remains in its infancy, it is evident that further research is needed to understand the causal or correlational relationship between these organizational management responsibilities. Until research has fully explained this relationship, it is crucial for organizations to be aware of the impacts and carefully craft expectations in both groups in order to better coordinate efforts. Gathering observations from such planned contributions to creativity and innovation development can further assist in identifying their impact within a specific organizational structure.

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[40] David Cropley and Arthur Cropley, "Engineering Creativity: A Systems Concept of Functional Creativity" (Lawrence Erlbaum Associates Publishers., 2005), 169–85.

Creativity vs Productivity

"There is a fundamental tension between productivity and creativity, and managers won't get more of the latter until they recognize it."[41]

One of the more pertinent aspects of creative development for the military is its impact on productivity. The Profession of Arms is normally seen as an institution of traditional measures of productivity that evaluates its members against these metric; developing conscientious team focused members. Images of a military profession do not naturally overlay well onto the the more liberal and casual environments seen in today's high-tech companies. Creative workplaces such as those found at Google's head office, encourage employee distractions and incentivize creative outputs. Google executives understand that innovative products are materialized through developing creative skills, by providing the flexibility and opportunity for divergent thinking to occur.

It is difficult to argue with Google's success as a company in today's global economy, especially once it became the world's most valuable company in 2016.[42] For a company who has no significant physical products, and depends primarily on its advertising platform to measure success, it is understandable why creativity and innovation are highly valued in this organization. It's very existence is a virtual one, dependent and susceptible to the volatile world created by the Information Age discussed earlier. In order for this company to continue to subsist, it must be open to a breadth of new ideas and directions in order to remain viable. Yet, the world's most

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[41] Art Markman, "To Get More Creative, Become Less Productive," *Harvard Business Review*, November 30, 2015, https://hbr.org/2015/11/to-get-more-creative-become-less-productive.

[42] Brian Solomon, "Google Passed Apple As The World's Most Valuable Company (Again)," *Forbes*, accessed May 4, 2019, https://www.forbes.com/sites/briansolomon/2016/05/12/google-passed-apple-as-the-worlds-most-valuable-company-again/.

valuable company that exists in the digital realm, may not be the most objective comparison to the service provided by militaries. There are advantages to having endless resources and the ability to experiment with concepts that do not rely on any measurement of productivity, something that is more difficult when the service provided is one of managed force. Governments are not likely to entertain ideations of military power based solely on ingenuity and a lack of measurable outcomes. However, there may be opportunities to compartmentalize an "innovative engine" within more productive-centric organizations. Lessons learned from observing corporations with the luxury to explore creative development and innovation management holistically, can be repackaged and moulded to energize productivity and efficiency in any organization.

While productivity is found to be at odds with promoting innovation, there is room for both to exist within the organization. A study by Draugiem Group found that 17 minute breaks every 52 minutes allowed for the highest level of productivity and creative thought to occur simultaneously. Other examples of how this productivity and creativity dichotomy can be bridged through an organizational learning environment will be discussed in the following chapters.

Professionalism

While the topic of professionalism seems, at first, to be very distant from the concept of creativity, through research it was found that they are in fact intrinsically linked. The Profession of Arms and the fostering of creativity, both share a fundamental building block of a depth and breadth of knowledge. Moreover, the idea of a "profession," a service to society, is founded on the concept of mastery of the skills and craft, while creativity is dependent on the concept of

personal mastery. As will be discussed in Chapter One, "personal mastery" assumes a diverse knowledge foundation in order to enable the collective potential of an organization and begin to create innovative products. It is therefore critical to a profession and the development of creativity that a targeted personal mastery be operationalized in order to construct the foundation of knowledge that fuels innovation and allows for the mastery of the domains applicable to the Profession of Arms. "*Professional development is a cumulative process, with members acquiring the necessary professional qualifications, identity and understanding over time. The common body of knowledge that unifies all members of the profession must be mastered over a member's career.*"[43]

Although the CAF only formally stated its claim as a profession in recent years, it has cause to argue that it has long practiced the characteristics of this title. In asserting its claim as a profession, the CAF accepted the responsibility to uphold the standards and attributes that now define it. As a profession, it has the responsibility to provide a service to society, to maintain its identity and to ensure expertise in its field of service. It is on the latter responsibility that the quality of creativity is most apparent. The practice of expertise is derived from a unique skillset, particular only to the profession, which requires a unique application of knowledge — a process which can benefit greatly from creativity. Throughout this paper, the themes of the "synthesis of knowledge", "knowledge blocks" and "the application of knowledge" will serve as a bridge to understand the critical, yet not exclusive, role that creativity plays in the Profession of Arms.

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[43] Canada. Dept. of National Defence and Canada. Ministère de la défense nationale, "Duty with Honour: The Profession of Arms in Canada" (Ottawa: Published under the auspices of the Chief of the Defence Staff by the Canadian Defence Academy - Canadian Forces Leadership Institute, 2003), 57, http://publications.gc.ca/collections/collection_2011/dn-nd/D2-150-2003-1-eng.pdf.

The Creation of a Profession

According to Andrew Abbott, the concept of professionalization first appeared in the work of Carr-Saunders and Wilson published in 1934. The authors defined the concept of a Profession as organized groups of experts who applied esoteric knowledge. Their categorization of a profession was based on case studies of would-be professions against developed essential traits that defined its progress. This definition identifies the foundation of the term "profession" to be the application of knowledge; a personal and institutional mastery of knowledge essential to the occupation. As creative development is also reliant on the knowledge development, understanding the concept of a profession will allow deliberate injections of innovation into the organizations that prescribe to these principles.

The use of professionalism to describe the "management of violence" was thoroughly explained in Samuel Huntington's "*The Soldier and the State*". This framework of defining a military as a profession allowed for significant development in conceptual analysis for the "management of violence".[44] Huntington did however make a significant differentiation that will be separated out from the remainder of his work for the purpose of this paper. With regards to this delineation between Officers as being subject to the Profession of Arms, while "enlisted men" were not; this paper disagrees with the casual distinction of these two groupings. While this concept may rightfully had been accurate in 1964, the evolution of social expectations of all professions, including the Profession of Arms, requires that this earlier assessment be reviewed. The perspective from CWO Belanger's opinion essay, shows that there has been significant changes in this profession since the Cold War era. He rightfully identifies the complexities of the modern

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[44] Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, Mass: Belknap Press of Harvard University Press, 1964).

operational environment, and how lines of distinction, such as "Officer" and "Non-commissioned Member" (NCM), have become blurred in some aspects to our abstract definitions of profession, leadership and education. "*...in today's complex, uncertain, and volatile operational environment, NCMs require skills and understanding that extend far beyond the mere application of violence*".[45] For the purposes of this paper, the idea of profession will be left solely to the definition, as no current separation exists within the CAF that distinguishes one group from another. That said, as a matter of understanding the Profession of Arms, and ensuring that it is well defended from criticism, this topic deserves more attention than this paper can allow for. Further research and discussion is needed to ascertain how roles within the CAF may differ in the evolving Information Age.

While the fault line depicted in the "Soldier and the State" may no longer be completely applicable, there could be delineations that need to be identified. As Huntington rightfully described, there is a difference between a "professional" and a member of a profession in pursuit of a higher calling. He also describes his acceptance of other professions as subsidiaries to the Profession of Arms — vocations of their own calling, however also belonging to the Profession of Arms in association rather than practice. Examples of these are doctors, pedagogical experts, clergy leaders; members who belong to a civil profession and also to the Profession of Arms without practicing the craft of the "management of violence". In order to properly defend the validity and status of its profession, it is imperative that the institution clearly and thoroughly examines its claims, rather than being unrehearsed to defend itself from external critiques.

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[45] Necole Bélanger, *Being a Member of the Profession of Arms. A RCAF Chief Warrant Officer's Perspective*, The Government of Canada and Royal Military College Saint-Jean, 2017).

The consideration of categorization is important to the evolution of a profession and its jurisdiction, however it can be set aside when focusing only on the component of mastery. This is the section of a profession where occupational skills, specialized military knowledge and the development of military management are realized and perfected through training, education and experience. The CAF has grown very adept at developing the breadth of knowledge required to coordinate a constellation of specialties in order to manage activities that coalesce toward specific effects, which relate directly to the service it provides.

Introduction of Professionalism to the CAF

The CAF formally introduced the concept of professionalism in 2003 with the publication of "Duty with Honour". Acknowledging its declaration as a profession, the Governor General congratulated the CAF in the opening address of the accompanying summary; "*The manual and this Summary serve as a milestone for the Canadian Forces, as they mark the first instance in which the time-honoured professionalism of Canada's military has been defined fully in writing.*".[46] The purpose of this publication was a matter of "righting the ship" with the Canadian public, following the devastating fall from grace that the CAF suffered as a result of the Somalia Affair. The CAF's determination to both resolve internal ethical leadership and reassure the Canadian public was concisely outlined by the document's affirmative subtitle — "*We are Canada's Military Professionals*". The publication went on to highlight the core principle of "Ethos" as the cause for confirming the CAF as a professional organization. The theme of ethics ran thick through the document, ensuring that the message of honour was well seeded, not only

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[46] Canada. Dept. of National Defence and Canada. Ministère de la défense nationale, "Duty with Honour: The Profession of Arms in Canada" (Ottawa: Published under the auspices of the Chief of the Defence Staff by the Canadian Defence Academy - Canadian Forces Leadership Institute, 2003), http://publications.gc.ca/collections/collection_2011/dn-nd/D2-150-2003-1-eng.pdf.

in the minds of those in uniform, but also in those of the Canadian public. The public's

perception was clearly a target audience of the document, CDS General Heneault included this

idea in his opening remarks; "*The elected representatives of the people of Canada should also*

understand the manual, for it is we who decide to send the Canadian Forces into Harm's way."[47]

While the motivation for defining the idea of professionalism may have been predicated by the

desire to improve the mindset of ethos, it also had a prominent and equally important goal to

strengthen the military in all senses of the meaning of professionalism.

The definition of a profession adopted by the CAF was synthesized through a scholarly

perspective in Duty with Honour, the adapted definition was stated as:

> "A profession is an exclusive group of people who possess and apply a
>
> systematically acquired body of knowledge derived from extensive research,
>
> education, training and experience. Members of a profession have a special
>
> responsibility to fulfill their function competently and objectively for the benefit
>
> of society. Professionals are governed by a code of ethics that establishes
>
> standards of conduct while defining and regulating their work. This code of ethics
>
> is enforced by the members themselves and contains values that are widely
>
> accepted as legitimate by society at large."[48]

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[47] Canada. Dept. of National Defence and Canada. Ministère de la défense nationale, "Duty with Honour: The Profession of Arms in Canada," 3.

[48] Canada. Dept. of National Defence and Canada. Ministère de la défense nationale, "Duty with Honour: The Profession of Arms in Canada" (Ottawa: Published under the auspices of the Chief of the Defence Staff by the Canadian Defence Academy - Canadian Forces Leadership Institute, 2009), 7, http://cfc.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwbV1LSwMxEB4KXgTB-qI-2YPXbrNpks32qLUq2Iv1opclzQOFur10of33zqRdWtTLkg0hZEMmk292vi8AfZ6y7q89gVTNsmw6RbsMTihnmBU8l4VRaDHSi8gmE-OP_HWs31tQN_TtYG2Km28aIbxbVV_LiNjtjMiCPV-Vj3fUqOF3r9MuETd_z52Z0d0cg1s0-

Jurisdiction

Andrew Abbott characterizes the ecosystem that professions exist within, as critical to their continued survival. He describes it as "...*professions make up an interacting system, an ecology. Professions compete within this system, and a profession's success reflects as much the situations of its competitors and the system structure as it does the profession's own effort*".[49] The natural ecosystem of militaries belonging to democratic societies, has enjoyed a monopoly in the management of force from external threats as a function of practicality. This uncontested monopoly was caused by the clear separation of military affairs from those of politics and economics, there existed no substantial overlapping of interests from these areas of expertise. However, emergent capabilities have paved information highways bridging these areas together, where before there were only overgrown paths. Acts of espionage, deception and manipulation are no longer reserved for Fortune 500 corporations or clandestine government organizations, they can be enacted by nearly any citizen, with increasing potency and effectiveness. These bridges between once distant areas of expertise are merging common interests of defence and security. Government and military experts are now faced with the reality that defence of a State's borders through the management of force now includes the Cyber domain and the collaborative defence against information influences. These areas are certainly not monopolized through the military, they are complex challenging areas where jurisdiction and interests are shared, while not necessarily aligned. Operating in this ecosystem will require complex and creative new approaches to defining roles and responsibilities for all parties.

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Clq9O4HBYL1YJBVqTz3mFa-
YUOqOHt_unLvZSbuI2ZRwXP4MDQ7nu1SJy4lwHEhlIJl67TCkrghYF59ZZpnSwuu-L4hzaf_q5-
KfuEvbX_0YooHAFewEXvL-On3IT5-AHfXZ6tw.

[49] Andrew Delano Abbott, *The System of Professions: An Essay on the Division of Expert Labor* (Chicago: University of Chicago Press, 1988), 33.

As this requirement to adapt to the changing environment of defence and security increases at a seemingly exponential rate, militaries will require to better understand the evolved service that their profession provides. In these overlapping fields, the idea of practicing esoteric knowledge will not be possible; in fact some corporations may begin to excel in certain areas and challenge military expertise. Abbott identified this professional susceptibility to change, he stated that "*A profession is always vulnerable to change in the objective character of its central task*."[50] While Abbott could not have predicted that the central task of defence of a State could ever be conceived as shared between military and bureaucratic professions, that convergence has become a reality. Recently the Globe and Mail published an article exposing this very tension in Canada, it said: "*Canadian cybersecurity companies are paying keen attention to an ongoing review of Ottawa's procurement process, anxious to see whether the review will help hasten the protracted system and make military contracts more accessible for small domestic cyber businesses*."[51] As these avenues of threat affect diplomatic, military and bureaucratic interests equally, and with overlapping consequences, militaries will need to become creatively proactive in redefining their central task. Understanding and accepting the new reality, that other actors will now be present in what used to be considered a monopoly in its field of expertise will allow for a progressive transition to the future of national defence and security.

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[50] Ibid., 39.

[51] "Canadian Cybersecurity Firms Hope Federal Procurement Review Speeds up Process," accessed April 18, 2019, https://www.theglobeandmail.com/business/small-business/managing/article-canadian-cybersecurity-firms-hope-federal-procurement-review-speeds-up/.

Chapter one: Personal Mastery and Innovative Products

There are two ways of looking at current affairs within the area of national defence, while the consensus that there is an increasing need for innovative products —which greatly depends on fostering creativity. However, before considering these perspectives, it is important to define a common start point of what society, and by extension the Profession of Arms, are faced with in terms of complex interrelated societal changes. In "Great Man or Great Myth" the author describes the current global landscape as:

> "modern societies are faced with a rapid rate of change in areas of biotechnological (e.g., communications, health), environmental (e.g., global warming, gene modified crops), industrial (e.g., offshore manufacturing, globalization), demographic (e.g., breakdown of the family, ageing of the population), social (e.g., adaptation of immigrants, integration of minorities), and political (e.g., terrorism, achieving fairness in international relations)."[52]

This statement highlights a common thread of thought described in the previous chapter. Whether studying the composition of a profession, the various emergent capabilities or the need for more focused innovation in all domains, authors agree that the future is faced with an increasing rate of change. The need for creativity can therefore be viewed as either an intrinsic need for advancing innovative products and solutions to navigate the required changes in society, or to develop capable leaders with the depth of character needed to guide the institution. More

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[52] David Cropley and Arthur Cropley, "Engineering Creativity: A Systems Concept of Functional Creativity" (Lawrence Erlbaum Associates Publishers., 2005), 169–85.

specifically, it clearly highlights a new and complex interweaving of multiple disciplines that will require not only creative capability, it will also necessitate a depth and breadth of knowledge far more inclusive of other domains than ever expected.

As previously discussed, a greater depth and breadth of knowledge can increase individual creativity and innovative products. The linkage between knowledge and creativity is also highlighted throughout the model of the Learning Organization, which identifies the benefits of personal mastery to organizational efficiency and the ability to adapt to change. Therefore, organizations that create an environment that promotes personal mastery, simultaneously invest in the collective creative potential. The learning organization model provides several criteria for developing personal mastery, three of which will be reviewed in depth for the purpose of this paper; creative tension, motivation and shared vision.

Developing Personal Mastery within a Hierarchical Environment

"Our traditional hierarchical organizations are not designed to provide for people's higher order needs, self-respect and self-actualization."[53]

Peter Senge describes the concept of personal mastery in terms of developing characteristics of the individual, as the organization can only become a learning one once its personnel have developed their own potential. He notes that people who achieve a high level of personal mastery are very much aware of their own growth areas and are therefore in a continuous state of learning. They are committed to understanding reality more clearly, and seeing reality from different perspectives as an empathetic observer. It is in achieving this level of a love for self-

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[53] Senge, *The Fifth Discipline*, 125.

improvement that the life-long learner can achieve impressive goals through self-actualization. The organization that creates an environment to foster personal mastery will not only improve the individual, it can drive innovative production and create engines of change. However, in order to achieve this goal, organizations must first identify, understand and contend with their inherent limitations.

There exists a common bias that considers hierarchy as the antithesis to creativity. The regimented, competitive and linear flow of ideas within a hierarchical environment can quickly stifle creativity that originates from the centre or lower rungs in an organization's structure. Management faces a number of competing motivations as the ideas are diffused through each level; they must understand the idea and its importance to the specialty in question, weigh it against other priorities and assess available resources. While management will reasonably struggle in understanding the tactical novelty and application that make ideas important within each domain, every hierarchical level increases in uncertainty and general ignorance to the benefits that the ideas might provide. As the ideas rise in the hierarchy of decision making, leaders may not have the authority or confidence to seek clarification and approve the idea, thereby increasing the possibility of vetoing the idea as it rises within the organization.[54]

Within a military culture, this shared preconception is evermore pronounced, as its hierarchy is not only responsible for decision making in favour of productivity, it also provides for the assurance of mission success, even in the face of harm or death to individuals. Moreover, military budgeting is highly dependent on the state of security felt by the population. Societies at peace tend to put less emphasis on military spending, which leads to political decisions to reduce

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[54] "Why Hierarchy Stifles Creativity," *Psychology Today*, accessed March 23, 2019, http://www.psychologytoday.com/blog/creative-leadership/201403/why-hierarchy-stifles-creativity.

defence spending. Simultaneously, society also develops an aversion to troop casualties, and then place as higher importance on troop safety than mission success. This reduction of resources and aversion to risk, eventually translates into a greater hesitation to entertain novel ideas and understanding the intended applicability in favour of managing more immediately apparent productivity concerns. In these times, military leadership tends to gravitate towards the "sensing-judging" personality traits rather than the "intuitive thinker".[55] For these reasons the military hierarchy is more susceptible to the constraints that limit innovative products. David Bohm's statement that "*there is no place in dialogue for the principles of authority and hierarchy*"[56] reinforces the assertion that creativity, a cognitive process dependent on the flow of ideas, becomes asphyxiated in this pool of hierarchy. While these limitations have a detrimental effect on developing communication and related cognitive traits, they do not need to limit the creation of a more tolerant and inclusive organization, even when hierarchy is integral to its very existence.

Hierarchy is a critical component to the Profession of Arms, it belongs to the military virtues of ordered power, combined with discipline, strength and steadfastness. Samuel Huntington argues that without these virtues, the Profession of Arms may revert to a war-like state, driven by "*...love of violence, glory, and adventure...*".[57] In truth, militaries have depended on the idea of authority and hierarchy far before the classification of the Profession of Arms. It must always be kept at the forefront that a military may wield less influential power than that found in corporations and politics, however their leaders hold a far higher responsibility; the life of their

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[55] Mark Moyar, "Opinion | An Officer and a Creative Man," *The New York Times*, December 19, 2009, sec. Opinion, https://www.nytimes.com/2009/12/20/opinion/20moyar.html.
[56] David Bohm, *On Dialogue*, Routledge Great Minds (London: Routledge, 2014), 49.
[57] Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations*, 19. print (Cambridge, Mass: Belknap Press, 2002), 87.

soldiers and the protection of the State. Therefore, maneuvering the development of creativity and innovation management within the framework of these virtues must be the task at hand.

In order to preserve hierarchy and foster personal mastery, the focus starts with shaping the environment in a way that compliments both. Research into the Learning Organization model, first introduced by Peter Senge, identified that "*There is nothing more important to an individual committed to his or her own growth than a supportive environment.*".[58] This idea was not only core to the Learning Organization model, it was also prevalent in research on learning and development of knowledge that will be discussed in this chapter. Since creativity is seen as a form of tacit knowledge, or a cognitive capability that is difficult to codify and disseminate to others, it largely relies on providing the right environmental conditions to allow it to flourish. Peter Senge suggests that an environment which provides for personal mastery will allow, and encourage the self-development of creative tension, motivation and shared vision.

Creative and Emotional Tension

"*Every block of stone has a statue inside it and it is the task of the sculptor to discover it.*"[59]

Michelangelo di Lodovico Buonarroti Simoni

Personal Mastery is defined by Peter Senge as a discipline of continually clarifying and deepening personal vision, while maintaining an objective view of reality. Carol Dweck

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[58] Senge, *The Fifth Discipline*, 158.

[59] Nils Parker, "The Angel in the Marble," *Nils Parker*, July 9, 2013, https://medium.com/@nilsaparker/the-angel-in-the-marble-f7aa43f333dc.

describes her view through the term "growth mindset", described as the people who are intrinsically motivated to learn, develop and regularly challenge themselves.[60] In both these ideas it is the motivation, drive and grit of individuals that is sought to be increased and focused on the organization's goals. One of the critical components to developing this characteristic is the need to identify the existing creative tension or establish the conditions to allow it to unfold naturally.

The idea of creative tension was first described as "structural tension" by theorist Robert Fritz in his book *The path of Least Resistance*.[61] He posits that structural tension is the foundation to planning and implementing success in all decision models, it is the delta between our creative vision and current reality. He describes the process as the "*dynamic of structure that causes energy to move along the path of least resistance.*"[62] An analogy used to describe this tension, is the idea of stretching an elastic band between two points; one point is the future vision, while the other is current reality. Stretching the elastic beyond its physical properties (the organization's capacity for change) will damage or break it, while not providing enough tension (a complacent vision) will create lost opportunity.

Peter Senge re-emphasizes the importance of this existing tension and how it is applicable to personal mastery. He equates the tension as motivation towards achieving personal goals, where the elastic force pulls reality towards the vision. The act of determining the end state, setting it solidly, and influencing our current reality to shift towards what we desire to create. This creative orientation is dependent on the ability to not only conceive of future possibilities, but to also have the courage to hold fast, despite the emotional tension that pulls us in the other

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[60]Carol S Dweck, *Mindset: The New Psychology of Success*, 2016, chap. 1.

[61] Robert Fritz, *The Path of Least Resistance for Managers* (Newfane, VT: Newfane Press, 2011), chap. 2.

[62] Ibid.

direction. In order to better understand what moves people to either end of this tension spectrum, it is necessary to look into motivational theories as they apply to creative tension. The theories of self-determination and self-efficacy are pointed out as key component to personal motivation that ensures the creative tension is maintained.[63] These theories will be explored in the following section "Motivation".

The antithesis of creative tension is emotional tension. It is the opposition force that reduces expectations and allows a vision to regress towards current reality. It is the erosion of self-determination and self-efficacy by the negative emotional state that dictates the necessity to cope with fears of the surrounding environment.[64] While all individuals are more than capable to generate their own fears of failure, inadequacy and self-doubt, the organizational environment can also promote these fears through actions that do not support a shared vision or permit for the development of personal mastery. Organizations that have competitive performance evaluations, poor or negative feedback, and limit autonomy, normally generate significant learning inhibitors that leads to a sense of survivability rather than commitment. In a state of survivability, whether it is the survival of the organization or the individual, there is little room for a vision to coexist. Without a clear vision, motivation succumbs to anxiety and personal mastery is suffocated by the conditions of the environment. In this way, the motivation that holds a vision firm can be weakened or reinforced by the environmental conditions present in the organization.

Peter Senge warns about the close relation of emotional tension to that of creative tension and to ensure that leaders do not confuse the two. He suggests that "negative" emotional responses can

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[63]Edward D. Hess, *Learn or Die: Using Science to Build a Leading-Edge Learning Organization* (New York: Columbia Business School Publishing, 2014), 39.

[64] Ibid., 45.

be generated from the existence of creative tension; fear, anxiety, helplessness and despair can all exist if the vision is perceived to be too far from reality. The danger with allowing emotional tension to exist undetected and unchecked is that it predisposes the organization and its members to lower the vision.[65] All individuals have a different tolerance for the strain caused by creative tension, leadership is key to understand and cope with these limitations.

Edward Hess provides a more detailed review of the effects of the emotions responses on learning, he uses Daniel Kahneman's theory of system one and system two thinking to highlight the cognitive motivation process.[66] The theory of our dual cognitive system divides our processes into the immediate reaction versus the more deliberate and thorough review of evidence. Dr. Kahneman describes the two processes as:

"• System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control.

• System 2 allocates attention to the effortful mental activities that demand it, including complex computations. The operations of System 2 are often associated with the subjective experience of agency, choice, and concentration."[67]

In "*Learn or Die*" this theory is used to explain how our learned emotional responses, gathered through life-experiences, are used by our system one protocol to protect our own self-image. Edward Hess suggests that humans naturally apply confirmation-biased learning tactics when faced with a situation of cognitive dissonance. That is to say, when an individual is confronted

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[65] Senge, *The Fifth Discipline*, 136.
[66] Hess, *Learn or Die*, 11.
[67] Daniel Kahneman, *Thinking, Fast and Slow* (Toronto: Doubleday Canada, 2011), 26, https://www.overdrive.com/search?q=20947F5B-F6A1-4CA7-B332-F46D587A0F8A.

with polarizing facts to their current mental models, the tendency is to rationalize the information until it conforms to an acceptable degree to our current belief. Leaders must be aware of this existing precondition of their "*judgments, conclusions, opinions, and beliefs and subject them to testing against evidence or data*".[68]

Another precursor to the exacerbation of emotional tension is the natural defence against fear. Edward Hess describes our response to fear as "ego-defence" mechanisms to protect us from the way we perceive ourselves. In situation where fear of failure, criticism and embarrassment has perceived potential to flourish, it is the ego that will protect the individual. Personnel must not only be encouraged to learn through their mistakes, they must feel open and safe to explore failures without the threat of judgments. He contends that a learning organization must allow for both a safe environment and enable its employees to diffuse their personal ego defence mechanisms. Organizations that promote individual performance rather than group creativity and effort, run the risk of creating an environment that is overly competitive with an end state of institutionalizing individuals and stifling creativity.[69]

The dichotomy between encouraging creative tension and maintaining the criteria of jurisdiction within the Profession of Arms is a critical one. Military culture has been ingrained with the understanding that self-governing is critical to its existence, the military justice system is founded on this very understanding. While not all practices of developing creativity will fit within this environment, Chapter two explores implementation practices of this risk-permissive environment without hindering military jurisdiction.

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[68] Hess, *Learn or Die*, 11.

[69] Richard Florida, *Rise of the Creative Class--Revisited: Revised and Expanded.* (New York: Basic Books, 2014), chap. 2, http://public.eblib.com/choice/publicfullrecord.aspx?p=894939&entityid=urn:mace:eduserv.org.uk:athens:provider:liv.ac.uk.

Motivation

"If you think you can or you can't, you're right"[70] *Henry Ford*

In order to develop a learning culture, we must first understand how people are motivated. The well-known ideas of intrinsic and extrinsic motivations can create a dangerous dichotomy on their own, which causes the desire to generalize capabilities and class individuals into fixed groups of binary usefulness. While managers tend to look for individual attributes that they believe identify intrinsic characteristics, leaders look to develop intrinsic motivation through calculated and thoughtful application of mentoring practices. The next chapter looks into the methods to transform extrinsic to intrinsic motivation, while this next section aims to explain the continuum of motivation. Understanding an individual's current personal motivation can enable leaders to promote and align individual goals to those of the organization.

The theory of self-determination was constructed from the research of Richard Ryan and Edward Deci. The aim of this research was to understand inherent individual growth tendencies; they proposed that intrinsic and extrinsic motivations are derived from the needs of competence, relatedness and autonomy. While intrinsic motivations are the qualities that are highly sought after by all organizations, they explain that motivation doesn't always start from the intrinsic state; however they can eventually be modeled to that end-state.

Extrinsic motivations are developed throughout childhood's teaching moments, as a norm of societal expectations of desired behaviour — don't do that, but do this and you are rewarded. While a child is naturally predisposed to experiment, learn and explore, the applied social

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[70] "If You Think You Can Or You Can't You're Right | Wanderlust Worker," accessed March 27, 2019, https://www.wanderlustworker.com/if-you-think-you-can-or-you-cant-youre-right/.

functions to develop desired behaviour, necessitate limitations and conformity for practical reasons. The consequence of conforming behavior, is that it also limits that naturally occurring intrigue from the child's mind, the inquisitive sense that knows no bounds and is driven by unfeattered motivation to learn.

Extrinsic motivations are generated from a sense of obligation to perform activities for a desired outcome. Deriving motivation from an external source has the potential to move behaviour from unwillingness to passive compliance, the point where individuals accept the presented vision but have no commitment other than assisting as needed. Given the proper environment, compliance can also be converted to active enrollment, where members not only participate in the solution, they also contribute to developing the vision. Richard Ryan and Edward Deci describe intrinsic motivation as "*prototypic manifestation of the human tendency toward learning and creativity*". This is the motivation that independently solidifies a vision and enables the maximization of creative tension within an organization. Through their research, it seems evident that the development of these motivations towards a shared vision, is the greatest assurance to collective innovative production. However, if intrinsic motivation is not aligned with the shared vision, the resultant tension could generate conflict of priorities and functions.[71]

Through their research of each component, Ryan and Deci affirmed that environmental factors such as planned development of efficacy, positive expectations and encouraged autonomy show greater success in creating internalization of extrinsic motivations. Developing self-determination is the deliberate and calculated measure of ensuring the individual has the

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[71] Richard M. Ryan and Edward L. Deci, "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being.," *American Psychologist* 55, no. 1 (20000301): 68, doi:10.1037/0003-066X.55.1.68.

requisite capability and preparedness to adopt the socially accepted activity and demonstrate competence. Positive expectations have a significant effect on individuals who are motivated and prompted. They are more likely to internalize behaviours if they feel supported and appreciated by those who share a sense of relatedness. Finally, encouraging autonomy has been shown to internalize extrinsic motivation providing the presence of competence for the task at hand.[72]

Self-efficacy is a theory developed by Albert Bandura, which proposes that an individual's belief in their abilities to influence events directly affects their motivation. The greater the sense of efficacy, the more individuals can understand and manage perceived threats rather than succumb to anxiety due to a lack of confidence in personal efficacy. He theorizes that "*beliefs regulate human functioning in four major ways: cognitive, motivational, emotional, and selection processes*."[73] Cognitive motivation is the visualization of anticipated actions and the development of potential outcomes, creating reassurance of one's capabilities. Emotional motivations involve the dichotomy of arousal or anxiety reactions to the perception of capabilities. Whereas the selection process covers the acceptance or avoidance of a situation based on perceived self-efficacy.[74]

This research purports that a detailed understanding of employee's self-efficacy considerations can be instrumental in developing a learning culture. A leader can participate in the member's conceptualization of challenges, dampen anxiety development and promote acceptance perspectives through active mentorship. This process requires invested leaders, individuals who are committed in developing self-efficacy characteristics of their employees.

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[72] Ibid.

[73] Albert Bandura, "Self-Efficacy," in *The Corsini Encyclopedia of Psychology* (American Cancer Society, 2010), 1534, doi:10.1002/9780470479216.corpsy0836.

[74] Bandura, "Self-Efficacy."

Albert Bandura's assertion that the "*stronger the perceived self-efficacy, the more effective people are in their analytic thinking and in devising successful courses of action*", is directly related to the development of creativity if properly coached. Individually, people have the responsibility to self-identify their own cognitive preparedness, steer towards arousal while avoiding anxiety, and ensure that tasks are selected within the range of their capabilities. However, the organizational leadership also has the ability to reinforce and build on these characteristics, while simultaneously aligning individual motivation to the goals of the organization. Similarly, Richard Ryan and Edward Deci's research provides another layer of leadership opportunity to promote individual growth tendencies. While others consider that these theories provide for a selection criteria for management driven hiring practices,[75] a concept derived from the work of Jim Collins where he identified the need to get "*the right people on the bus*", others consider them as leadership shaping tools. A review of the original research reveals that the authors consider leadership as critical to molding motivation, a concept that was certainly a key tenet in the Learning Organization model. Peter Senge provides clear expectations that leadership is needed to be present in order to build a learning culture, not to simply select the people who demonstrate the current talents desired.

Shared Vision

"*Active and attentive participation is an opportunity to enhance your vision and to shape the future.*"[76]

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[75] Hess, *Learn or Die*.

[76] Peter F. Drucker and James C. Collins, *The Five Most Important Questions You Will Ever Ask about Your Organization*, New ed. ([New York] : San Francisco: Leader to Leader Institute ; Jossey-Bass, 2008), 84.

Military organizations are well adept at developing vision statements for Units, Formations and even for the core of their Profession of Arms — those belonging to the defence ethics programmes. The CAF is no exception, its leadership is well practiced in developing its own vision and mission statements, including one for its ethics programme established since 1997.[77] These motivational statements are sometimes looked poorly on by those more focused on productivity than the management of semantics, however there is a clear benefit in ensuring that the organization has a focused view of its own destiny. Setting an azimuth is worth the effort, Peter Drucker emphasizes this idea; "*If a vision statement — whether a sentence or a page — helps bring the plan to life, by all means include it*".[78] Clearly the CAF has ingrained this philosophy within its culture, continually creating a common purpose that binds people together and navigates the organization towards an identified future viewpoint. However, it is important to understand the difference between a vision dictated by leadership or one created by the galvanization of a crisis, to those visions created by the collective unification of individual perspectives. Creating a shared vision is critical to moving individual commitment from a state of compliance, those who participate and do what is expected, to one of enrollment, individuals who are invested towards the identified goals.[79] A shared vision is the only opportunity that members of an organization get to participate in designing the possible future, it is a cornerstone to building creativity.

Commitment to a shared vision provides a higher level of dedication, where personnel aspire to the identified sense of commonality because they participated in its creation. Peter Senge

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[77] National Defence Government of Canada, "Defence Ethics Programme | DND CAF," February 19, 2013, http://www.forces.gc.ca/en/about/defence-ethics.page.

[78] Drucker and Collins, *The Five Most Important Questions You Will Ever Ask about Your Organization*, 70.

[79] Senge, *The Fifth Discipline*, chap. 3.

describes this significance as the difference between people who are told to excel and learn, contrasted against those who simply want to. Shared visions are not the same as the vision statement proudly posted in the lobby or on the organization's website, they are dynamic and evolving views of the organization. Peter Drucker describes vision as "*A picture of an organization's future.*".[80] He goes further to explain its importance in managing motivation, "*You will expand your vision by listening to your customers, by encouraging constructive dissent, by looking at the sweeping transformation taking place in society*".[81] This statement keenly links the idea of a rapidly changing societal environment, discussed at the beginning of this chapter, to the importance of being attentive and self-critical in developing a shared vision.

A shared vision is intended to move away from the styles of leadership dependent purely on control, those that evoke a sense of compliance in the best of circumstances. The leadership style found to be most aligned with the ideas covered by Peter Senge's model, are those found in the principles of transformational leadership. The views on openness, inclusiveness and attentiveness are critical to the CAF's definition of effective leadership and correspond aptly to the requirements of a learning organization's shared vision.[82] In order to achieve these goals, leaders require a more evolved mode of communication then is normally seen in hierarchical organizations. To truly develop a commonality of understanding, a proper dialogue is essential.

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[80] Drucker and Collins, *The Five Most Important Questions You Will Ever Ask about Your Organization*, 100.

[81] Drucker and Collins, *The Five Most Important Questions You Will Ever Ask about Your Organization*, 5.

[82] Alan Charles Okros and Canadian Forces Leadership Institute, "Leadership in the Canadian Military Context" (Ottawa, Ont.: Canadian Forces Leadership Institute, 2010), 43, http://crl.defence.gov.au/ADC/Docs/CDLE/CDLE_120329_OkrosA2010LeadershipintheCanadianMilitaryContext.pdf.

Dialogue allows for viewpoints to be shared and heard on all sides, while taking the time to

confirm or change mental models and come to an agreed state of understanding.[83]

Transformational leadership aligns well to the idea of a more open and participatory environment

that generates the commonality discussed in developing a learning organization. The leadership

style was first brought to the CAF through the "*Conceptual Foundation*" publication, which uses

political scientist, James MacGregor Burn's definition; "*moral agents, whose efforts are directed*

toward the realization of important social values and principles.". Effectively, the CAF views

this leadership style as the ability to mold perceptions and create a path for social change.[84] A

function of change that is focused on the ability to shape how personnel view the future of the

organization and their place within it. This raises the question; if the CAF have already

integrated a leadership style that is aligned with the concept of shared vision development, why

are they so uncommon? The answer may lay in the tension created between a desire to enable the

characteristics of Transformational Leadership, and the cultural realities of a contemporary and

heavy hierarchical organization.

The qualities of transformational leadership were covered well in "*Conceptual Foundations*",

they include behaviours such as;

> "They exemplify personal, sometimes self-sacrificing, commitment to the mission
>
> and their ethical ideals (idealized or facilitative influence).

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[83] Bohm, *On Dialogue*.

[84] Canada. Dept. of National Defence, "Leadership in the Canadian Forces: Conceptual Foundations" (Ottawa: Published under the auspices of the Chief of the Defence Staff by the Canadian Defence Academy, Canadian Forces Leadership Institute, 2005), 68, http://publications.gc.ca/collections/collection_2013/dn-nd/D2-313-2-2005-eng.pdf.

They stimulate the thinking of their subordinates and encourage innovation and creativity (achievement-oriented influence).

They take time to explain the meaning and importance of subordinates' tasks in relation to superordinate goals (rational-persuasive influence).

They exhibit optimism and use inspirational appeals that arouse emotions or evoke important individual and group values (emotional-persuasive influence).

They provide individualized consideration of the social, emotional, and developmental needs of their subordinates (supportive influence)."[85]

These behaviours differ significantly from those of the more authoritarian leadership styles that focus more on the directive and control influences. These qualities incorporate the ideology that is necessary to create a shared vision within the organization. Moreover, research also indicates that while moving along the spectrum, away from authoritarian behaviours towards more inclusive ones, a subordinate's latitude for direction will also increase.[86] Therefore, Transformational Leadership not only enables the development of shared vision, it also improves the opportunity for dialogue to take root.

Moving an organization from one centred around a Transactional Leadership style to a more liberal and empathetic one requires a deliberate shift in cultural norms — one that is not achieved without significant effort. Bernard Bass wrote about this cultural shift, he highlighted that a move towards Transformational Leadership was required when *"problems, rapid changes, and*

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[85] Canada. Dept. of National Defence, "Leadership in the Canadian Forces: Conceptual Foundations," 68.
[86] Ibid., 65.

uncertainties call for a flexible organization with determined leaders who can inspire employees to participate enthusiastically in team efforts and share in organizational goals."[87] The Transformational Leadership style was more liberally explained in "*Transforming Leadership*", linking leadership with the cognitive capability of creativity. James MacGregor Burns describes this transforming mindset as moving away from the tendency of "*exercising power over people, transforming leaders champion and inspire followers*.".[88] This view of empowering the individuals of an organization towards a shared vision, will enable creativity to flourish from all corners of the organization. Despite the doctrinal acceptance within the CAF to move towards instilling Transformational Leadership within the organization, there are environmental and cultural limitations that must be addressed in order to attain the inclusive leadership depicted by these authors. Methods to overcome the institutional limitations will be discussed in the subsequent chapter.

Another enabler to developing a shared organizational vision is the process of encouraging dialogue at all levels, as has been alluded to. Dialogue differs in definition from communicating, as defined by David Bohm in "*On Dialogue*", communicating is a means to make knowledge and ideas common to others, while a dialogue is the contribution of thoughts in order to create something new. This concept of dialogue fits well into the model of a Learning Organization, it relies on unpacking current ideas, or mental models, and repurposing them to be combined with others. This process bares a striking similarity to the definition of creativity discussed in Chapter one, in that the product of dialogue is the association of known ideas to create something new or unusual. The subtle difference is that dialogue is the collaborative process of creativity and not

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[87] Bernard M. Bass, "From Transactional to Transformational Leadership: Learning to Share the Vision," *Organizational Dynamics* 18, no. 3 (1990): 31, doi:10.1016/0090-2616(90)90061-S.

[88] James MacGregor Burns, *Transforming Leadership: A New Pursuit of Happiness* (New York: Grove Press, 2003), 25.

only an individual cognitive effort. For this reason, dialogue can be a powerful motivator to innovative management, providing that it can be attained.

Dialogue in not a natural process, humans are judgmental and cognitively impatient creatures, which makes active listening an effort rather than the standard. David Bohm asks us to remember the last intellectually stimulating conversation we had, then recall how we felt as the other participant unveiled their logic — chances are we heard the first part and then interrupted with our salient counter argument.[89] Edward Hess describes this as cognitive boredom, a phenomenon created by the delta in speed of the a human's ability to cognitively process words at a significantly faster rate than the oral pronunciation. In essence, that nagging feeling to interrupt someone's explanation with our own piece of the equation is a result of our ability to process the words given and impose our own mental models to finish the thought.[90] Impressively, the human brain can piece together the most probable sequence of words and complete the sentence before the speaker has finished dictating their ideas. While this is an aspiring feet of human capability, it is a significant hindrance to the practice of dialogue.

In order to attain a forum of dialogue, David Bohm theorizes that we need to accept our cognitive biases and understand our tendency to defend them. This is similar to the concept of cognitive dissonance and ego-defence discussed earlier and their application to emotional tension at the cost of creative tension. Another hindrance to dialogue is the concept of fragmentation, our natural tendency to separate ideas and give greater importance to those that are most prevalent, relevant or aligned to our current metal models. This process of thought cripples the germination of dialogue as it forms borders between our developed mental models and blocks the reception of

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[89] Bohm, *On Dialogue*, 2.
[90] Hess, *Learn or Die*, 68.

new ideas. The theories of dialogue put forth by David Bohm, contrasts well against those of knowledge development discussed earlier. Both processes share inhibitors of closed mindsets, lack of diverse thought and unsafe environments. Without reducing these limiters of knowledge development, there can be little chance for an open, inclusive and accepting environment to enable constructive creativity.

There is an easy argument to be made that creating an open dialogue in a military environment will diminish the organization's role to ensure obedience to command. That the requirement for soldier compliance is far too important to the management of force and cannot be parceled in the way that civilian organizations conduct managerial responsibilities. Understandably the Profession of Arm has a significant responsibility that is dependent on soldiers performing learned and practiced tasks without question. However, it is important to distinguish the idea of obedience to the rule of law and compliance to the authority of command, and separate it from motivation towards an agreed destiny. While compliance direction received works well for orders given and finite objectives, the opposite is true when attempting to create a common purpose and direction. In order to develop a movement of enrollment within the organization, the leadership must see past unfounded concerns of degradation in obedience. It is a leader's responsibility to articulate the difference between daily taskings and the buy-in to the future of the organization of their subordinates and ensure that expectations in both scenarios are understood.

Chapter two: Harnessing Creativity

In the previous chapter the linkage between knowledge development and creativity was highlighted through exploring the Learning Organization concepts of tension, motivation and shared vision. These are critical nodes in transforming an organization into one that is invested in personal mastery in order to cultivate innovative products. Organizations that belong to the Profession of Arms are not immune to the rapid evolution of society, however they have a unique advantage when it comes to transformation towards an innovative management construct — the profession is closely aligned with these same concepts. While it is true that hierarchy is the antithesis to creativity, there are few hierarchical organizations that can claim to have a robust interest in personnel development that could compare to that found in militaries. The CAF in particular have been on a trajectory of focusing on inclusion, diversity and education since the release of *Duty with Honour*. While the CAF still struggle in reaching it's set diversity goals for gender and visible minorities, it has also been recognized as a national leader in its efforts towards inclusiveness. "*Political momentum is growing around the world for governments to take women's inclusion and empowerment seriously, and Canada is ahead of the curve on this*"[91]

Looking at the organization with an objective mind, it can be said that the CAF have a number of the fundamental modules of a Learning Organization. It promotes education through the Canadian Armed Forces Professional Development program, has a well established Defence Ethics Program and a particular interest in attaining inclusiveness through the Canada's National Action Plan (NAP), and it established diversity goals. Despite these fundamental building blocks, why is it that the CAF appears to be in a parallel state to that of a Learning Organization

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[91] "Canada Leading the Way on Women's Inclusion and Empowerment, Says OECD - OECD," accessed April 13, 2019, http://www.oecd.org/canada/canada-leading-way-on-womens-inclusion-and-empowerment.htm.

— having similar characteristics yet not fully able to reap the benefits? The answer lies in the cultural norms remaining from a past architecture whose leadership was founded on concepts of the transactional leadership model. In an era were conventional force and common practices to single-axis threats were adequate to develop the Profession of Arms, the organization evolved its environment and leadership in lock step with this culture. While the CAF has made significant efforts as mentioned above to modify its culture, these efforts have been based on other noble causes with similar goals to developing creativity but not yet completely aligned. This chapter focuses on the excellent work carried out by the CAF in recent years and how those results can now be focused on innovation management to create a complimentary forcing function to promote all these efforts. In effect, the operationalization of creativity development can improve success in lockstep with the other strategic goals mentioned earlier.

Evolving the Environment

Hierarchical organizations provide structure, order and conformity to the approach of solving complex issues and bringing the will and force of an entire organization to bear on a focused area. This is an incredibly valuable asset when the intended effect is sure to be achieved by the known practice that the organization has used in similar situations previously. However, if the situation is known to be different or the organization is ignorant to the subtle differences which may present themselves, there is a risk of following the path of least resistance. When attempting to change aspects of the CAF's environment to better support the development of creativity, it is important to keep sight of the strengths that we do not want to lose. The current environment was created as a forcing function for transactional and authoritarian leadership to thrive, qualities that were useful to manage the predominant threats of the era. However, as the global landscape

shifts towards the unknown and the CAF identifies the need for greater creativity, flexibility and inclusiveness, aspects of the environment must be changed to facilitate this transformation.

The environment described in this section refers to the behaviours that are deemed acceptable within the organization, and the cultural norms that currently exist and limit creativity to develop naturally. Creativity has been shown to flourish when there is an environment that is accepting of low stress, diversity and safety of sharing thoughts. Visiting a military base does not exactly conjure up these thoughts, rather they are viewed as centers of work, performance and productivity. Google and other high-tech companies combat this deprivation of creativity by having flexible hours, relaxed dress-code, diverse population and an absence of traditional work stations.[92] The result is a stark contrast to a military base, people in sandals and casual clothing, sitting in a variety of styles of furniture and enjoying personal reading or even the included games room for some distracted thought. At first glance, some would say that the bridge between these two worlds is far too large of an expanse to cover; however they would have neglected to accept the commonality between these divergent poles — the people. As discussed previously, creativity is a transient quality innate to all humans, it only needs the right environment to develop. While the military unit turning into a Google creative lab is an unrealistic goal, it is the attainable goals that can have the greatest impact.

The first question to ask when considering innovative management is to what degree the organization is in need of creative solutions and products. A unit with a set mandate and no foreseeable need to change is either in continuous state of productivity or in danger of becoming

[92] Alison Coleman, "Is Google's Model of the Creative Workplace the Future of the Office?," *The Guardian*, February 11, 2016, sec. Guardian Careers, https://www.theguardian.com/careers/2016/feb/11/is-googles-model-of-the-creative-workplace-the-future-of-the-office.

obsolete. A proper vision exploration is key to defining the direction that the organization should take within the immediate future. This exploration should follow the concepts of a shared vision statement development discussed earlier. Using a collaborative approach and significant reflection of the service that the organization provides and considering how that might change in the face of emerging capabilities will set a clear shared vision. Once the shared vision is agreed upon, then management can determine what parts of the organization will be charged with the responsibility to be the "engines of change" for the organization. Alternatively, management can also chose to create rewards for creativity applied to the angle identified by the vision. Either way, management is responsible to provide the opportunity and motivation to frame the creative tension needed.

Once the creative tension is established, the environment must allow for development of self-efficacy. The flexibility provided by Google is an interesting comparison for work environment adaption. Google showed a significant increase in creativity through "20% time" initiative, allowing employees to take one day off per year for "blue sky thinking".[93] This movement allows for the development of a personal vision that is inline with the previously agreed to shared vision. By ensuring personnel are committed to the shared vision, time spent considering their role in the process of change will inherently provide for the opportunity to develop a personal vision. Members will naturally develop plans to actualize their vision and seek out mentorship and potential educational challenges to feed their new found passion. Fortunately the military has a tool that provides for this flexibility to compensate for long hours worked, conduct personal

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[93] Lucy Hooker Vaswani Karishma, "How Did Google Become the World's Most Valuable Company?," February 1, 2016, sec. Business, https://www.bbc.com/news/business-35460398.

business or rewarding exemplary work — short leave.[94] The cultural barrier that must be addressed in this case, is the habit of withholding this leave benefit for exceptional rewards only and begin using it to invoke dedication. While there have certainly been Commanding Officers that have been more generous than others in their authority to award this subjective leave benefit, there have not yet been any studies in a CAF context of its effects on morale, dedication, creative development and personal mastery. Notwithstanding the lack of CAF specific studies, the benefits of this initiative at Google have been reinforced throughout the organization for their measured benefits to the world's most valuable company.[95]

Another foundational aspect of providing a creative environment is one of diversity. Providing the opportunity for individuals of various backgrounds to jostle amongst each other and create intelectual sparks is a forcing function for creativity.[96] Peter Senge mentions the importance of diversity in thought and ideas to promote a Learning Organization, allowing diversity in perspectives and thoughts is to be encouraged and not stifled. The CAF has a few barriers to diversity; first is the lack of diverse people (ethnicity, gender, language…), second is rewarding excellence in military achievements and finally there is the formal attire with ranks to separate classes of thinkers.

While the CAF is motivated to address its current poor representation of the diversity found in Canadian society, the current reality is that it has very few persons with differing perspectives to draw on. Moreover, it's abundance of white-male members promotes the possibility of a group-

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[94]National Defence, "Leave Policy," policies, *Aem*, (May 29, 2013), sec. 9.1.01, https://www.canada.ca/en/department-national-defence/corporate/policies-standards/leave-policy-manual.html#chap9.
[95] Vaswani, "How Did Google Become the World's Most Valuable Company?"
[96] Florida, *Rise of the Creative Class--Revisited*, chap. 2.

think perspective that can dominate discussions unintentionally. The CAF is to be commended for being a national leader in its commitment to inclusiveness and for meeting its obligations under the UNSCR 1325. Figure 1-1 identifies Canada's commitment as a leading nation in defining its National Action Plan early in the process and reaffirming that commitment again in 2017.[97] In 2018 the Government of Canada published its Progress Report for Canada's National Action Plan 2017–2022. The report indicated that the CAF's "Dare to be extraordinary" advertising campaign yielded a recruitment of women two percent over the current composition, established a Gender Based Analysis plus (GBA+) Joint Responsibility Centre, and made GBA+ online introduction course mandatory for all staff.[98] While these goals and accomplishments are instrumental in leading the CAF to a more diverse and inclusive future, there is much work remaining and the current reality will not improve creative development — therefore, a creative solution is necessary. Leadership must look to external sources to increase their exposure to diversity in thought and ideas. Providing opportunity for inter-unit collaboration, forging collaborative engagements with local businesses, and contracting professional development talks with leading organizations on diversity can all increase perspective awareness.

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[97] "National Action Plan: Canada," *PeaceWomen*, December 22, 2014, https://www.peacewomen.org/nap-canada.
[98] Global Affairs Canada Government of Canada, "Progress Report for Canada's National Action Plan 2017–2022 for the Implementation of the United Nations Security Council Resolutions on Women, Peace and Security Fiscal Year 2017–2018," *GAC*, accessed April 13, 2019, https://international.gc.ca/world-monde/issues_development-enjeux_developpement/gender_equality-egalite_des_genres/wps-fps-2017-2022.aspx?lang=eng.

National Action Plans for the Implementation of UNSCR 1325 on Women, Peace and Security

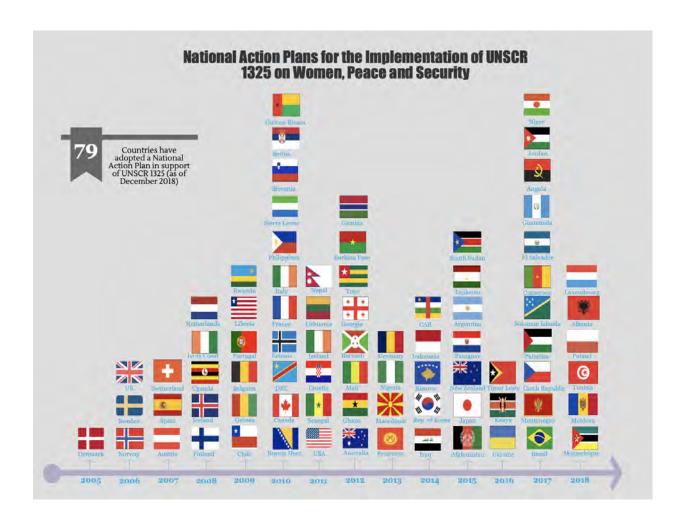**79** Countries have adopted a National Action Plan in support of UNSCR 1325 (as of December 2018)

Figure 1-1[99]

The CAF has a long standing tradition of awarding deserving members for achievements in productivity, courage and dedication. While these awards are well-merited and should never be diminished in the value of their contributions, the availability for rewarding creative ideas, whether they are used or stored away, is not a common practice. By awarding performance and not equally valuing potential, leadership sends a strong signal of where it places its priorities. As discussed in the previous chapter, awarding performance provides for attitudinal compliance to

[99]"Member States," *PeaceWomen*, November 14, 2014, https://www.peacewomen.org/member-states.

the vision, however it does not promote a sense of commitment. Performance falls within the category of extrinsic motivation, do this and be rewarded with that. While this is a powerful motivational tactic, it can not transcend to the level where members are self-sufficient in their drive to commit to the vision.

Developing programs that encourage and reward creative ideas has been shown to generate positive engagement of personnel and increase innovative products. Virgin mobile has created a creativity program that encourages the submission of new ways of dealing with known problems. Employees submit their ideas and if they are selected a reward is granted.[100] While this process taps into the extrinsically motivated reward tactic, it has the potential of converting that motivation to a state of commitment given that the true reward is the realization of a personal creative idea. Members who see their ideas come to fruition have a greater sense of commitment to the organization. A similar model for units within the CAF could provide significant benefits in creating innovative products.

Another category of interest for shaping the creative environment is the dichotomy between the essence of the military uniform and conformity that hinders creative development. The idea of the creative class was born from diversity, openness and tolerance for differences, yet the very concept of a uniform inhibits these creative foundational building blocks. On the other hand, uniforms are essential to the function of a military, they identify soldiers in time of conflict and build productive functions of order, obedience and comradery. As a legal function, regular militaries are obligated to distinguish themselves in times of conflict from civilians and other groups as a result of the 1949 Geneva convention and adoption of Customary International

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[100] Coleman, "Is Google's Model of the Creative Workplace the Future of the Office?"

Humanitarian Law (IHL).[101] This tension between a critical component that defines the Profession of Arms and the desire to apply the principles of a Learning Organization are certainly at odds with each other. However, this polarity can be viewed as a continuum given the right perspective.

As mentioned previously, the environment is predicated with the identification of the requirement, one has to quantify the level of creativity needed within the organization before making decisions. Quantity in this case can be filtered through a temporal perspective, the periods in hours, days or parts of the year where creativity is needed. Identifying clear expectations and framing the creative requirement can allow for both functions to coexist in the organization. While the previously mentioned components of shaping the creative environment have fewer limitations, military leadership must clearly balance their obligations under their profession. There are ample opportunities to provide the inclusive environment that creativity thrives in, free from rank, judgment and general limitations caused from an authoritative hierarchy. Leadership must create these opportunities by choosing when to diverge from the traditional uniform presence. The use of a Mess is an ideal location to remove personnel from the production environment of the office and relax the dress code for the time given. Providing these opportunities must be void of judgment, therefore the tendency to appeal to Mess dress codes must also be confronted to limit the creation of a subordinate hierarchy.

An attempt to design a creative environment within the limits of the Profession of Arms is not an astronomical endeavour, however it does take some deliberate and functional planning from the organizational leadership. Creating the organization's Shared Vision is crucial to this planning

[101] Toni Pfanner, "Military Uniforms and the Law of War," *Revue Internationale de La Croix-Rouge/International Review of the Red Cross* 86, no. 853 (March 2004): 103, doi:10.1017/S1560775500180113.

process, understanding and shaping the creative tension is dependent on the placement of the shared vision. Moreover, the shared vision must be an agreement of commonality to ensure that all members of the organization develop their personal visions and mastery along the same lines. Identifying these conditions will ensure that the development of the environment is inline with the expected future state. Shaping the environment is highly dependent on the "change distance" to be traveled, that is the distance between current reality and the goal established by the shared vision. The organization's leadership is primarily responsible for aligning motivations and creating the conditions that will succeed in moving the organization along the creative tension line established. Shaping the environment is a powerful method of enabling creativity through this innovation management process.

Creative CAF Leadership

Military organizations are considered by the corporate world as experts in creating effective leaders that are adept at influencing and motivating personnel to accomplish a given task. The education, experience and exposure that military leaders receive from time served, is a very valuable asset to most organizations in search for productive leadership. "*People in the military, particularly those who have deployed, have essentially been through a leadership accelerator*".[102] However, the military is not often accused of developing creativity in its leadership, despite its expressed desire to do so. In the CAF publication of "Leadership in the Canadian Forces: Doctrine" the concept of "effective leadership" is defined as "*directing, motivating and enabling others to accomplish the mission professionally and ethically, while*

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[102] Executive and Leadership, "The Military Is a 'Leadership Accelerator' Businesses Can Benefit from | Financial Post," October 21, 2014, https://financialpost.com/executive/leadership/the-military-is-a-leadership-accelerator-businesses-can-benefit-from.

developing or improving capabilities that contribute to mission success.".[103] While "directing" is

a natural function found in military organizations, the ability to "motivate" and "enable" people

speaks directly to the principles of personal mastery. Moreover, the publication "Leadership in

the Canadian Forces: Leading People" further defines the institutional expectations of leadership

as "*...the absolute foundation for effective leadership is the individual's mastery of the*

knowledge, skills and techniques required at each level and function of the profession of

arms."[104], another foundation to personal mastery discussed earlier. With such a clear

expectation of leadership to develop knowledge, motivate personnel and enable mission success,

why is there a lack of creativity in leadership? This section explores the role of leadership and

social culture that inhibits mentorship, practices of transformational leadership, and focusing

efforts towards innovative products.

At first glance, the CAF appear to espouse the criteria of successfully fostering a climate of

promoting leadership inline with the principles of personal mastery. The plethora of publications

and doctrine on the subject all align the readers to the very philosophy discussed in this paper.

From the advocacy of Transformational Leadership characteristics to the definition of "effective

leadership", CAF publications recognize the need for creativity at all levels of the institution.

This idea is aptly put in the "*Leading People*" publication: "*Success in adaptation requires that*

the CF leader understands and embraces the need for flexibility, creativity, diversity and

innovation.".[105] Yet it is clear by the CDS' statement earlier in this paper, that the integration and

development practices of creativity have yet to take root through the CAF's various levels of

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[103] Canadian Forces Leadership Institute et al., "Leadership in the Canadian Forces: Doctrine" (Ottawa: Dept. of National Defence, 2005), 5, http://publications.gc.ca/collections/collection_2013/dn-nd/D2-313-1-2005-eng.pdf.
[104] Ibid., 44.
[105] Canada. Dept. of National Defence, "Leadership in the Canadian Forces: Leading People" (Ottawa: Published under the auspices of the Chief of the Defence Staff by the Canadian Defence Academy, Canadian Forces Leadership Institute, 2007), 5, http://publications.gc.ca/collections/collection_2013/dn-nd/D2-313-3-2007-eng.pdf.

leadership. The theories explored in the previous chapter identify areas where leadership can influence personal mastery, however the challenge remains to use these within the limits of the Profession of Arms.

Individualized Consideration

In general, organizations who want to enable their members to develop personal mastery, face a significant leadership challenge; personal mastery depends greatly on individual choice. People cannot be directed to conjure a vision within a given period, it must be a self-actualization process or goal. The only known motivation to empower people to seek out personal mastery goals is to lead by example. Peter Senge, explains that organizational leaders that show leadership in developing their own personal vision and speak to the details of their path to personal mastery can elicit followers to do the same. This "leading by example" approach not only involves leadership in the process, it nourishes the need for a safe environment. As previously established, a safe environment is produced by leadership and its acceptance of placing its people first. To encourage the exploration of failures without the threat of judgment from peers or superiors.

Sharing a journey of personal mastery is not accomplished solely by the Commanding Officer (CO), it is much more effective of an influence if presented by the "Command Team". This team can be defined narrowly as either the senior officer and NCM, or more broadly to include other senior members of the organization. The larger the group, the more opportunities there are to discuss and share experiences in developing one's personal mastery path. Informal discussions, rather than lectures or presentations are more effective in building self-determination and self-efficacy. They provide for the reflection that encourages autonomy and indirectly affirms

positive expectations. These seeds of developing efficacy are critical to encouraging the idea of personal mastery as a self-motivated ambition. While leadership will not have the resources to affect all personnel equally, the effects tend to be infectious.

The CAF, like many hierarchical organizations are pressured to generate results, it is built into the culture of the profession. As described by Andrew Abbott, the ecosystem of the Profession of Arms creates a sense of competition to ensure that the service provided is met, a sentiment reflected in the CAF's familiar self-propelled statement of a "no fail mission". This statement on its own is intended to reflect the severity of the obligation that CAF members have with regard to their duty to defend Canada, a truly noble cause. However, it has woven its way into the fabric of the CAF mindset and culture, it has permeated to the most tactical endeavours and even the simple managerial responsibilities. While the CAF does hold a significant responsibility to maintain security for its State, it should not confound this most strategic responsibility with its everyday tasks, nor those of peacetime. To allow for leadership to confound this statement with ideations of grandeur, or add suppressive statements such as; "we're not getting shot at" or "things can always get worse", is to snuff out the desire to develop intrinsic motivation and contribute to innovative products. These competitive reinforcements create conformity and acceptance of authoritarian logic, however they will not allow for creativity to adhere. "*creative people like to feel challenged, they don't want to have to surmount unnecessary obstacles*"[106]

Limiting all forms of competitive influencers is a challenging prospect with military mindsets', by their very nature they are confident and outspoken. However, this philosophy is not new to the leaders of the CAF, it is an integral component of the desired behaviours for

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[106] Richard Florida and Jim Goodnight, "Managing for Creativity," *Harvard Business Review*, July 1, 2005, https://hbr.org/2005/07/managing-for-creativity.

Transformational Leadership. In "*Conceptual Foundations*", this behaviour is listed as; "*They provide individualized consideration of the social, emotional, and developmental needs of their subordinates*". A second related behaviour is described as "*They stimulate the thinking of their subordinates and encourage innovation and creativity*".[107] These prescribed behaviours are critical to the defined concept of "effective leadership" and are directly attributable to innovative management practices. Leaders must limit competitive behaviour, product-focused meetings and authoritarian demeanors where it is not required. Soldiers can learn to control their assertive influence to focus the many skills of their professional craft, however they need to be mentored to see the difference. Leadership can provide the conditions to master these skills and integrate them as part of the concepts of the Profession of Arms.

Mentorship

Mentorship and coaching are key components to ensuring that CAF members explore and challenge their personal vision. The effectiveness of deliberate leadership engaged in mentoring philosophy can unlock creative potential. A Harvard Business Review article identified the success that companies have when they recognize the organization's most valuable assets, "*a company's most important asset isn't raw materials, transportation systems, or political influence. It's creative capital—simply put, an arsenal of creative thinkers whose ideas can be turned into valuable products and services*".[108] In order to unlock this potential, organizations are best served through a functional mentoring philosophy.

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[107] Canada. Dept. of National Defence, "Leadership in the Canadian Forces: Conceptual Foundations," 68.
[108] Florida and Goodnight, "Managing for Creativity."

There is a stark contrast in what people consider to be "mentorship", therefore it is important to define the term given its casual use in many different settings. First, mentorship should not be confused with career progressive coaching, where a superior outlines the goals that a subordinate should have for progression within the organization's hierarchy. Mentorship should be considered as an altruistic mindset, where the mentor is focused on extracting and assisting the protégé in developing their own ideas of personal mastery and vision. A research article on mentoring teachers defined mentoring as: "*a nurturing process in which a more skilled or more experienced person, serving as a role model, teaches, sponsors, encourages, counsels and befriends a less skilled or less experienced person for the purpose of promoting the latter's professional and/ or personal development*"[109] This article emphasized four functions of effective mentoring; intentional, nurturing, insightful and supportive. The mentor's role is seen as a commitment to a protégé, a dedication of time and effort to nurture existing ideas, provide guidance and encourage self-determination. Therefore, mentorship has less to do with the expectations of a mentor, it is a protégé-centric approach, where the mentor brings out the potential of the student.

A recent five year study on the effects of a mentor-protégé relationship in PhD students concluded that mentorship had positive effects on student self-efficacy.[110] As discussed in the previous chapter, an increase in self-efficacy greatly influences the selection process of tasks and challenges, as it reduces the possibility of rejection due to anxiety responses. Members who are encouraged to visualize possible outcomes to their perceived future, have a greater emotional

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[109] Eugene M. Anderson and Anne Lucasse Shannon, "Toward a Conceptualization of Mentoring," *Journal of Teacher Education* 39, no. 1 (January 1988): 40, doi:10.1177/002248718803900109.

[110] Laura L. Paglis, Stephen G. Green, and Talya N. Bauert, "Does Adviser Mentoring Add Value? A Longitudinal Study of Mentoring and Doctoral Student Outcomes," *Research in Higher Education* 47, no. 4 (2006): 473–74, doi:10.1007/s11162-005-9003-2.

motivation towards their desired goals. In this regard, mentors can best serve their protégés by

encouraging cognitive and emotional discussions of their personal mastery and vision to

stimulate positive visualization and arousal of possible opportunities.

Shared Vision

Once the idea of personal mastery is accepted as an organizational norm, and common doubts of

competitive expectations are removed, there exists the opportunity to engage in true dialogue and

the synthesis of a shared vision. The CAF shared vision has had many names over the years,

however the message remained consistent in its intent since it first appeared in the Betty White

Paper of 1987.[111] The culmination of "Strong, Secure and Engaged", as a succinct view for the

national defence policy, provides for structural tension only if it is accepted thoroughly as a

shared organizational vision.[112] In response to the recent re-release of this vision, CAF leadership

has placed new emphasis on the people of the CAF, rather than the traditional focus on the

mission first and foremost. In an announcement of the CAF's newest additions of General

Officers in 2017, the CDS was quoted to recite a modified motto of the CAF; "*People first —*

mission always must be your ongoing focus.".[113] While the change was subtle, the previous

words were "mission first — people always", it had a significant impact on the CAF community.

It has been more than two years since that announcement and still officers are confused and

divided on the idea of placing people before the mission. The dichotomy is one of personal

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[111] "Defence Policy | The Canadian Encyclopedia," accessed March 24, 2019, https://www.thecanadianencyclopedia.ca/en/article/defence-policy.

[112] Public Services and Procurement Canada Government of Canada, "Strong, Secure, Engaged : Canada's Defence Policy.: D2-386/2017E-PDF - Government of Canada Publications - Canada.Ca," July 1, 2002, http://publications.gc.ca/site/eng/9.835971/publication.html.

[113] National Defence, "Chief of the Defence Staff Announces Canadian Armed Forces General and Flag Officer Senior Appointments, Promotions, and Retirements," news releases, *Gcnws*, (January 31, 2017), https://www.canada.ca/en/department-national-defence/news/2017/01/chief-defence-staff-announces-canadian-armed-forces-general-flag-officer-senior-appointments-promotions-retirements.html.

vision that has had difficulty adapting to a new institutional one. The mental models of duty and service prevent leaders from conceivably lowering the importance of the mission. While placing people and their interests first is an empathetic notion and in-line with the concept of Transformational Leadership, the culturally accepted norms of self-sacrifice, courage and bravery inhibit soldiers from accepting this new direction. Leadership has the responsibility to open dialogue within their organizations to limit this long-standing norms, and resulting emotional tension that inhibits the collective shared vision from being realized.

Dialogue provides for the culmination of all creative energy within the organization. It is the eureka moment when having a stimulating discussion with friends and peers outside of the existence of fear, anxiety and restraint. It cannot be lectured, forced or coerced to materialize on command. However, leadership can create the conditions for it to form naturally. David Bohm suggests that dialogue is the collective accumulation of creativity, which develops new ideas or products through evaluating opinions. The manner in which we form opinions on every aspect of our perception of the world is through fragmentation. As individuals experience their environment, they fragment, categorize and prioritize their opinions, these are then converted into the mental models that help discern the world. In conversation, opinions are often conflated with facts as the participants struggle with their own confirmation-bias. This very human trait is not confined to specific ethnic, religious or language backgrounds. All individuals attempt to resolve cognitive dissonance through this thought process.[114] Breaking this cycle is a particularly difficult task as it involves, emotional awareness, disruptive thinking and self-determined

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[114] Shannon McGinley, "OPINION: Why Facts Don't Matter," *TCA Regional News; Chicago*, March 18, 2019, http://search.proquest.com/docview/2193668108/citation/A79DA97107944E7APQ/1.

motivation. Leadership behaviour is key to transforming a conversation culture where opinions are plentiful to a dialogue environment that builds on collective thought and participation.

The concept of instilling others with a greater sense of emotional awareness was covered in developing a safe and diverse environment through reducing judgment and competitive rivalry. The responsibility of leadership, following the desired behaviours of Transformational Leadership, enable that environment to exist. Analyzing the various cultural interactions such as asking assertive statement-like questions when ideas conflict with each other — "You can't possibly believe that?" — will increase the tendency for confirmation-bias behaviour. Members who are encouraged to use open-ended questions to help clarify disaccords — "Why do you think that is the case?" or "Do you believe that will work? Why?". A recent study on the effects of open-ended questions on developing confirmation-bias concluded that "*adhering to open questions reduces the detrimental impact of confirmation bias on question type.*".[115] This approach has a tendency to unseat an individual's assured mental model through self-reflection rather than persuasion; a more effective manner considering the limitation of persuasion. This condition is closely related to the "social judgment theory" put forth by Elliot Aronson, which describes the powerful influence that surrounding context has on the decision-making process. The theory identifies that suggestive information is more persuasive than leading information and changing biases.[116] Applying this knowledge in confronting settled opinions can effectively alter cognitive-biases without hardening existing emotional tension, and ensure that dialogue can continue.

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[115] Martine B. Powell, Carolyn H. Hughes-Scholes, and Stefanie J. Sharman, "Skill in Interviewing Reduces Confirmation Bias," *Journal of Investigative Psychology & Offender Profiling* 9, no. 2 (June 2012): 126, doi:10.1002/jip.1357.

[116] Elliot Aronson and Joshua Aronson, *The Social Animal*, 10th ed (New York: Worth Publishers, 2008), 123.

Encouraging disruptive thinking can be an effective tool to limiting the influence of judgment and groupthink within the organization. The use of creative disruption limits mitigation and consensus and the "creative process is boosted by the disruptive input"[117] The concept of disruptive input is taken from the ideas of Design Thinking, a creative approach to problem solving. Allowing, and encouraging this behaviour is contradictory to the discipline and obedience mindset that typical military culture has developed, however the process has been shown to be successful in militaries that face multiple globalized and regional threats. The Israeli Defence Force (IDF) has proven to be an innovative organization, harnessing creativity in order to survive its many existential threats. Recently the IDF has begun teaching Systemic Inquiry in Operational Mediation, a design thinking "*methodology focuses on triggering strategic and operational innovation through guided self-disruption and exploitation of identified tensions*".[118]

The IDF used this methodology to solve an Israeli-Palestinian conflict in an urban setting after the insurgents proved particularly effective in the urban alleys and buildings. In an interview with the commander of the Israeli Defence Force (IDF) Paratrooper Brigade, Aviv Kokhavi, he explained the benefits of their application of disruptive creativity, but first he framed the problem as follows:

> "this room that you look at, is nothing but your interpretation of it. Now, you can
>
> stretch the boundaries of your interpretation, but not in an unlimited fashion. After
>
> all it must be bound by physics – it contains buildings and alleys. The question is:
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> How do you interpret the alley? Do you interpret the alley as a place, like every

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[117]F. Galli and I. Suteu, "Design Thinking as a Disruptive Discourse Embracing Conflict as a Creative Factor," in *2013 IEEE Tsinghua International Design Management Symposium*, 2013, 145, doi:10.1109/TIDMS.2013.6981228.
[118] Aaron P. Jackson, "A Brief History of Military Design Thinking," *Aaron P. Jackson*, February 6, 2019, https://medium.com/@aaronpjackson/a-brief-history-of-military-design-thinking-b27ba9571b89.

architect and every town planner does, to walk through, or do you interpret the alley as a place forbidden to walk through? This depends only on interpretation. We interpreted the alley as a place forbidden to walk through, and the door as a place forbidden to pass through, and the window as a place forbidden to look through, because a weapon awaits us in the alley, and a booby trap awaits us behind the doors."[119]

By reframing the problem and applying disruptive creativity to the interpretation of the physical space, the IDF successfully changed the rules of the engagement. The openness to consider this idea required freedom from a closed mindset and mitigations that would have normally dismissed the idea without thorough consideration.

The final leadership factor to evaluate, is that of self-determined motivation. The previous chapter discussed the theory of self-determination and how the needs of competence, relatedness and autonomy were driving forces for intrinsic motivation. While the aforementioned extrinsic motivational tactics are key to building self-efficacy for members, the move towards personal mastery will require the individual to eventually internalize the desire to further their goals. The leadership role in developing intrinsic motivation is complementary to the responsibility of the individual, for the individual is often most adept at discerning its own capabilities. However, an astute leader can observe and develop a sense of personnel potential and provide challenges that they believe to be in the sphere of their competencies. Albert Bandura's research explains the benefits of stretching the perceived self-efficacy preconception in order to build greater

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[119] Eyal Weizman, "Walking through Walls: Soldiers as Architects in the Israeli/Palestinian Conflict," accessed April 20, 2019, https://www.publicspace.org/multimedia/-/post/walking-through-walls-soldiers-as-architects-in-the-israeli-palestinian-conflict.

resilience. The areas where leaders can influence members are; cognitive conceptualization of challenges, diffuse anxiety development and promotion of acceptance.

Conceptualization is a powerful motivator that allows a person to accept their role in a given task. They visualize their capabilities, the available mental models and extrapolate their success at the given task. This is a constructor of self-assurance, which "provide self-satisfactions conducive to growth of interest.".[120] Alternately, an individual can equally conceptualize a task beyond their capabilities and rationalize their dismissal or avoidance. A clear example of a non-deliberate constrictor of self-belief is aptly exposed is the famous quote from by Marian Wright Edelman, an activist for child rights — "It's hard to be what you can't see".[121] While the quote was originally intended to explain the struggle that children of colour face when they look for their place in society, it has been used to depict the same perceived self-efficacy limiter for all minorities. Albert Bandura also acknowledges this challenge, he observed that "*women are constricted by self-beliefs that traditionally male occupations are inappropriate for them because they lack the capabilities to master requisite skills*".[122] This challenge is not only identifiable in minority groups, it is equally discovered in individuals of all ages, ethnicities and gender that cannot conceptualize themselves in a given environment. It is therefore, a leadership goal to acknowledge these discrepancies and provide the forcing functions that can limit their influence in decision making.

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[120] Albert Bandura, "Self-Efficacy Mechanism in Human Agency," *American Psychologist* 37, no. 2 (1982): 135, doi:10.1037/0003-066X.37.2.122.

[121] "IT'S HARD TO BE WHAT YOU CAN'T SEE," *Children's Defense Fund*, accessed April 21, 2019, https://www.childrensdefense.org/child-watch-columns/health/2015/its-hard-to-be-what-you-cant-see/.

[122] Bandura, "Self-Efficacy Mechanism in Human Agency," 135–36.

In order to limit the effects of adverse events that threaten increased self-efficacy, it is important to reverse the conceptualization of fear and anxiety responses. In Albert Bandura's research he points to the ideas of cognitive and behavioural control to counteract responses to new challenges. He states that "*Control over events makes them predictable, thus reducing uncertainty*", where behavioural control is the "take action" portion, while cognitive control is the "belief in managing the environment".[123] It is clear that both these functions are internal control mechanisms that only the individual can master, however leadership can set the conditions to promote an individual's perception of control. Increasing diversity of gender, age and rank within the groups can limit the "can't see" limitation. Identifying anxious responses to planned change events and ensuring those individuals have a voice in shaping the transformation process create buy-in. In these ways, leadership can absorb stress within the organization and diffuse a greater sense of self-efficacy.

Sharing a leader's personal mastery roadmap provides the framework for members to emulate and explore their own views of their environment and personal goals. Mentoring individuals through seeking to understand and build their vision, regardless of the direction it takes them, helps unlock the intricacies of their passion. Building a shared vision where members can align their personal vision to that of the institution aligns intrinsic motivation and commitment to the organizational values. The CAF leadership have all the necessary doctrine and tools to encourage the development of personal mastery and, by extension, exponentially multiply creative cognitive talent at an organizational level. In order to accomplish this, leadership must unequivocally trust their personnel to accomplish the task without supervision; they must see the organization move forward without the need to tweak, modify or adjust the day-to-day activities.

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[123] Ibid., 136–37.

The behaviours espoused in CAF doctrine of Transformational Leadership are vast and complicated in their operationalization of knowledge, they require a leader's full attention to master.

In 2004, when Transformational Leadership was beginning to become known in CAF circles, critics argued that it was incompatible with the military culture — "*this style of leadership is entirely incompatible with the warrior ethic.*".[124] The vision of evolving the transactional leadership model to one focused on developing potential was a stretch of the creative tension limits for the organization, yet the idea did not break under the tension. While the CAF has adopted the style in name, there remains much work to be accomplished in order to completely advance the cultural restraints remaining.

Conclusion

The concepts that makeup the Profession of Arms have endured throughout history; Spartan, Roman empires and a variety of monarchical societies have relied on them to defend and secure their State interests from existential threats. They have adapted to emergent capabilities such as mounted cavalry, artillery, gunpowder and the introduction of the air domain. However, they have never been subjected to the idea of sharing the monopoly of the use of force in the service to the State with other State and non-State actors. The emergent capabilities discussed in this research paper are not new ideas, however they have been influenced by the factors of the information age. There has never in history been the ability for an instantaneous interconnected network of information to virtually connect every citizen without filters nor limits. A network

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[124] Department of National Defence Government of Canada and National Defence Government of Canada, "Transformational Leadership: Not for the Warrior," accessed April 21, 2019, http://www.journal.forces.gc.ca/vo5/no4/views-vues-eng.asp.

that can be weaponized, and render useless the traditional methods of defence and security. Adapting to this new environment will require a level of disruptive creativity that will assess all aspects of foundational beliefs engrained in military culture, doctrine and principles. The future of the Profession of Arms may need to evolve, and that will require greater creativity at the strategic level of the organization.

Using Peter Senge's "Learning Organization" model, the concepts of creative tension, intrinsic motivation and shared vision were explored and superimposed on the culture of the Profession of Arms. The shared value of knowledge development and personal mastery were identified as common bonds that seek to develop individual cognitive capacity in order to be more effective, intuitive and creative. The use of shaping the environment and leadership influences were exploited, in order to overcome institutional challenges of hierarchical dependency and risk aversion decision making. Through this research it was made clear that while the CAF must maintain its productive goal-oriented approach to its defence and security obligations, there exists areas of innovation management that have yet to be accessed and exploited.

As societies move towards a more interconnected flow of information, emergent capabilities such as hybrid warfare, grey-zone operations and phase zero shaping will act as forcing agents for change and adaptability. In a future environment where corporations and government agencies share the responsibility and service to protect citizens, the management of force will no longer be the monopoly of the Profession of Arms. Militaries must learn to integrate all new parties who will now share in the protection of the State, to develop and lead transformation of this expanding societal service.

Despite the perceived limitations in organizations that are characterized by conformity, discipline and control there exists opportunities to generate creativity. While the CAF has conceptualized its own transformation through leadership doctrine, there remains significant opportunities to operationalize the concepts espoused. Through the lense of the Learning Organization model there exists the potential to provide a conduit for taking strategic-level philosophy, captured in Transformational Leadership, and convert it to operational and tactical processes. Through developing a sub-culture of creative tension, intrinsic motivation and a commitment to a shared vision, the CAF can build innovation engines to power its evolution and meet future existential challenges.

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