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SHAPING FUTURE PEACE SUPPORT OPERATIONS THROUGH DESIGN

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JCSP 42

Exercise *Solo Flight*

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> *War plans cover every aspect of war, and weave them all into a single operation that must have a single, ultimate objective, in which all particular aims are reconciled. No one starts a war or rather, no one ought to do so without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it.*
>
> – Carl Von Clausewitz, *On War*

Introduction

In the recent throne speech, the Governor General announced that Canada will become more involved in future Peace Support Operations (PSO).[1] Due to a changing global situation, these operations will come with a new set of challenges that will need a thorough understanding of the operational environment in which Canadian Armed Forces (CAF) personnel are deployed. The current campaign design tools that the CAF utilize are ill-equipped to tackle the modern PSO. The adoption of a military Design methodology to analyze these future engagements would help the CAF to manage some of the challenges they will likely encounter.

The Design Methodology fills in the gaps between strategic guidance and tactical planning, and helps operational planners appreciate and solve the complex and ill-structured issues inherit to a modern PSO. Design also aids in identifying the multiple problems and endeavours to avoid making similar mistakes made in previous peace support operations. Although cognitive dissidence could lead to institutional resistance, past experiences and future hypothesis have shown that PSOs will be complex and ill-structured; and are thus an ideal situation for Design. This paper will show that due to the wicked problems that PSOs are likely to present, the CAF should utilize Design to develop an appreciation and a campaign plan that embraces a broad approach and robust resolution. The ultimate goal of Design is to guide the

[1]House of Commons, *42nd Parliament of Canada's Speech from the Throne*, 4 December 2015, http://speech.gc.ca/en/content/making-real-change-happen.

development of operational plans and orders which will be presented to the tactical commanders, through a clear understanding of the environment and context, the problems and adversaries, and the required approaches and actions.

This paper will begin with an overview of Design, including some of the motivations behind why this methodology is important for future operations, what it is, and how it is applied to an ill-structured or wicked problem. Next, a case study focused on a previous PSO will be presented which will highlight many of the issues that Design seeks to eliminate through analysis and framing. Finally, this paper will look at some of the challenges that future PSOs could pose, and how design could be successfully used to anticipate, adjust and overcome these potential roadblocks.

Why do Design?

The emerging conflicts in the modern global community are demonstrating a changing threat. Adversaries are observing, thinking and adapting to friendly force actions. They are able to observe through a number of recently developed channels, such as social media and cellular communications. Both of these mediums are prevalent throughout the world, even in the poorest of countries. The infrastructure required to establish cell phone or internet communications is minimal and can be constructed very rapidly compared to traditional land line communication. The cellular network, by design, is also very robust in that if a number of communication towers are rendered inoperable, the network continues to operate unaffected.[2]

Through observation, the contemporary enemy is developing an understanding of friendly forces and are able defend against the element of surprise. After developing an understanding of the friendly forces, the adaptable enemy is able to morph to meet their

[2]Pew Research Center, "Emerging Nations Embrace Internet, Mobile Technology: Cell Phones Nearly Ubiquitous in Many Countries," February 2014, http://www.pewglobal.org/2014/02/13/emerging-nations-embrace-internet-mobile-technology/, 2-3.

challengers.[3] This adaption makes these adversaries almost impossible to predict. Neither their exact location nor the nature of their opposition will be able to be understood well. Their adaptability will also influence their abilities to initially seek a quick victory, long before a multi-national coalition force could be organized or deployed.[4]

There are several expected approaches that these modern opponents will use. Principally, they will seek regional dominance, regardless of international boundaries. They will use hybrid strategies that will combine a number of different planes, including the physical, cyber, and human/emotional planes. They will also utilize conventional and irregular warfare tactics in combination with criminal and terrorist links to achieve their end goals. Once regional dominance is achieved, they will be able to establish themselves within the population. Their intent will be to wait out the coalition forces, and through a combination of friendly and civilian casualties, fracture the international support which routinely represents the centre of gravity to friendly forces.[5]

As Design expert Jim Greer has noted, as a result of these changing threats, including emerging ones that are not yet understood, "we need to think through how to reconcile the problems of an adaptive enemy in an unforgiving environment."[6] It has been argued that the present campaign planning format that is being taught at the Canadian Armed Forces schools

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[3]Forrest Rock, "Levelling the Playing Field: An Analysis of the Essential Elements of a Contemporary Counter-Asymmetric Strategy" (Directed Research Project, Canadian Forces College, 2015), 3; Brendan I. Koerner, "Why is ISIS Winning the Social Media War," Wired (April 2016), http://www.wired.com/2016/03/isis-winning-social-media-war-heres-beat/.

[4]James K. Greer, "Overview of Design Theory, Canadian Forces College: "Applying Design to Develop Critical Thinking Skills in order to Solve Complex Problems," (presentation, Canadian Forces College, Toronto, ON, April 2015), with permission.

[5]Bruce W. Bennett, Christopher P. Twomey, and Gregory F. Treverton, *What are Asymmetric Strategies?* (Washington, DC: The RAND Corporation, 1999), vii, 3, 6.

[6]Greer, "Overview of Design Theory…

does not meet the needs that this full spectrum operation stipulates.[7] The present planning tools are based on different analysis which does not represent the likely future challenges. As demonstrated in Figure 1, the legacy planning tools are based on the Napoleonic legacy, which were put into practice in the Second World War and the Cold War. The modern operating environment demands a thorough analysis of chaos and complexity theories, history lessons from Vietnam and Somalia, and practiced strategies in Afghanistan and Iraq. This analysis has led to the development of the Design methodology, which is an Americanized version of the Systemic Operational Design that was developed for the Israeli Defense Forces in the early 2000s.[8] It is through the Design methodology that the modern complexities of warfare can be addressed and appropriately planned.

Figure 1: Comparison of Legacy Planning Sources and Design Planning Sources
Source: Adapted from Greer, *Overview of Design Theory…*

What is Design?

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[7]James K. Greer, "Operational Art for the Objective Force," *Military Review* 82, no. 5 (2002): 23; LCol L. Craig Dalton, Canadian Army, *Systemic Operational Design: Epistemological Bump or the Way Ahead for Operational Design? A Monograph* (Fort Leavenworth, Kansas: School of Advanced Military Studies, United States Army Command and General Staff College, AY 05-06), 22; *For detailed information on the Canadian Operational Planning Process, see* Department of National Defence, B-GJ-005-500/FP-000, *Canadian Forces Joint Publication 5.0: The Canadian Forces Operational Planning Process (OPP)* (Ottawa: DND Canada, 2008).

[8]Greer, "Overview of Design Theory…

The US Army School of Advanced Military Studies (SAMS) defines Design as "learning about an unfamiliar problem and [exploiting] that understanding to create a broad approach to problem solving."[9] This broad focus of Design allows planners to not just concentrate on military tasks, but also on a comprehensive approach which would address the problem or issue. What resulted was the Design methodology developed for the United States Army which addresses the shortfalls of the legacy campaign planning tools. The unfamiliar problems being faced by military leaders demanded a different approach to planning. As stated in the US Army Field Manual 5-0, "Design is a methodology for applying critical and creative thinking to understand, visualize, and describe complex, ill-structured problems and develop approaches to solve them."[10] The methodology was implemented through a number of doctrinal adaptations and research products throughout the 2000s, and continues to adapt as the processes are utilized and employed.[11]

There have been numerous approaches to Design have been studied by different researchers. Their analysis has led to different perspectives and views about how to conduct Design. For example, Jim Greer and Ben Zweibelson, both experts in the Design field, see the processes slightly differently. Zweibelson stresses the leaders to look at the ontological aspects of a paradox,[12] where Greer believes that it is more important to focus on trying to determine the true problem of the situation.[13] Both perspectives encourage the military planner to formulate

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[9]United States Army, *Commander's Appreciation and Campaign Design*, Training and Doctrine Command Pamphlet 525-5-500 (Fort Monroe, Virginia: Department of the Army, 2008).

[10]United States Army, *The Operations Process*, FM 5-0 (Washington, D.C.: Department of the Army, 2010), 3-1.

[11]*See the following as examples of the growing adaptation of Design in the US Army:* United States Army, *The Operations Process*, ADP 5-0 (Washington, D.C.: Department of the Army, 2012), United States Army, *The Operations Process*, FM 5-0 (2010), United States Army, *Commander's Appreciation and Campaign Design*, Training and Doctrine Command Pamphlet 525-5-500 (2008).

[12]Ben Zweibelson, "A Brief Discussion on Design and the Military" (presentation, Canadian Forces College, Toronto, ON, April 2015), with permission.

[13]Greer, "Overview of Design Theory…

and think deeply about the problem, then determine the "underlying causes, structure and operative dynamics."[14] Zweibelson explains that at least some of the underlying causes of ill-structured problems come from the radical humanism paradigm, and the planner must try to come to terms with this unconventional perception.[15] Greer, on the other hand, describes developing an understanding of the causes through an iterative process of methodically learning about the situation which deliberately examines the environmental, problem, solution, assessment and adaptation spaces.[16] These different perspectives highlight the conceptual and abstract nature of Design.

The study of ill-structured problems is not new, as they were described in 1972 by a professor at the University of California, Berkley, Horst Rittel, as "wicked problems."[17] The Commander's Appreciation and Campaign Design (CACD) publication from the US Army conceptually adapts the wicked problem idea and applies them in a military context to modern operational problems.[18] According to the CACD, there are eleven distinguishing properties of wicked problems, all based on Rittel's initial ten properties. Out of these, CACD notes that there are two key properties: "There is no definitive way to formulate an ill-structured problem" and "We cannot understand an ill-structured problem without proposing a solution."[19] These properties speak to the difficulty the leader will have in attempting to solve the problem, and how they must either attempt to understand the problem or analyze the mission before designing an approach to mission success. The US Army Operations Process as outlined in FM 5-0 has introduced Design in order to address wicked or ill-structured problems. This manual suggests

[14]John F. Schmitt, "A Systemic Concept for Operational Design," *US MC Warfighting Laboratory* (2006), http://www.au.af.mil/au/awc/awcgate/usmc/mcwl_schmitt_op_design.pdf, 6.
[15]Zweibelson, "A Brief Discussion on Design…
[16]Greer, "Overview of Design Theory…
[17]Horst W.J. Rittel, and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4, no. 2 (1973): 155-169.
[18]United States Army, *Commander's Appreciation and Campaign Design…*, 9-11.
[19]*Ibid.*, 9-10.

continuing to use the Military Decision Making Process (MDMP) either in conjunction with Design, or by itself if the problem is well-structured.[20] As a quick reference, both the CACD and FM 5-0 have a table which allows a commander to determine what type of problem they are facing (see Figure 2).

	Well-structured	*Medium-structured*	*Ill-structured*
Problem Structuring	The problem is self-evident.	Professionals easily agree on its structure.	Professionals have difficulty agreeing on problem structure and will have to agree on a shared hypothesis.
Solution Development	Solution techniques are available and there are verifiable solutions.	There may be more than one "right" answer. Professionals may disagree on the best solution. A desired end state can be agreed on.	Professionals will disagree on— • How the problem can be solved. • The most desirable end state. • Whether the end state can be attained.
Execution of Solution	Success requires learning to perfect technique.	Success requires learning to perfect techniques and to adjust the solution.	Success requires learning to perfect technique, adjust the solution, and continuously refine understanding of the problem.
Adaptive Iteration	No adaptive iteration required.	Adaptive iteration is required to find the best solution.	Adaptive iteration is required both to refine the problem and to find the best solution.

Figure 2: Types of Problems and Solution Strategies
Source: United States Army, *The Operations Process*, FM 5-0…, 2-4

Once it is determined that the leader is faced with a wicked problem, leaders and planning staff working as a team have the opportunity to garner a better situational understanding of the problem before detailed planning occurs. It is important that all members of the planning team understand why they are facing the problem before they begin determining what they will do to solve the problem. In FM 6-0, the Art of Command emphasizes that "although various formats exist to communicate information, successful commanders understand the immeasurable value of collaboration and dialogue."[21] In Design, the team approach is critical as it is

[20]United States Army, *The Operations Process*, FM 5-0…, 2-7.
[21]United States Army, *Commander and Staff Organization and Operations*, FM 6-0 (Washington, D.C.: Department of the Army, 2014), 6.

acknowledged that the leader is not always the smartest person in the room. The subordinates need to be engaged as that is where the great ideas and solutions will come from.[22]

Although it is a methodology, Design is not a checklist or sequence that can be performed in a linear manner. It is an iterative process that involves framing and re-framing as the problem gets defined, an approach becomes developed and the context is better appreciated.[23] As opposed to traditional planning tools which are task oriented, Design methodology is problem oriented and the understanding of why it's the right problem and solving this problem is primary to solving a problem with effective execution. If conducted properly, it is expected that Design will lead to five key operational environment promises: economy of effort, greater operational coherence, better integration and coordination the whole of government, fewer unintended consequences and effective adaptation.[24]

How does Design work?

There is a number of different design methodologies used in the global military community. In addition to the US, Israel, Australia, the United Kingdom, and the Netherlands all have adapted Design into some of their planning doctrine.[25] As an example, the US Army Design Methodology looks at three different environments which are interconnected through the Design Concept: the operational environment, the problem space, and the solution space. Figure 3 shows how these elements of Design are connected. These elements are required to be studied in order to fully capture the benefits of this methodology. Although this approach is non-linear, it is important to consider the operational environment first. Once a basic understanding of this environment is captured, the planning team can move forward with identifying the problem

[22]Greer, "Overview of Design Theory…
[23]Zweibelson, "A Brief Discussion on Design…
[24]United States Army, *The Operations Process*, FM 5-0…, 3-7.
[25]Zweibelson, "A Brief Discussion on Design…

frame and general operational approaches. As a cyclical process, it is important to note that as the team looks at each of the elements, they must also look at the inter-connections and influences each of the elements have on each other. This builds the Design Concept and is represented by the web connecting the three elements in Figure 3.

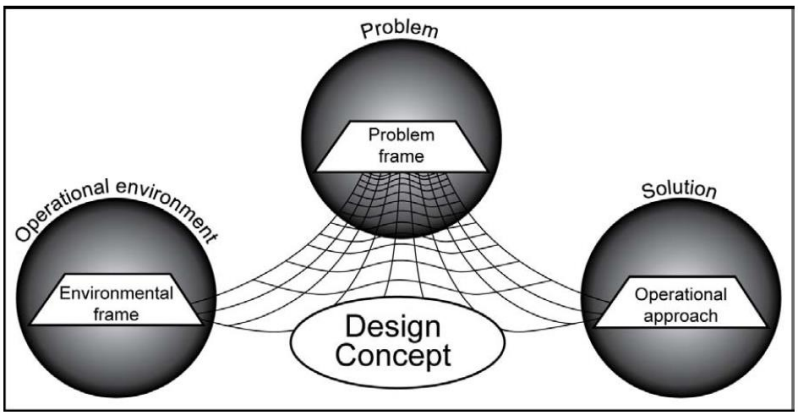

Figure 3: The Design Methodology.
Source: United States Army, *The Operations Process,* FM 5-0…, 3-7.

A recent research publication has investigated a number of different applications of the Design methodology. "Army Design Methodology: Commander's Resource" was produced as there has been significant resistance to Design, and to highlight some practical application considerations for Design.[26] Although not intended to be a how-to manual, it does list three frameworks that can be used to employ Design. These frameworks employ slightly different approaches to the Design challenge, involving different periods, phases or areas which need to be investigated. These frameworks are further elaborated in their own source documents.[27] Generally, all these frameworks emphasize that through Design, the planner must understand the environment while also determining the true problem. This understanding must be garnered

[26]Anna Grome *et al*, *Army Design Methodology: Commander's Resource* (Fort Leavenworth, KS: United States Army School of Advanced Military Studies, 2012), 8.

[27]Celestino Perez Jr, "A Practical Guide to Design: A Way to Think About It, and a Way to Do It," *Military Review* 91, no. 2 (2011): 41-51; Schmitt, "A Systemic Concept for Operational Design…; United States Army, *The Operations Process,* FM 5-0….

before developing a final solution or set of solutions, but can also be assisted by suggesting iterative solutions. These final solutions are then adapted into tasks – essentially answering how to achieve the desired outcome. As shown in Figure 4, the three frameworks are broken into steps, but it is emphasized that the steps are iterative, and should be re-examined throughout the Design process. As Ben Zweibelson, a leading expert on Design Theory states, "there are no steps – even when we swear there are steps."[28]

Schmitt Framework	**Perez Framework**	**FM 5-0 Framework**
4 periods of discourse:	4 areas of exploration:	3 phases:
1. Impressions of the mess	1. What is going on in the environment?	1. Framing the operational environment
2. Identifying and structuring the problem	2. What is our desired end-state?	2. Framing the problem
3. Crossing the boundary into systems thinking	3. What is preventing us from achieving the desired end-state?	3. Considering an operational approach
4. Develop a solution for solving the problem	4. Where and how must we get in the environment to achieve our end-state?	

Figure 4: Three Examples of Design Framework.
Source: *Adapted from* Grome, *Army Design Methodology…*, 26-27.

Dr. Simon Murden explains in his analysis of mission design, Design is primarily about investigating the Why, then the What, and less so on the How.[29] The Why question, as explained earlier, is an analysis of the higher commanders aims within the environment in which the mission is to be conducted. The What question captures the objectives of the mission (i.e. "What are we going to do to achieve our mission?"), however, this needs to be synthesized with the

[28]Ben Zweibelson, "Seven Design Theory Considerations," *Military Review* (November-December 2012): 87.
[29]Simon Murden, "Purpose in Mission Design," *Military Review* (May-June 2013): 55.

Why outputs. Finally, the How, are the tasks that must be completed to achieve the mission. The outputs of the Design process feed the tasks and tactical outcomes (the How). However, Zweibelson points out that "military planning teams should not attempt to show their intellectual journey of discovery by presenting their in-house conceptual products; it should focus on the statue (deliverable) instead."[30] Even though Design methodology might have led the planning team in many complex and deep visualizations, the Design deliverables need to be actionable, logical, understandable and with the right language in order to be effectively utilized in the development of tactical plans (the How).

Design, particularly for military planning, is not without its challenges in application. The military tends to rely on checklists and linear progressive models to solve problems, but the Design process is not straightforward, nor does it follow a process flowchart such as OPP or MDMP. It also requires particular mental capacities such as the ability to deconstruct problems to determine the underlying source. Many people do not have this ability, and therefore specific and comprehensive training is needed, as well as targeted human resource management to try to develop the appropriate type of planners.[31] Similarly, Design requires a degree of creativity from the commander and staff. As with any planning tool, regardless if it is OPP, MDMP or Design, a poorly used tool will not be able to achieve the desired results. Finally, Design uses vague language and can potentially lead to overly complicated solutions that cannot be translated to an operational plan. Milan Vego, a professor at the US Naval War College, goes so far as to say that "the vocabulary used by [Systemic Operational Design] advocates is essentially unintelligible…

[30]Zweibelson, "Seven Design Theory Considerations…, 86-87.

[31]Adam Elkus and Crispin Burke, "Operational Design: Promise and Problems," *Small Wars Journal* (2010): 16.

the decisionmaking and planning process must use the same vocabulary."[32] However, even with these challenges, there is a place for Design in future operations. It is a deliberate and iterative process that may take more time to develop, but the outcome is a much greater understanding of the environment, and thus less chance that there will be unexpected surprises. Preparedness is vital to tackling the adaptable contemporary adversary.

Challenges in PSOs: Bosnia Case Study

With the end of the Cold War, there was a dramatic growth in the number of United Nations (UN) deployments, known as the Post-Cold War Surge. For example, between 1989 and 1994, "the [UN] Security Council authorized a total of 20 new operations … raising the number of peacekeepers from 11,000 to 75,000."[33] These missions also began to take on more complex multidimensional challenges and increasingly these were within intra-state conflicts. Some of these tasks included: governance development, human rights monitoring, security sector reform, disarmament, demobilization and former combatant reintegration. These new operations, known as third-generation missions, "primarily involved internal conflicts and … often lacked the consent of the parties."[34] The first-generation missions were pre-1988, and were mainly monitoring roles, while second-generation missions were after 1988, with complex and multidimensional peace agreements, but with generally consenting parties.[35] The Canadian military played an important role in these third-generation missions. For example, "at one point at the end of the [1990's], there were almost 4000 Canadian military personnel in the former

[32]Milan N. Vego, "A Case Against Systematic Operational Design," *Joint Force Quarterly* 53 (2nd Quarter 2009): 75.

[33]United Nations, "United Nations Peacekeeping: Post Cold-War Surge," http://www.un.org/en/peacekeeping/operations/surge.shtml, last accessed 4 May 2016.

[34]Emel Osmancavusoglu, "Challenges to United Nations Peacekeeping Operations in the Post-Cold War Era," *Journal of International Affairs* Vol IV, No. 4 (1999): 3.

[35]*Ibid.*

Yugoslavia."[36] The motivation, according to renown Canadian foreign and defense policy experts Jockel and Sokolsky in their analysis of Canada's role in NATO, was no longer homeland security as it was during the Cold War. These deployments now focused on human security and "the good old Canadian urge to peacekeep."[37] With this in mind, the Canadian military deployed into a quagmire that would last for many years longer than originally planned.

One of the first UN third-generation missions began in February 1992. The United Nations Protection Force (UNPROFOR) was established under the UN Security Council Resolution (UNSCR) 743 with the aim of reaching a peaceful political settlement in the Yugoslavian region. The UNSCR specifically noted that the Security Council was "concerned that the situation in Yugoslavia continues to constitute a threat to international peace and security."[38] Although the force had an initial mandate for 12 months, the force was ultimately extended until March 1995. However, the instability in the region began long before UNPROFOR was deployed to the region. In 1980 the death of Yugoslavia president Josip Broz Tito left a power vacuum in the region. After 10 years of resource shortages and economic and political failure, Slovenia, Croatia, Bosnia and Macedonia all split from Yugoslavia between 1990 and 1992. Shortly after their succession, the Serbian, Croatian, and Muslim populations within Bosnia each began a struggle for power.[39] "Deeply concerned by the fighting in Yugoslavia, which is causing a heavy loss of human life and material damage,"[40] the UN began

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[36]Joseph T. Jockel and Joel J. Sokolsky, "Canada and NATO: Keeping Ottawa in, expenses down, criticism out... and the country secure," *International Journal* 64, no. 2 (2009): 329.

[37]*Ibid.*

[38]United Nations, "United Nations Security Council Resolution 743: Socialist Federal Rep. of Yugoslavia (21 Feb)," New York, NY (1992), http://unscr.com/en/resolutions/doc/743.

[39]Lester H. Brune, *The United States and Post-Cold War Interventions: Bush and Clinton in Somalia, Haiti, and Bosnia, 1992-1998*, Regina Guides to Contemporary Issues No. 11 (Claremont, California: Regina Books, 1998), 78.

[40]United Nations, "United Nations Security Council Resolution 713: Socialist Federal Rep. of Yugoslavia (25 Sept)," New York, NY (1991), http://unscr.com/en/resolutions/doc/713.

an arms embargo in September 1991 with the UNSCR 713. This resolution was not successful in stopping the fighting, and the UN authorized the deployment of UNPROFOR in 1992.

The force was first tasked to monitor the cease-fire between the warring factions. However there was no cease-fire. Undeterred by the embargo or UNPROFOR, and after provocations from the Serbian President, the Bosnian Serbs escalated the fighting against the Bosnian Muslims, and began a siege on the city of Sarajevo in April 1992.[41] By July, the situation has worsened and forced the requirement for UN humanitarian assistance in Sarajevo. These aid efforts were either dramatically slowed or stopped by the Serb fighters, and due to the reluctance of the UN to utilize force, they refused to end their siege on the city. Then in 1993, the Bosnian Croats launched an offensive against the Bosnia Serbs and Muslims, which marked the beginning of their significant military role in this conflict. The Bosnian Muslims were also implicit in encouraging violence, as Muslim authorities were known to "have condoned or even encouraged harassment and violence to drive non-Muslims"[42] out of Sarajevo. The different sides of the conflict were intent on forcing out the opposing soldiers and civilians from their claimed territories, and they were not above ethnic cleansing. Unfortunately, due to the long history between the different the three factions going back to the Ottoman Empire, "ethnic cleansing in Bosnia was not a by-product of the war; it was one of its principal objectives."[43]

As it turns out, the ethnic cleansing reached its peak in 1995. The Bosnian Serb military were determined to launch an offensive designed to end the war by the end of that year. UNPROFOR was left to either defend the Muslim victims, or preserve its neutrality. The US was looking to conduct air strikes against the Serbian fighters, while the Europeans were more

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[41]Carol Off, *The Lion, the Fox and the Eagle* (Canada: Random House Canada, 2000), 141.

[42]John M. Fraser, "Evaluating the peace process: Can all NATO'S forces and all Dayton's men put Bosnia Herzegovina together again?," *Canadian Foreign Policy Journal* 5, no. 2 (1998): 174.

[43]*Ibid.*, 170, 172.

interested in maintaining a humanitarian agenda. Ultimately, the European proposal was chosen, leaving the Bosnian Serbs to pursue their strategy. In July 1995, they proceeded to attack one of the international "safe" areas established by the UN, Srebrenica. In a 10 day period, the Bosnian Serb fighters drove out tens of thousands of Muslims from this town, while at the same time, separating the men from the women and children. What followed was "mass murder on a scale not witnessed in Europe since the end of World War II,"[44] when more than 7000 men of all ages were executed. All the while, the UNPROFOR Dutch battalion that was responsible for protection of Srebrenica, due to their lack and support or mandate, could do nothing but "stand aside and witness an act of mass murder take place before their eyes."[45]

These increases in hostilities and violence resulted in the UN soldiers being stuck in the middle of a three-way military and political power struggle that they were not resourced or politically supported to stop.[46] As a result of the changing situation, the ongoing war and conflicts, and initial and continued misunderstanding of the environment, the operational plan for the region continually developed and changed over time. First, UNPROFOR was tasked to monitor a non-existent ceasefire and create the conditions for an overall settlement. Then they were asked to establish UN Protected Areas (UNPAs), which were soon expanded to include the surrounding "pink zones" in order to help control the flood of refugees. By the summer of 1992, the violence in Sarajevo increased to the point where the city was under siege, and so UNPROFOR moved to ensure security at the airport and the delivery of humanitarian assistance, first to the city, then throughout Bosnia. "Safe areas," similar to UNPAs, were then established in six cities across Bosnia that were intended to protect non-combatants. UNPROFOR was given

[44]Ivo H. Daalder, "Decision to intervene: How the war in Bosnia ended," *Foreign Service Journal* 75 (1998): 3.
[45]Michael Cessford, "Canada and Contemporary Peacekeeping Operations," *CDA Institute Blog: The Forum*, 2 February 2016, https://www.cdainstitute.ca/en/blog/entry/canada-and-contemporary-peacekeeping-operations, 4.
[46]United Nations, "United Nations Peacekeeping: Post Cold-War Surge…

authorization to use force in self-defence only if UN forces were attacked in these areas, and to coordinate with both the UN and the North Atlantic Treaty Organization (NATO) for supporting air power.[47] The tight rules of engagement and the requirement for inter-organizational coordination hampered intentions of the UN forces on the ground, as the massacre in Srebrenica exemplifies.

Although the operational design of this mission had a number of tactical challenges, there were also unanticipated second- and third-order effects due to misunderstanding of the interdependencies and impacts of actions. One of the unexpected interdependencies that grew out of the humanitarian agenda in Bosnia was how the criminalized war economy flourished. This was particularly noted in Sarajevo where the UN intervention, although intended to help the starving and helpless civilians within the besieged city, ended up creating a "lucrative environment for black marketeers, who were empowered to trade across frontlines, slip in and out of closed areas, transform humanitarian supplies into hard currency and obtain access to weapons and other vital war supplies."[48] This type of interdependency was not just unexpected, but also counter-productive for the UN mission. The profiting groups ended up being eager to prolong the siege as the aid became currency.

As demonstrated by the massacre at Srebrenica, the UN had little ability to enforce any of their operational objectives. Shortly after this tragic event, the world leaders met at the London Conference and began the process which ultimately led to the Dayton Agreements, the withdrawal of UNPROFOR in December 1995, and the deployment of NATO soldiers to enforce

[47]United Nations, "Former Yugoslavia – UNPROFOR," http://www.un.org/en/peacekeeping/missions/past/unprof_p.htm, last updated 31 August 1996, last accessed 4 May 2016.

[48]Peter Andreas, *Blue Helmets and Black Markets: The Business of Survival in the Siege of Sarajevo* (Ithaca: Cornell University Press, 2008), *eBook Collection (EBSCOhost)*, last accessed 9 May 2016.

the cease-fire arrangements.[49] In the three years that the UNPROFOR was deployed, it had not managed to achieve any of its mandates. As aptly put by Fraser in his evaluation of the Bosnian peace process, "there was a somewhat quixotic tendency to believe that even the essentially symbolic presence of the United Nations … would in itself make the warring parties see reason or at least refrain from egregious behaviour."[50] Although the operational objectives may have worked in the past in other UN missions, the failures in Bosnia show that a misinterpretation of the situation can lead to tragic consequences.

In this case, the UN force was unfortunately deployed without a complete understanding of the environment, the problem or the solution. The goal of Design is to ensure the leaders and planners are fully cognizant of all the factions and their interdependencies involved in the conflict. With a clear appreciation, a leader can determine the resources needed to perform the mission, or if resource constrained, re-frame the problem so that the available resources are adequate. In Bosnia, there was a gross underestimate of the lengths that each side was willing to go to achieve their aims. The UN also did not prepare or resource their deployed forces for the resistance that they would ultimately face through adequate training, rules of engagement, or supporting air power. The second- and third-order effects in Sarajevo could have also been discovered through a Design methodology, particularly when one looks at the impacts of providing aid to a besieged city. Although UNPROFOR was a difficult lesson, a new PSO looms on the horizon and it underscores the need to carefully analyze the environment, problems and solutions before and during future operations utilizing Design theory.

Current Operating Environment's Challenge for PSOs

[49]Cessford, "Canada and Contemporary Peacekeeping Operations…, 4.
[50]Fraser, "Evaluating the peace process…, 178.

When faced with impending future Peace Support Operations, the current operating environment will pose some significant challenges for military leaders and planners. As Dr. Howard Coombs and General (retired) Rick Hillier explain in their investigation on military planning, "the practical application of … [the] operational design method is neither simple nor straightforward, particularly during peace support operations."[51] They forecast that future PSOs, particularly in a post-conflict environment as is expected for Canada's next mission, will be more complex and ill-structured. This could lead to further potential misunderstanding about the operational environment and potential challenges identifying the true problems. In a recent interview, Major-General Lewis MacKenzie stated that one of the biggest concerns in this warfighting mission will be identifying all of the groups that Canada will need to address. For example, the current UN peacekeeping mission in the Democratic Republic of Congo is facing 11 different factions.[52] It is evident that utilizing Design Theory will be necessary moving forward due to the clearly wicked problem that these operations will pose.

In addition to the complexity of the environment, the solution will also involve a requirement for joint, multinational and multi-agency (JIMP) engagement. As explained by Coombs and Hillier, "it is necessary to approach the difficult quandaries posed by PSOs holistically, and to identify points that must be addressed simultaneously across elements of national power in order to achieve the desired results."[53] The holistic view of a mission, be it UN or otherwise, will end up identifying non-traditional tasks for military organizations. These

[51]Howard G. Coombs and General Rick Hillier, "Planning for success: The challenge of applying operational art in post-conflict Afghanistan," *Canadian Military Journal* 6, no. 3 (2005): 6.

[52]"Prime Minister Trudeau is in New York at the United Nations this week pressing his case for a seat on the Security Council. Retired Major General Lewis MacKenzie explains why that may not be possible," *CBC News Ottawa*, 17 March 2016, http://www.cbc.ca/news/canada/ottawa/programs/ottawamorning/retired-major-general-lewis-mackenzie-1.3495519.

[53]Coombs, "Planning for success…, 12.

responsibilities may still fall to the military to conduct, but by identifying them early and preferably before deployment, soldiers can be trained and situated for success.

Tasks which are non-military in nature, or at least not traditionally military in nature, are likely to occur more frequently in the future. Espen Barth Eide, the current UN Special Advisor on Cyprus in his exploration of how peacekeeping has evolved since the Cold War, explains that the peacebuilding process is not just for military tasks. He states that the "longer-term tasks of state-building, reforming the security sector, strengthening civil society and promoting social reintegration"[54] all need to be addressed in a comprehensive approach. In order to identify all of these different facets of the process, it is critical to have a deep investigation into the environment and actors involved – an essential step in the Design methodology.

Canada's involvement in future PSOs will not only be more complex due to the geography and demographics of the region of the mission, but also due to the composition of the UN force. There has been an emergence of interest in UN peacekeeping operations from countries that Canada has not traditionally operated with. Soldiers from third-world countries are being utilized with increasing regularity as the first-world countries have reduced their peacekeeping contributions. Canada will need to be prepared to work alongside soldiers from places like Bangladesh, Papua New Guinea, Togo, Ethiopia, Gambia, Ghana, Nepal, Thailand, Kenya, Lesotho, Namibia and Zimbabwe.[55] This will pose a challenge unto itself as not only are the soldiers generally ill-equipped, poorly led and unprepared, but the contributing nations will be governed by "national caveats that far too often impede their effective employment."[56] There is also another concern, as explained by Major-General (ret) MacKenzie, that the peacekeepers

[54]Espen B. Eide, "Peacekeeping past and present," *NATO Review* 49, no. 2 (2001): 8.

[55]Matthew Fisher, "Canadian forces bracing for hazardous UN peacekeeping mission in Africa – and potential budget cuts," *National Post* (21 March 2016), http://news.nationalpost.com/news/canada/matthew-fisher-canadian-forces-bracing-for-hazardous-un-peacekeeping-mission-in-africa-and-potential-budget-cuts.

[56]Cessford, "Canada and Contemporary Peacekeeping Operations…, 5.

are being sent not for altruistic reasons, but for financial gain. The UN gives $1000 per month for each soldier deployed to a mission back to the country who contributes. In the case of Bangladesh, this results in $110 million back to their government.[57] The UN force composition will be a challenge unto itself, and one that must be carefully managed through planning and campaign design that accounts for these compounding issues.

It is clear that future PSOs will not be straightforward, but neither was the situation in Bosnia for UNPROFOR. Throughout that operation, there were bureaucratic and resource barriers that kept the force from being able to adapt or react to the changing situation. However, this highlights one of the particular challenges from that operation: the constantly changing mandate. The UN passed more resolutions on the conflict than for any other conflict in its history.[58] This caused not only confusion at the tactical level on the ground, but also at all the other levels of military and within the governments of contributing nations. Maintaining a clear, centralized strategy ensures that there is no mission creep and end-state targets do not keep shifting.[59]

To avoid a shifting centralized strategy, the Design Methodology could be utilized to identify the environment, problem and solutions before deployment. This methodology will also be able to bring to light any resource or rules of engagement shortfalls that the mission might have. As an iterative process, Design will also be able to adjust to the environment as it changes, and the missions can be further adapted based on the responses to the peacekeeping efforts on the ground. Adaptation of missions and an unwavering centralized strategy can coexist, as long as

[57]"Prime Minister Trudeau is in New York at the United Nations…

[58]Off, *The Lion, the Fox and the Eagle…*, 142.

[59]Christian Leuprecht, "Conclusion," in *Security Operations in the 21st Century: Canadian Perspectives on the Comprehensive Approach*, ed. Michael Rostek and Peter Gizewski (Kingston and Montreal: McGill-Queen's University Press, 2011), 246.

the desired solution space is set during the planning stages. There can also be mild corrections to the solution as well, but all stakeholders, military and civilian, must be in concurrence.

The Design Methodology can also be used to address the concerns resulting from the multinational composition of the UN force. The clearly defined goals and lines of effort will be identified early, but so will the limitations of friendly forces. With these, the leaders can appropriately brief shortfalls, and prepare for the restrictions that the less adequately trained and equipped forces may bring to the mission. Through the Design process, limitations will cause the leaders and planners to re-frame the problem which will ensure that the resources available complement the solution and the environment. By doing this, the solutions to the problems not only become achievable with the deployed UN force, but also help to resolve the PSO and strengthen the UN as a global organization.

Conclusion

It is anticipated that Canada may soon be engaged in a new PSO that will pose serious challenges to its military leaders and planners. This PSO will bring with it challenges inherent to today's changing global environment: internet and communication-savy adversaries, non-state actors, and the absence of an agreed-upon ceasefire compounded by potentially hostile local populations. However, it will also bring a new face to UN peacekeeping operations as less-developed countries are volunteering to participate. Canada's experience in Bosnia shows that changing centralized strategies and poorly resourced and enabled UN soldiers can contribute to devastating consequences. A clear identification of the environment, the problems and the solutions through a Design Methodology will alleviate many of the challenges that future PSOs will pose. This methodology can fill in the gaps between strategic guidance and tactical planning, and help operational planners both appreciate and tackle complex and ill-structured problems.

Due to the wicked problems that PSOs may present, the CAF should utilize Design to develop an appreciation and a campaign plan that embraces both a broad approach and robust resolution. The ultimate goal of Design is to guide the development of operational plans and orders. It must be based on a clear understanding of the environment, context, problems and adversaries, and the required approaches and actions to counter these issues. Through the analysis of the Bosnian case study, and the examination of the components of Design Theory, this paper has clearly demonstrated the need to incorporate Design in operational planning for future PSOs. This was evidenced through the examination of the challenges faced in Bosnia and how these could have been avoided. Future PSO challenges are clearly going to be wicked problems, and the current planning methods are ill-prepared to tackle this conundrum. The Design methodology also has the potential to help the CAF from repeating mistakes made in the past. As Sir Winston Churchill famously states, "those who fail to learn from history are doomed to repeat it." It is projected that Design will overcome the burdens of the past, mitigate issues in the present and help shape the mandate of future peace support operations.

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