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## LEAVING THE CATHEDRAL FOR THE BAZAAR: THE CANADIAN ARMED FORCES AND A NEW SECURITY PARADIGM

Major S.J. Parker

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By Major S.J. Parker

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## **ABSTRACT**

While the industrial states' militaries have been planning for a conventional fight against a near-peer opponent, there has been a quiet revolution in military affairs (RMA) from the adversary in terms of Command and Control and how they operate. Open source characterizes how micro-actors recruit, train, equip, communicate, and structure themselves in order to conduct operations. These organisms learn, share, and adapt to the changing environment more frequently than modern hierarchically structured entities. The modern military might learn some lessons from emerging trends such as the open source movement.

For the modern military to remain competitive in the new security paradigm, it must undergo changes. By transitioning from a rigid cathedral structure to a hybrid entity, combining decentralization, some centralization, and tapping into new and emerging technologies and social and organization trends, armed forces will retain the capability and capacity to meet and defeat the new threats in a complex and nebulous bazaar. Remaining mired in an old paradigm with inaccurate expectations will result in costly endeavours without resolution.

## INTRODUCTION

*While no one can see the future, it is at least possible to indicate a few of the directions that change is likely to take.*

Martin Van Creveld<sup>1</sup>

War is, and will remain, a contest of wills.<sup>2</sup> However, the nature of the contest can and will change. Globalization and rapidly changing technology have created a new environment in which conflict is being waged.<sup>3</sup> Recent conflicts such as Iraq, Afghanistan, Somalia, and others, have redefined the character and scope of warfare. Indeed, the changes have been so significant that the spectrum of conflict is much more complex, causing modern military forces to reassess how they structure, generate, equip, and employ forces in order to address the future security environment.<sup>4</sup> The Canadian Armed Forces (CAF) are struggling with this notion currently.

The adversaries of today and tomorrow can be characterized as loose, non-hierarchical, nodal, flattened, interconnected, leveraging information technologies, working towards a common or shared interest.<sup>5</sup> Much like a Middle Eastern bazaar or market, a social and cultural ritual where elements of society gather and exchange or barter for goods and services.<sup>6</sup> In this case the bazaar or market is facilitated by modern

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<sup>1</sup> Martin Van Creveld, *The Transformation of War* (New York: The Free Press, 1991), 198.

<sup>2</sup> Carl von Clausewitz, *On War*, Edited and translated by Anatol Rapoport and J.J. Graham (London: Penguin Books, 1982), 101.

<sup>3</sup> Shaye K. Friesen and Andrew N. Gale, "Slaying the Dragon: The Future Security Environment & Limitations of Industrial Age Security," *Canadian Military Journal* 11, no. 1 (Winter 2010): 33.

<sup>4</sup> Department of National Defence, Directorate of Land Concepts and Design (DLCD), *Army 2040: Trends, Challenges and Implications for Canada's Army* (Ottawa: DND Canada, 2010), p2. This document is unpublished.

<sup>5</sup> Peter Gizewski, "Political Dimension," in *Toward Army 2040: Exploring Key Dimensions of the Global Environment*, Lieutenant Colonel Michael Rostek, et al., The Claxton Papers 14 (Kingston, Defence Management Studies Program School of Policy Studies:2011),16-18.

<sup>6</sup> "The Middle Eastern bazaar is much more than a context for commerce: ... markets, regardless of their location, scale, and permanency, have also played important cultural roles within their societies, reflecting historical evolution, industrial development, social and political conditions, urban morphology, and

communication technologies, and the goods and services enable the waging of war against nation states. Indeed, the bazaar enables, not just large groups, but individuals as well, in the waging of war. This is a new paradigm in security and instability faced by modern, industrial nation-states and their armed forces. These entities are capable of responding to challenges much more quickly than hierarchical, structured, top-down driven organizations and thus seem to have adopted new concepts of warfare.

The CAF is one of these structured, top-down driven organizations. Resembling the structure of a church or cathedral, the CAF functions as a rigid hierarchy, constrained by fiscal limitations, bureaucratic tendencies, encumbered with a departmental structure that is controlled by civilian oversight, and subject to public accountability.<sup>7</sup> The CAF, like any bureaucracy is slow moving, is subject to political dictates, and its ability to change and adapt rapidly is severely limited. Cathedral organizations tend to be oriented towards the past and myopic when it comes to the future.<sup>8</sup> Cathedral organizations have a difficult time remaining relevant and competitive in an ever changing environment.

The purpose of this paper is to argue that in order to remain current and relevant in this new complex battlespace, modern western security forces need to change the way they structure, generate, equip, and employ forces in order to counter new threats. Indeed, modern armed forces should consider adapting the way they operate, moving from a cathedral-like organization and adopting the means to demonstrate exceptional agility, in an unconstrained organizational concept, that moves power from the centre,

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architectural functions.” Taken from: Mohammad Gharipour, *The Bazaar in the Islamic City: Design, Culture, History*. (Cairo: The American University in Cairo Press, 2012)

<sup>7</sup>Alan Okros, John Verdun and Paul Chouinard, *The Meta-Organization : A Research and Conceptual Landscape*, Defence R&D Canada Technical Memorandum, Centre for Security Science (July 2011).

<sup>8</sup> James F Dunnigan, *Digital Soldiers: The Evolution of High-Tech Weaponry and Tomorrow's Brave New Battlefield* (New York: St. Martin's Press, 1996): 287.

distributing it across the force for rapid execution. To do this will require an acceptance of the new paradigm in security and stability, and the adoption of new ways of thinking. For the modern military professional the former is easy, the latter not so much.<sup>9</sup>

In the discussion which follows, this paper will outline the degree to which the CAF should transition from a cathedral organization to a more fluid and agile entity, capable of competing with the adversaries of today and tomorrow. The discussion will begin by defining the concepts and assumptions which will form the backdrop for the remainder of the discourse and will include the key characteristics of the threat. Next, this paper will discuss the variables that demonstrate the evolution and operating concept of bazaar entities, how the CAF conducts business now, and some advancements in open source concepts and ideas. Finally, the discussion will offer a set of policy prescriptions as guidance for informing capability development of future operating concepts. The endstate of this paper will provide a greater understanding of the changes that must occur for the CAF, in order to compete in the new paradigm of conflict.

## **OPERATIONAL ENVIRONMENT**

In order to understand the new paradigm that modern military forces are now faced with, it is important to understand the context. What follows are some important concepts and assumptions that provide context to what should be considered the “new normal” for armed forces. These concepts include globalization and its impact on both the international system and the development of warfare. As well, a threat model will be developed to define how adversaries today conduct operations.

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<sup>9</sup> It should be noted that the purpose of this paper is not to offer a new structure or order of battle, nor will it provide recommendations on specific capability. Rather, it suggests to the military professional a new way of thinking about the application of force and how the new threats should be viewed.

Globalization has changed the world and by extension the way that war is waged.<sup>10</sup> The underlying ideology of globalization is inter-connectivity and interdependence. With the advent of globalization, the technological, political, and legal boundaries to world-wide communications, transportation, travel, and trade have been reduced while the trans-national movement of goods, services, labour, and capital has increased.<sup>11</sup> Changes such as these have had a stabilizing effect on the global security environment, facilitating a reduction in interstate conflict, as states find themselves connected to each other more than ever. With these changes however, there has been an explosion of quasi and non-state actors on the world stage, pursuing their individual agendas, increasing the complexity of the international environment.<sup>12</sup> The 21<sup>st</sup> century is still relatively new and there is already a world-wide perception that the global community is confronted with threats, or “wicked problems”, of unprecedented scope, scale and complexity.<sup>13</sup>

The Westphalian system, which places the nation state at the centre of the international system to the exclusion of other emerging actors, is the contemporary international system which traditional industrial states base their world view upon, and structure themselves accordingly.<sup>14</sup> The previous security environment consisted of state-versus-state conflicts typically centered around an ideology or politics; with some cases of religious-based conflict. Scholars of international relations and international law now accept that the framework of governance, known as the Westphalian system, is

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<sup>10</sup> Friesen, “Slaying the Dragon...”, 33.

<sup>11</sup> Gizewski, “Political Dimension...”. 16-18.

<sup>12</sup> African Studies Centre, “Failed and Collapsed States in the International System.” A Report Prepared by: The African Studies Centre, Leiden, The Transnational Institute, Amsterdam, (December 2003), 5.

<sup>13</sup> Okros, Verdun, and Chouinard, *The Meta-Organization...*, Section 2-2. Wicked problems are those that involve “complex, dynamic, multi-faceted, often chaotic and contradictory types of social issues that are very difficult to comprehend let alone define or solve.”

<sup>14</sup> Friesen, “Slaying the Dragon...”, 35.



ineffective in an interdependent and interconnected world.<sup>15</sup> The international stage now has many new actors that compete with the state.

The characteristics of the new security environment include failed and failing states, rogue states, and regional blocs.<sup>16</sup> Stability is threatened by populations split along religious lines, shortages of critical resources (such as minerals, water, and food stuffs),<sup>17</sup> transient populations crossing boundaries and even continents, a shift of populations from rural areas to cities, higher unemployment, and a greater level of haves and have-nots globally.<sup>18</sup> These challenges provide new levels of threat to the state, such as international criminal organizations, terror related groups, military juntas abusing human rights, rising extremist groups, and self-interest groups seeking solutions outside of the law.<sup>19</sup> The new threats have contributed to a previously unknown complexity in international relations leading to new ways of dealing with these challenges - in effect a paradigm shift.

Indeed, globalization and rapid technological changes have remade the face of warfare. With the advent of inter-connectivity and interdependence, the days of the Westphalian concept of state-on-state warfare, or inter-state industrial war, are now remote.<sup>20</sup> This concept of war has been developed over the last 400 years. In the 1600s, Gustav II Adolf, King of Sweden, laid the foundations for today's form of warfare.

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<sup>15</sup> Obijiofor Aginam, "From Westphalianism to Global Governance: The G8, International Law, and Global Health Governance Through Public-Private Partnerships" *Paper presented at the annual meeting of the International Studies Association 48th Annual Convention*, (Chicago, IL, Feb 28, 2007). n.p.

<sup>16</sup> Directorate of Land Concepts and Design. *Army 2040...*, 56.

<sup>17</sup> Roger E. Kanet, *The New Security Environment: The Impact on Russia, Central and Eastern Europe*. (Aldershot: Ashgate Publishing, Ltd., 2005), n.p.

<sup>18</sup> Phil Williams, "Warning Indicators, Terrorist Finances, and Terrorist Adaptation." *Strategic Insights*, IV. Iss 1 (January 2005), 2.

<sup>19</sup> *Ibid.*, 3-4.

<sup>20</sup> Rupert Smith, *The Utility of Force: The Art of War in the Modern World*. (London: Random House, 2005), 3-4.

Gustav II Adolf initiated a style of warfare predicated upon trained, structured, and standing military forces, harnessing technology, employing combined arms tactics, in order to prosecute national policy on behalf of the nation-state.

Warfare evolved further in the 1700s under the King of Prussia, Frederick the Great. He developed the notion of securing a decisive victory, gained through speed, manoeuvre, and initiative, while in pursuit of national objectives.<sup>21</sup> Napoleon I, considered the father of modern warfare, took the lessons of Sweden and Prussia, and further refined them. His concept of war saw formed armies, enabled by new structures, and combining technology of the day. This all-arms methodology, optimized speed and manoeuvre, and destroyed opponents on the battlefield through superior movement and firepower. He sought to create a tempo that bent adversaries to his will. Napoleonic warfare modified the way and means of conflict. Follow-on wars, such as the US Civil War and World War I (WWI) were certainly influenced by Napoleon's concepts. The Napoleonic style of warfare also influenced military theorists such as Carl von Clausewitz and Antoine-Henri Jomini, the authors of classical warfare. Therefore, the ways, means, and ends for waging warfare today were established 400 years ago, and have changed relatively little in four centuries. However, the environment and the threats have changed significantly in a relatively short period of time.

The likelihood of major war between two modern states is highly unlikely. Most wars between large nations since 1945 have been very few, limited in time and space, lacking a decisive victory.<sup>22</sup> The first public indications of a shifting paradigm can be

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<sup>21</sup> R.R. Palmer, "Frederick the Great, Guibert, Bülow: From Dynastic to National War." In *Makers of Modern Strategy: From Machievelli to the Nuclear Age*, edited by Peter Paret. (Princeton NJ: Princeton University Press, 1986), 97

<sup>22</sup> Smith, *The Utility of Force...*, 6.

attributed to President John F. Kennedy.<sup>23</sup> In 1962 President Kennedy gave his famous speech to a West Point graduating class, declaring that Vietnam heralded “another type of war, new in intensity, ancient in its origins”.<sup>24</sup> Kennedy’s speech described this new type of warfare as fought by “guerrillas, subversives, insurgents, assassins”, fought by techniques such as “ambush instead of by combat, by infiltration, instead of aggression, seeking victory by eroding and exhausting the enemy instead of engaging him”.<sup>25</sup> Even though Kennedy was describing the tactics of small wars, which had occurred for centuries, what was new was the context in which these wars were being fought. The Vietnam War was not a conventional war, in the classical sense experienced in Europe and Korea, but rather a complex problem in security and stability. Frederick the Great’s decisive victory does not exist in these wars. As Kennedy stated, this new type of warfare needed “a whole new kind of strategy”<sup>26</sup>, a strategy that combined all instruments of national security to achieve a solution.

Since the end of WWII, the context of conflicts has been experiencing perpetual change. As the security environment changed and opponents were no longer recognizable as conventional military adversaries, the Wars of Liberation evolved into something else.<sup>27</sup> Decisively defeating an opponent on the battlefield became secondary to the competition for “influence and legitimacy over relevant populations”<sup>28</sup> Simply sending military forces to manage a crisis was no longer sufficient and, as Kennedy

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<sup>23</sup>Lieutenant-Colonel Michel Henri St-Louis, “A Comprehensive Approach to Stability: The Strategic Advisory Team in Afghanistan.” *Canadian Army Journal* 10, no. 4, (Winter 2008), 48.

<sup>24</sup> John F. Kennedy, “Remarks at West Point to the Graduating Class of the US Military Academy” (6 June 1962).

<sup>25</sup> *Ibid.*

<sup>26</sup> *Ibid.*

<sup>27</sup> United States. Department of Defence. *Irregular Warfare: Countering Irregular Threats*. Joint Operating Concept Ver 2.0. (17 May 2010), 4.

<sup>28</sup> *Ibid.*, 5.

stated, a new strategy was needed. This strategy, holistic in nature, combined both hard power and soft power (all tools of national security) in a comprehensive approach to the problem.<sup>29</sup> Therefore, comprehensive operations are those operations that see a combined approach by the state to utilize both hard and soft power within the modern complex battlespace to achieve the nation-states objectives.<sup>30</sup>

The Arab-Israeli Wars are a sign of the new paradigm. Although regional in nature, these wars, are really a continuation of the same conflict, have evolved from state versus state into state versus a variety of non-state actors. This is indeed the “new normal”. Today Israel wages continuous war with *Hamas*, *Hezbollah*, and others.

Some would site the Falkland Islands War as an affirmation that state on state warfare is not over and a confirmation that modern military forces must be structured, trained, and ready to meet a peer or near-peer foe. However, this is a false assumption. In retrospect, the Falklands War was waged between two modern nations using current weapons and tactics, limited in time, space, and scope; characterized by asymmetry. In reality the actions on the Islands can be characterized as simply a large scale raid against a defended locality. Neither Argentina nor England were in any way threatened with military force. Massed fires or large manoeuvre formations were not used. Even the air and naval components were relatively small in size for the modernity of their parent nations. Arguably, the biggest lesson from the Falklands was a need for a modern military force that is highly agile and adaptable.

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<sup>29</sup> Mark N Clemente, “Comprehensive Thinking and Defense Analysis Transformation.” Presented at the 16th International Command and Control Research and Technology Symposium. (Quebec City, Canada: June 21-23, 2011), 1-2.

<http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA547151> (accessed 21 February 2013).

<sup>30</sup> Okros, Verdun, and Chouinard, *The Meta-Organization...*, Section 2-1.

Russia has found itself engaged in a number of conflicts with non-state actors in Chechnya. The war in Chechnya saw the armed might of a modern state brought to bear upon a provincial insurgency in order to stop instability. The conflict evolved into a lengthy campaign against armed insurgents, dispersed, fighting a guerrilla war across time and space. As of 2012, the conflict is still unresolved and a decisive military victory non-existent.<sup>31</sup> Indeed, Chechen militants have even been seen outside the borders of Russia, working with Syrian insurgents to fight against the Assad regime.<sup>32</sup>

Iraq and Afghanistan are further examples of the “new normal” in conflict. In both situations, what started out as state versus state conflict evolved into a highly complex and fluid battlespace characterized by asymmetric forces employing both conventional and unconventional tactics, equipment, and combatants. In both cases, the actual battle between nations ended quickly due to advanced technologies associated with such capabilities as stealth, precision, and information collection. With the defeat of the structures of national control, such as the governmental functions, law enforcement, and armed forces, Iraq and Afghanistan became hollowed out states, where chaos and disorder reined, and non-state actors flourished.<sup>33</sup>

In these hollowed out states, the military forces of modern nations are now forced to step in and become the primary actor in providing governance, security, and economic prosperity. In this role they become competitors with non-state actors in the struggle for control and support of the population. Why is this any different today than during the days of Mao? The significant difference today is the shift in economic power from a

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<sup>31</sup> Mairbek Vatchagaev, “Chechnya’s Insurgency Stubbornly Remained Active in 2012.” *Eurasia Daily Monitor* 10, Iss 5, (January 11 2013).

<sup>32</sup> *Ibid.*

<sup>33</sup> John Robb, *Brave New War: The Next Stage of Terrorism and the End of Globalization*. (New Jersey: John Wiley & Sons, 2007), 18-19.

centralized model with the nation-state to a more decentralized model established by the powers of globalization. John Robb, author of *Brave New War*, refers to this as, “an evolutionary leap in the method of warfare.”<sup>34</sup> It is evolutionary in that non-state actors, no matter how small, can fight against states and possibly win. In fact, even the individual now has the means at his / her disposal to wage war against the state.

Warfare has undergone significant changes and potential adversaries have adapted to these changes. Modern Western warfare concepts, however, have not changed. In *Land Operations 2021*, the Canadian Army has stated that even in the future, combat operations will “focus primarily on offensive and defensive actions and aim at defeating the enemy’s forces and/or securing terrain.”<sup>35</sup> The Western style of warfare, with its beginnings in Sweden, and as codified by notables such as Clausewitz and Jomini, continues to define how the modern armed force operates.<sup>36</sup> Indeed, military professionals continue to study and utilize these ideas. More importantly though, the Western mode of warfare has also shaped the way political leaders view war. Indeed, perceptions and expectations on the waging of war have been inculcated within the collective understanding of both military and civilian alike. Such things as decisive victory, securing peace, restoring normalcy are all ideas and notions associated with the concept of modern war. The defeats of nation-states in the Westphalian style of warfare of World War I and II have reinforced these notions. It is this older paradigm and its associated expectations that firmly hold Western military forces in place and disadvantage them against the new threats to peace and security.

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<sup>34</sup> Robb, *Brave New War*, 21.

<sup>35</sup> Canada. Department of National Defence. Directorate of Land Concepts and Design. *Land Operations 2021: Adaptive Dispersed Operations*. (Ottawa: DND Canada, 2007), 7.

<sup>36</sup> Paul K. Van Riper, “Planning For and Applying Military Force: an Examination of Terms”, Strategic Studies Institute. (n.p.: 2006), 1-2.

## The Threat

The threat to peace and security comes from non-state actors who are motivated by a shared desire to see the failure of the international system and the nation-state. Within weakened and failed states, these small groups are able to prosper and evolve. They are typically small, loose, cell-like organisms, which function using decentralized networks.<sup>37</sup>

Rhizomatic in nature, these non-state actors are structured in a horizontal manner, operating underground, spreading out networks of roots and shoots from nodes. They are globally integrated and leverage rapid technological developments in order to further their cause.<sup>38</sup> Their strengths reside in their adaptability, agility, short decision-action cycles, and ability to rapidly learn. Their preferred strategy is systems disruption, using guerrilla and terrorist tactics to target those systems that support the Western way of life, and if damaged, undermine the legitimacy of the state. These groups prefer to operate within the power vacuum provided by failed or failing states. To define these groups collectively, one would argue that they are hybrid threats, “any adversary that simultaneously and adaptively employs a tailored mix of conventional, irregular, terrorism and criminal means or activities in the operational battlespace. Rather than a single entity, a hybrid threat or challenger may be comprised of a combination of state and non-state actors.”<sup>39</sup> For the purposes of this paper, these hybrid threat organizations will be referred to primarily as insurgents, however the terms militants and rebels are interchangeable.

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<sup>37</sup> John Arquilla and David Ronfeldt, *Networks and Netwars: The Future of Terror, Crime, and Militancy*. (Santa Monica: National Defence Research Institute, Rand Corporation, 2001),314.

<sup>38</sup> Arquilla and Ronfeldt, *Networks and Netwars...*, 311.

<sup>39</sup> Definition adopted in support of US Joint Forces Command hybrid war conference held in Washington, D.C., February 24, 2009.

For most insurgent, adaptability, structure, and support systems are the core factors that enable these groups with strength and resiliency. The most successful and enduring insurgent groups, such as the *Hezbollah*, Irish Republican Army (IRA) and al Qaeda (AQ), have adapted to the changing global environment, modifying their structures to respond to the needs of the group, managing to maintain a sufficient support system that sustains them.<sup>40</sup> Militant groups today adapt to the ever changing environment or, like the dinosaurs, die out.

### Adaptability

Given the rapid changes to society due to globalization, adaptability is by far the most important factor for insurgent groups. Some are extremely successful such as the IRA, AQ, and the *Salafi mujahed*. Groups such as the 1970s guerrilla groups<sup>41</sup> and more recently, those similar to the Egyptian Islamic Jihad (EIJ) have had less success adapting.<sup>42</sup>

AQ is arguably the penultimate example of a militant, non-state actor group that has been able to change and adapt with the environment. The pre-cursor to AQ, the *Maktab al-Khidimat* (MAK), formed in 1980, was a supporting organization that was set up to provide funds and recruits to fight the insurgent war against the Soviet forces occupying Afghanistan.<sup>43</sup> The MAK evolved into AQ after the ousting of Soviet forces from Afghanistan. AQ has waged a war against the “far enemy” since the 1990s, launching their most notable success, 9/11 from Afghanistan. AQ has been the primary

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<sup>40</sup> Bard E. O'Neill, *Insurgency & Terrorism: From Revolution to Apocalypse*. 2<sup>nd</sup> Ed. (Washington: Potomac Books, Inc, 2005), 74-75.

<sup>41</sup> *Ibid.*, 76

<sup>42</sup> Michael Scheuer, *Through Our Enemies' Eyes: Osama bin Laden, Radical Islam, and the Future of America*. (Washington, DC: Potomac Books, 2006), 20.

<sup>43</sup> Marc Sageman, *Understanding Terror Networks*. (Philadelphia: University of Pennsylvania Press, 2004, 2004), 35.



object of the international community's efforts to combat this type of aggression.

Although much reduced, it still manages to survive because it has evolved.

AQ no longer needs to plan and execute its own attacks. It acts more as a catalyst for others. Regional or smaller groups have transitioned from directly subordinate, to loosely affiliated, with AQ. These groups draw their inspiration, rather than direction, from AQ tapes and messages<sup>44</sup> and the internet. Smaller groups tend to pursue their own agendas and objectives but in line with the overall intent of AQ.<sup>45</sup> Today, AQ inspires other groups, aids in mobilization efforts, and provides assistance with achieving their goals through a resilient, cellular, and autonomous structure.<sup>46</sup> This structure provides a greater level of security vice a traditional hierarchical structure, which tends to be inflexible and open to structural weaknesses. "Al Qaeda has created an extensive, but essentially cellular, organization that emphasizes family connections and focuses on supporting and conducting military operations rather than gradually expanding a parallel hierarchy."<sup>47</sup> By downloading responsibility for operational planning and tactical execution to smaller groups, AQ and others reduce the risk of exposure to targeting by nation-state security forces.

Successful groups such as the *Salafi mujahed* and AQ manage to reduce the threat of state efforts to counter their operations by functioning in hollowed out states and the ungoverned areas of the world. They are known to have established support nodes and training camps in Kashmir, South East Asia, such as the Philippines, and in Western

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<sup>44</sup> Sageman, *Understanding Terror Network*, 138.

<sup>45</sup> Time will tell, but research into the backgrounds of the two brothers engaged in the Boston Marathon bombings of April 2013 will most likely determine that they were self-radicalized through online social and informational mediums with ties to extreme Islamic fundamentalist teachings.

<sup>46</sup> Sageman, *Understanding Terror Networks*, 140.

<sup>47</sup> O'Neill, *Insurgency & Terrorism...*, 120.

African areas.<sup>48</sup> They are able to plan and train with relative security.<sup>49</sup> These locations fill the vacuum created by the elimination of AQ camps in Afghanistan and Sudan. The ungoverned areas rarely, if at all, see government security forces, providing militant groups with space to rest and regroup.

Another method of maintaining relevance in today's world is to change objectives. At the end of the Afghan jihad in 1989, some jihadists supported targeting the "far enemy" as opposed to the "near enemy" in an effort to keep the jihad alive and relevant.<sup>50</sup> Many insurgent groups have made an expansion from local grievances to targeting westerners and western interests. As an example, *Lashkar-e-Toiba* (LeT) originally pursued Muslim causes in Kashmir but now extends itself beyond local goals to regional objectives, including attacks against westerners. This is good news for groups such as AQ. AQ is no longer an insurgent organization per se but a "brand", placing its mark on smaller groups. The 2005 London subway attacks, which were typical tactics, techniques, and procedures (TTPs) of AQ evidence this. The perpetrators were loosely associated with AQ.<sup>51</sup> This new hybrid threat combined with AQ's virtual command and control (C2) raises global aggression and conflict to new heights.

Groups such as AQ have been able to evolve and adapt so that security forces end up in a position of reacting to their changes with little chance for proactive efforts. AQ's ability to evolve comes from its inherent capacity to respond to "environmental shaping measures" by military and intelligence agencies, its "reliance on network structures", and

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<sup>48</sup> O'Neill, *Insurgency & Terrorism...*, 147-148.

<sup>49</sup> In recent years the numbers of drone strikes on insurgents has increased in these areas.

<sup>50</sup> Sageman, *Understanding Terror Networks*, 144-145.

<sup>51</sup> *Ibid.*, 144-145.

its “ability to learn”.<sup>52</sup> Groups such as AQ demonstrate an ability to shift focus and change strategic objectives to continue to motivate and attract followers. The creation of a common enemy in the US as the “far enemy” redefined and revitalized the jihad.<sup>53</sup> By creating a common and appealing target, groups such as the *Salafi mujahed* ensure a continuous supply of new recruits.

The new militants use ingenuity to its fullest extent when planning operations. Even as security forces take measures to deny the adversaries access to technology, these groups will dedicate themselves to overcoming obstacles even to the point of constructing crude weapons and delivery systems.<sup>54</sup> Modern technology has enabled the spread of the global jihad and brought new ways of establishing close contact around the world. Transnational groups now form loose, decentralized networks that conduct limited face to face interaction in order to minimize detection by security forces.<sup>55</sup> They cultivate an ability to adjust tactics rapidly as the environment changes and as security forces, as well, change their tactics. This is evidenced by small groups operating on their own and achieving successes as was the case in the suicide bombings in Casablanca in 2003.<sup>56</sup>

Insurgent groups have evolved to cooperate along organizational lines. With the loss of state sponsorship, insurgent groups were forced to find alternative sources of support.<sup>57</sup> This drove insurgents to cooperate with criminal groups for mutual benefit. In

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<sup>52</sup>Williams, “Warning Indicators, Terrorist Finances...”, 2.

<sup>53</sup> Sageman, *Understanding Terror Networks*, 149.

<sup>54</sup> Daniel Whiteneck, “Deterring Terrorists: Thoughts on a Framework.” *The Washington Quarterly* 28, Issue 3, (Summer 2005), 187.

<sup>55</sup> Sageman, *Understanding Terror Networks*, 159.

<sup>56</sup> *Ibid.*, 54.

<sup>57</sup> Glenn E. Curtis, and Tara Karacan. *The Nexus Among Terrorists, Narcotics Traffickers, Weapons Proliferators, and Organized Crime Networks in Western Europe*. (Washington: Library of Congress, December 2002), 57.

some cases these groups became directly involved in criminal activity.<sup>58</sup> This marriage of criminal and insurgent activities tends to occur more often in unstable political and social conditions. Given that both operate within the same spheres, it is inevitable that the two coexist and work together to support and facilitate each other. Survival has forced insurgents to work together (IRA and FARC as an example) and cooperate with organized crime, drug traffickers and arms dealers. In fact, European crime syndicates have been working in conjunction with Syria to supply *Hamas* in their struggle against Israel.<sup>59</sup> These unholy combines have exploited weakened states such as Croatia or Kosovo for the acquisition of weapons, and use of drugs or gems as hard currency.<sup>60</sup>

The insurgent organizations of today and tomorrow are capable of balancing their desire to conduct operations with the reality of maintaining their support networks: this is conflict management. The groups understand only too well how much they rely upon the public opinion of their supporting populations. If a militant group takes action that could be considered to cross the line of acceptability, then they may sever the ties that bind them to their supporters. The IRA, for example, have the technical skills, the finances, and the connections with organized crime that would enable them to access the materials and resources required to build a radioactive weapon.<sup>61</sup> However, had they done so they would have alienated themselves from the global Irish Catholic community that supports the IRA and risked gaining any political goals during the peace process.<sup>62</sup> Militant

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<sup>58</sup> Moises Naim, *Illicit: How Smugglers, Traffickers, and Copycats are Hijacking the Global Economy*. (New York: Random House, 2006), 127.

<sup>59</sup> Curtis, *The Nexus Among Terrorist...*, 28.

<sup>60</sup> Naim, *Illicit...*, 55.

<sup>61</sup> John V. Parachini, "Putting WMD Terrorism into Perspective." *The Washington Quarterly* 26, Issue 4, (Autumn 2003), 46.

<sup>62</sup> Parachini, "Putting WMD Terrorism into Perspective", 46.

groups today are acutely aware of what levels of violence they can achieve without risking the public opinion of their supporters.

### Structure

The importance of structure to any organization cannot be stressed enough. The structure of an organization is dependent upon its membership, how it recruits new members, how it commands those members, and where it draws its support. Typically, when an organization is formed, be it government, business, military, even insurgent groups, it establishes a chain of command with a detailed pecking order. In this manner everyone knows where they fit within the organization. This type of structure tends towards a hierarchy which is usually rigid and structured which is good for governments and militaries. This is euphemistically referred to as a cathedral entity. However for militant groups today, hierarchies tend to be a weakness, enabling military forces to identify and target centres of gravity or critical requirements, such as leaders, just by identifying one or two people in the structure.<sup>63</sup> Over time, these groups have evolved from hierarchical organizations to cell structures and nodes, essentially flattening the hierarchy to protect itself.<sup>64</sup> Today this flattening, which is very rhizomatic, has developed even further towards cluster-like organizations, with nodal constructs such as the *Salafi mujahed*. AQ has evolved this concept even further by creating a virtual organization using modern communications technology such as the internet.<sup>65</sup>

Another structural strength of insurgent groups today is their ability to draw upon a diverse segment of the population. The membership of the *Salafi mujahed* is varied and

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<sup>63</sup> Tom Hashemi, An Introduction to Terrorist Organizational Structures. TheRiskyShift.com. 6 June 2012. <http://theriskyshift.com/2012/06/an-introduction-to-terrorist-organizational-structures/> (accessed 2 March 2013)

<sup>64</sup> Sageman, *Understanding Terror Networks*, 130.

<sup>65</sup> Scheuer, *Through Our Enemies' Eyes...*, 22-23.

diverse. According to researchers such as Marc Sageman,<sup>66</sup> there are no common profiles, traits, or characteristics for those that join the *Salafi* global jihad. Why is this a strength? Lacking a common profile it is extremely difficult for security agencies to identify, classify, and track members in these groups. As Sageman states, “profiles based on such personal characteristics as age, sex, national origin, religion, education, and socioeconomic background are of very little value in identifying” these insurgents.<sup>67</sup> Ultimately, without an ability to profile membership, anyone, anywhere can be a member of an insurgent group. This ability to blend in is the best form of camouflage and protection.

Identifying methods and centres for recruitment is a valuable tool in the security agencies tool bag. However, major guerrilla groups tend towards an informal recruitment process for new members. Current research demonstrates that recruitment is low key, unadvertised.<sup>68</sup> Indeed, Sageman argues that the socialization process of recruitment occurs through “friendship, kinship, and discipline”.<sup>69</sup> The absence of a formal overall recruitment process for the global jihad<sup>70</sup> makes it hard to identify the sources of recruits, target populations it seeks, and methods of enrolment which all go towards locating, identifying, and tracking the flow of recruits into the system. As well, the lack of a formal enrolment process also makes it challenging for military forces to infiltrate these groups. By establishing a low profile, insurgent groups do not raise alarms with governments or populations.<sup>71</sup>

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<sup>66</sup> Sageman, *Understanding Terror Networks*, 128.

<sup>67</sup> *Ibid.*, 99.

<sup>68</sup> *Ibid.*, 101.

<sup>69</sup> *Ibid.*, 135

<sup>70</sup> *Ibid.*, 142

<sup>71</sup> *Ibid.*, 145

Today's insurgent groups structure themselves differently from groups of the 1970's. Groups today tend not to utilize a hierarchical structure with clearly delineated lines of communication and chains of command.<sup>72</sup> Hierarchical structures expose leaders and, once identified, can be eliminated leading to malfunctioning frameworks. Today's structures are flattened, nodal, with clusters of insurgents utilizing diverse links between each group. Indeed, the *Salafi mujahed* was adept at this as "each cluster was completely independent of the others and penetration of one would not have revealed operations by another".<sup>73</sup> These cells have remained compartmentalized and as such have become self sufficient in terms of command, control, and operational support. Operating autonomously, these cells, as an example, "raise funds through local businesses, charities and petty crime. This has involved such activities as extortion, drug and cigarette smuggling, credit card fraud, coupon fraud and other petty crimes."<sup>74</sup>

These flattened structures are aided by the forces of globalization, specifically the transient nature of the world's population. As long as the migration of ethnic populations continues from their traditional cultural centres to more modern, urban or western centres, there will be a constant flow of willing recruits to extremism. For writers such as Bard O'Neill,<sup>75</sup> the dynamics of change imposed upon these people create clusters of malleable supporters willing to take risks and make sacrifices for the cause. Indeed, "humiliated, alienated, and hopeless, they become vulnerable to insurgent recruiters."<sup>76</sup>

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<sup>72</sup> Hashemi, An Introduction to Terrorist Organizational Structures. TheRiskyShift.com. 6 June 2012. <http://theriskyshift.com/2012/06/an-introduction-to-terrorist-organizational-structures/> (accessed 2 March 2013)

<sup>73</sup> Sageman, *Understanding Terror Networks*, 50.

<sup>74</sup> Victor Comras, "Al Qaeda Finances and Funding to Affiliated Groups." *Strategic Insights*, IV. Iss 1. (January 2005), 28.

<sup>75</sup> O'Neill, *Insurgency & Terrorism...*, 96.

<sup>76</sup> *Ibid.*, 96

A decentralized approach to structure combined with a growing ethnic migrant population base, enables groups such as the *Salafi mujahed* to spread quickly and blur traditional boundaries by tapping into ethnic clusters globally. The concept of state sovereignty becomes redundant. The blurring of these boundaries and increasing operations across geographical boundaries provides for greater flexibility in executing attacks. Essentially, this becomes a dynamic social movement that can break and form bonds as needed<sup>77</sup> in the pursuit of objectives. Given the links that bind these ethnic clusters, movement becomes an issue of individuals and not groups. And, of course, individuals are harder to track. It is “the robustness of the network and the fuzziness of the boundary condition of what is a node that make it difficult to completely eradicate the jihad once it has set root in a place.”<sup>78</sup> Ultimately, for analysts, it becomes extremely difficult to generate a common profile.<sup>79</sup> In the final analysis, mobility of small groups or personnel, and the loose, decentralized associations without hierarchical structures, makes them hard to be detected, located, defined, and attacked, enabling these non-state actors to endure.

In terms of command and control, insurgent groups require a complex political and military structure to successfully fulfill their objectives. Bard E. O’Neill cites China, Vietnam and Algeria<sup>80</sup> as examples where insurgencies with complex political and military structures were highly successful in achieving their aims. Through the establishment of a strong and complex structure, militant groups are most able to combat governments, undermining their legitimacy, hollowing out the state, and offering another

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<sup>77</sup> Sageman, *Understanding Terror Networks*, 151.

<sup>78</sup> *Ibid.*, 143.

<sup>79</sup> *Ibid.*, 153.

<sup>80</sup> O’Neill, *Insurgency & Terrorism...*, 122.



option to the population. In essence, it is a levelling of the playing field as insurgents become competitive with states. Those insurgencies without complex structures fail in the face of governments determined and resolute in their opposition.<sup>81</sup>

In today's security paradigm, command and control does not necessarily imply a rigid, hierarchical structure. Much like Obi Wan Kenobi in Star Wars<sup>82</sup>, AQ has managed to evolve to the next level in a revolutionary manner. AQ has become, in a sense, a "virtual" command and control element in a trans-national war. After being ousted from Afghanistan, AQ has been dispersed and forced to operate out of the technologically challenged and isolated Federally Administered Tribal Areas (FATA) of Pakistan. Operations are decentralized and planned with local autonomy.<sup>83</sup> Indeed, AQ provides an overarching command structure that interacts from a distance with local groups, yet these groups plan and execute the operations. There is no requirement for AQ to issue specific directions for attacks as goals between the local groups and their societal bases are broadly shared with AQ.<sup>84</sup> These local groups are able to finance and support operations without direct AQ interference and are effective, small, self-sustaining entities.<sup>85</sup> Indeed, Osama bin Ladens' death has had almost no measurable impact on global AQ operations.

## Support Systems

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<sup>81</sup> Hashemi, An Introduction to Terrorist Organizational Structures. TheRiskyShift.com. 6 June 2012. <http://theriskyshift.com/2012/06/an-introduction-to-terrorist-organizational-structures/> (accessed 2 March 2013)

<sup>82</sup> Star Wars: The New Hope: In the battle between Darth Vader and Obi Wan Kenobi, the old Jedi says, "You can't win Vader. If you strike me down, I shall become more powerful than you can possibly imagine." Kenobi is referring to the fact that he will transcend life to another level where he can still guide and influence the development of future Jedi Knights. Which is what happens.

<sup>83</sup> Sageman, *Understanding Terror Networks*, 48.

<sup>84</sup> Whiteneck, "Deterring Terrorists: Thoughts on a Framework", 194.

<sup>85</sup> Comras, "Al Qaeda Finances and Funding to Affiliated Groups", 24.

Insurgents require a robust support system to sustain their operations. Unlike traditional organizations, militant groups such as AQ and the *Salafi mujahed*, have had to developed unique systems to support their operations. A groups' support system must be robust, flexible, and able to adapt in order for them to survive.<sup>86</sup> Some aspects of the system appear legal and legitimate such as charities and cultural groups while other aspects are criminal in nature. Support systems must ensure that operations remain cost effective, exploit social mobilization, and constantly utilize unique funding solutions in order to endure. AQ is an example of a successful group that has utilized some of these characteristics. It is within the support system that one sees the marriage between trans-national actors such as insurgents, terrorists, and criminal organizations, adding a complexity that military forces are unaccustomed to addressing.<sup>87</sup>

The very nature of insurgent operations lends itself as an organization to resiliency. Generally speaking, militant operations are inexpensive<sup>88</sup> and typically cost effective when compared to military operations carried out by the state. Insurgents tend to get more “bang for their buck” than many businesses as operations do not require a large outlay of capital yet the results can result in money well spent. Attacks can be carried out from anywhere between \$10,000 (Madrid bombings of 2004) to upwards of \$75,000.<sup>89</sup> This low cost of doing business puts less strain on the group to acquire sufficient funds to carry out operations.

Another critical aspect of a support system is the ability to draw support from local populations. Globalization and rapid technological developments have enhanced

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<sup>86</sup> O'Neill, *Insurgency & Terrorism...*, 84.

<sup>87</sup> Scheuer, *Through Our Enemies' Eyes*, 43-44.

<sup>88</sup> Williams, “Warning Indicators, Terrorist Finances...”, 2.

<sup>89</sup> *Ibid.*, 3.

insurgents' abilities to engage supporting ethnic populations around the world. This form of social mobilization allows for a shared collective identity between the group providing the safe haven (supporting population) and the group it is harbouring.<sup>90</sup> This enables the protecting group to be more resilient and less likely to crumble in the face of adversity from military forces. This is a common aspect in Iraq and Afghanistan, as the militant groups become embedded within the supporting social group.<sup>91</sup> This was particularly true among the *Salafi mujahed*, "This "natural" growth of the jihad took place within particular social niches that were susceptible to its message."<sup>92</sup> With an ability to draw support through a social mobilization process, insurgents find themselves with an enhanced freedom of manoeuvre, that is difficult for military forces to counter.

### **Operational Activities**

Insurgent operational activities tend to be many and varied depending on the nature of the organization. Among insurgent groups, through careful study, one is able to parse a series of operational activities that share similarities. By no means definitive, these activities include such topics as targeting, information operations, sustainment, personnel, and the establishment of governance.

#### Targeting

Targeting is the area where one sees the most common operational patterns among insurgents groups. Attacks against government institutions and civilian targets are perpetrated to undermine confidence and support for the government and draw media attention.<sup>93</sup> Typically these targets impact the way of life of the population thus

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<sup>90</sup> Sageman, *Understanding Terror Networks*, 146.

<sup>91</sup> *Ibid.*, 146.

<sup>92</sup> *Ibid.*, 142.

<sup>93</sup> O'Neill, *Insurgency & Terrorism...*, 101.

undermining the credibility of the government through the demonstration of ineptness, or an inability to provide security. The Madrid train bombings of 2004 and the London bus and subway bombings of 2005 are examples of this type of targeting, where systems disruption is far more important than causing casualties.<sup>94</sup>

Most governmental targets are harder to attack therefore militant groups tend to also target civilian objectives in an effort to create fear and widespread panic. Civilian targets are soft targets that result in casualties and demonstrate that these groups have the capability to attack anywhere.<sup>95</sup> These types of attacks erode public confidence in law enforcement and security organizations, spreading fear.<sup>96</sup> Operation MEDUSA was conducted by coalition forces in 2006 in Afghanistan as a reaction to the potential encirclement and isolation of Kandahar City (KC) by Taliban forces.<sup>97</sup> KC was part of the heartland of the Taliban and specifically targeted in order to send a message to the Afghan population demonstrating that NATO forces were unable to provide protection and security.<sup>98</sup> These types of attacks may also cause security forces to over-react in a heavy handed manner taking retributive action against the population such as in Mai Lai, Haditha, and Maywand.<sup>99</sup>

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<sup>94</sup> Robb, *Brave New War*, 95.

<sup>95</sup> The Boston Marathon Bombings of April 2013 demonstrate this aspect given the levels of security implemented to protect the event.

<sup>96</sup> O'Neill, *Insurgency & Terrorism...*, 34.

<sup>97</sup> Adam Day, "Operation Medusa: The Battle for Panjwai." *The Legion Magazine* September, 2007. <http://legionmagazine.com/en/index.php/2007/09/operation-medusa-the-battle-for-panjwai/> (accessed 26 March 2013).

<sup>98</sup> Day, "Operation Medusa: The Battle for Panjwai" *The Legion Magazine* September, 2007. <http://legionmagazine.com/en/index.php/2007/09/operation-medusa-the-battle-for-panjwai/> (accessed 26 March 2013).

<sup>99</sup> Mai Lai, Haditha, and Maywand were all examples of massacres by Western forces.

Generally speaking, trans-national Islamic insurgents, fighting for a pan-Islamic ideal, see the West and Israel as the enemy.<sup>100</sup> They will target Western or Israeli interests locally or globally, be it governmental institutions or civilian objectives, in the hopes that these nations will retaliate with overwhelming force thereby creating more followers to their cause. The AQ elements in East Africa targeted the US embassies in Tanzania, Nairobi, and Kenya.<sup>101</sup> As well, AQ engaged softer targets such as an Israeli owned hotel in Mombasa and even went so far as to launch missiles at Israeli passenger jets taking off from African destinations.<sup>102</sup> Not to be outdone, *Hezbollah* has conducted bombing missions abroad in South America against Israeli targets in an effort to project force.<sup>103</sup> Interestingly enough, *Hezbollah* is not necessarily a trans-national group, given that its goals are limited to the Palestinian conflict.

*Jemaah Islamiya* (JI), another trans-national insurgent group, started the 1990s with bombings, hijackings, and bank robberies, but escalated in 2000 to planned suicide truck bombs against US embassies, and the targeting of airports, water pipelines, and military offices.<sup>104</sup> JI's 2002 and 2005 Bali Bombings were aimed at the soft targets of westerners on vacation. JI uses these attacks to undermine the governments of various Southeast Asian nations, incite ethnic tensions in the region, and generate support among the Muslim populations,<sup>105</sup> all with a view to creating an Islamic state in the region. For

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<sup>100</sup> Scheuer, *Through Our Enemies' Eyes...*, 292.

<sup>101</sup> Stephen J. Morrison, "Somalia's and Sudan's Rush to the Fore in Africa," *The Washington Quarterly* 5, no. 2, (Spring 2002), 193.

<sup>102</sup> Princeton N Lyman, and J. Stephen Morrison. "The Terrorist Threat in Africa," *Foreign Affairs* 83, no. 1, (January/February 2005).

<sup>103</sup> Mark P. Sullivan, "Latin America: Terrorism Issues" Congressional Research Service Report to Congress (RS21049), (March 29, 2005): 1-6. <http://www.usembassy.it/pdf/other/RS21049.pdf> (accessed 1 March 2013).

<sup>104</sup> Scott B. MacDonald and Jonathan Lemco, "Political Islam in Southeast Asia" *Current History* 101, Iss 658, (November 2002), 391.

<sup>105</sup> Zachary Abuza, "Funding Terrorism in Southeast Asia: The Financial Network of Al

all trans-national groups, by targeting US or Israeli interests abroad in such locations as Africa, Southeast Asia, and Latin America, these operations are indicative of an asymmetric strategy of attacking where the enemy is weakest and seeking the disruption of state sponsored systems.<sup>106</sup>

Regional or state focused groups such as the Revolutionary Armed Forces of Columbia (FARC) conduct missions such as kidnapping for profit, drug trafficking, executing elected officials and government members, attacking military and civilian targets both in urban and rural areas.<sup>107</sup> Whereas kidnapping and drug trafficking are conducted in order to raise funds for the group, attacks on military and civilian targets are designed to undermine the government's ability to provide security. As well these types of attacks are designed to draw media attention and spread fear. In the same region, the Shining Path (*Sendero Luminoso* (SL)) has also conducted operations that have targeted security forces and civilians<sup>108</sup> in an effort to erode support for the government.

Similarities in targeting can be seen across the globe in Southeast Asia. Much like FARC and SL, the Liberation Tigers of *Tamil Eelam* (LTTE or Tamil Tigers), operations included drug trafficking, assassinations, robberies, bombings, and campaigns to eliminate rival groups.<sup>109</sup> Again, some of these operations were conducted for simple fund raising, however when combined, became a deadly repertoire of asymmetry, eroding public confidence in security forces and de-stabilizing governments. The Tamil Tigers also took on hardened targets by conducting combined sea and land raids on military

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Qaeda and the Jemaah Islamiya." *Contemporary Southeast Asia* 25, no. 2 (August 2003),171

<sup>106</sup> Scheuer, *Through Our Enemies' Eyes ...*, 294-295.

<sup>107</sup> Sullivan, "Latin America: Terrorism Issues", 1-6.

<sup>108</sup> *Ibid.*, 1-6.

<sup>109</sup> Bryan Pfaffenberger, "Sri Lanka in 1987: Indian Intervention and the Resurgence of the JVP," *Asian Survey* 28, no. 2, (February 1988), 138.

facilities, complex seaborne and air attacks, infiltrating governmental institutions, and assassinating political moderates.<sup>110</sup> By directly challenging military and security forces, insurgent groups demonstrate the weaknesses of the government, and by extension military and security forces. These are steps towards hollowing out the state structure.

In order to demonstrate the Sinhalese governments' weakness, spread fear, and exploit ethnic tensions, the Tigers executed attacks on civilian settlers in the Eastern Province, emphasizing the impotence of government forces.<sup>111</sup> Tamil militants have also attacked foreign owned or joint foreign-state owned companies in order to demonstrate the governments' inability to provide security and to chase away foreign investment.<sup>112</sup> Tiger strategy throughout the campaign was designed to provoke the Sinhalese population into a reaction against the Tamils<sup>113</sup> thus drawing in further support from Tamils worldwide and to focus international attention on the conflict. In doing so, the Tigers conducted operations across a wide spectrum, having been accused of committing human rights violations against civilians, attacks against the media, forced recruitment, child recruitment, abductions, assassinations, and suicide bombings.<sup>114</sup>

The Tigers also conducted assassinations and suicide bombings against rival groups in order to eliminate competition.<sup>115</sup> Similar patterns are visible in operations conducted by radical Muslim groups such as *Abu Sayyaf* in the Philippines.<sup>116</sup>

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<sup>110</sup> Pfaffenberger, "Sri Lanka in 1987...", 139

<sup>111</sup> *Ibid.*, 144.

<sup>112</sup> *Ibid.*, 146

<sup>113</sup> International Crisis Group (ICG), "Sri Lanka's Return to War: Limiting the Damage," *International Crisis Group*, February 2008. <http://www.crisisgroup.org/en/regions/asia/south-asia/sri-lanka/146-sri-lankas-return-to-war-limiting-the-damage.aspx> (accessed 22 March 2013), i.

<sup>114</sup> *Ibid.*, 1.

<sup>115</sup> *Ibid.*, 3.

<sup>116</sup> Joshua Kurlantzick, "Fear Moves East: Terror Targets the Pacific Rim" *The Washington Quarterly* 24, no 1, (Winter 2001), 21.

In Kashmir, the Jammu and Kashmir Liberation Front (JKLF) targets government institutions, military/security forces, and civilians. With the influx of foreign fighters many of the attacks began to occur outside the Kashmir theatre of operations in 2001 with the attack on the New Dehli government and on Mumbai in 2008. As well, with foreign fighters came increased support from Pakistan,<sup>117</sup> primarily the Pakistani ISI. Further, groups such as LeT have changed their strategic goal from independence of Kashmir, to an Islamic state, to an Islamic region. Within the Kashmir region, rebels target the indigenous Hindus in order to fuel ethnic hatred, however, the rebels will also target indigenous Muslims who do not appear to be cooperative with their efforts.<sup>118</sup> Rebel attacks often affect the tourism industry which provides jobs for men, ensuring a steady flow of disgruntled recruits<sup>119</sup> into the arms of the militants. These attacks are also the primary means for insurgent group messaging.

#### Information Operations

Much like modern military forces, sophisticated insurgent groups use and manage information to their advantage. Globalization and advanced technology has brought the world closer together.<sup>120</sup> People in some of the remotest parts of the world can now access information almost immediately. As an example, in order to spread the ideology of radical Islam, militant groups exploit new technologies and social media to manage information. As well, many groups set up front companies or charities to spread ideology and assist in the propagation of Islamic messaging.<sup>121</sup>

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<sup>117</sup> Jonah Blank, “Kashmir: Fundamentalism Takes Root,” *Foreign Affairs*, (November/December 1999), 42.

<sup>118</sup> *Ibid.*, 46–47.

<sup>119</sup> *Ibid.*, 49.

<sup>120</sup> Kurlantzick, “Fear Moves East...”, 23.

<sup>121</sup> *Ibid.*, 26.



Information operations successes include exploiting residual sympathies for radical Islam in countries such as Sudan<sup>122</sup> thereby ensuring a support base among the population. After the US invasion of Afghanistan in 2001, radical Islamic information operations were successful in stirring up anti-western sentiment in Africa emanating from “Muslim cleric leaders in coastal Kenya, religious leaders and official media in Khartoum, and rioters in Kano in northern Nigeria” by “playing on acute, preexisting sectarian tension.”<sup>123</sup> Information operations campaigns have had relative success in Africa. By 2002 leaders in some African countries began to demonstrate lukewarm or watered down support for the US. Leaders in Senegal and Mali, and notable Nelson Mandela, all reduced support or criticized the US. These leaders found themselves “under heavy criticism” from the Muslim communities<sup>124</sup> stirred up by the Islamic messaging.

Information operations are conducted by just about every insurgent group to some degree of success. Some operations are events designed to provoke a reaction. Some cases of successful information operations include an event where a Tamil militant conducted a fast or hunger strike that resulted in his death but inspired the local population to support LTTE.<sup>125</sup> Arab internationalists are very good at using information operations globally to generate support for their cause, target their enemies, and to assist in the Islamification process of potential support populations.

## Sustainment

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<sup>122</sup> Morrison, “Somalia’s and Sudan’s Rush...,” 192.

<sup>123</sup> *Ibid.*, 210.

<sup>124</sup> *Ibid.*, 203.

<sup>125</sup> Pfaffenberger, “Sri Lanka in 1987...,” 143.

Another common, but extremely important, line of operation for guerilla groups is sustainment. Sustainment includes such things as establishing support, creating a safe base of operations, and maintaining operations. Typically sustainment is the insurgents Achilles heel. Military forces are able to attack insurgent groups through their sustainment systems, such as tracking and interdicting the flow of weapons, money, and personnel.<sup>126</sup> These sustainment systems must be robust and varied enough to withstand interdiction by military forces. Without a proper sustainment campaign militant groups do not last long and, like weeds without roots, wither and die.

In terms of sustainment, Palestinian groups such as *Hezbollah* and *Hamas* have demonstrated a global reach as far as the Caribbean and South America. They have managed to exploit small groups of supporters who share the same ideology in order to provide financial, logistical, and moral support to groups based in the Middle East.<sup>127</sup> *Hezbollah* and *Hamas* have both conducted funding operations along the Tri-Border Area (TBA) (Safe Haven) of Argentina, Brazil, and Paraguay exploiting the local TBA Muslim populations.<sup>128</sup>

In Africa, AQ has used the lawless bazaars and well established criminal networks of West and Central Africa to sustain its operations, protect its assets, and expand its finances.<sup>129</sup> AQ also favours weakened states such as Somalia to great advantage by exploiting the lack of governmental structures and porous borders. Somalia has been used by AQ to transit to and from its infrastructure in Kenya and Nairobi.<sup>130</sup>

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<sup>126</sup> Sullivan, "Latin America...", 1-6.

<sup>127</sup> *Ibid.*, 1-6.

<sup>128</sup> *Ibid.*, 1-6.

<sup>129</sup> Lyman and Morrison, "The Terrorist Threat in Africa," 38.

<sup>130</sup> *Ibid.*, 38.

As a transit route, weakened and failed states such as Somalia, become links in the support network by connecting to sustainment nodes such as Kenya.<sup>131</sup> It is through these sustainment links that insurgent groups are able to move weapons, funds, people, and ideas onwards. An example of this is the *Al Barakaat* telecommunications and financial network in Somalia. The network provided a constant flow of funds through *hawala* operations to AQ and included access to telecommunications technologies such as internet and cell phones.<sup>132</sup>

Safe havens are critical to the sustainment of militant groups and allow them to create a base of operations. Safe havens such as the TBA, the Federal Administrative Tribal Areas (FATA) of Pakistan, Somalia, Northern Mali, Northern Nigeria, and Sudan provide guerrilla groups with a location away from governmental or military interference.<sup>133</sup> These ungoverned areas have typically been utilized by criminal actors and more recently insurgent groups have come to see the utility in them. Safe havens such as the TBA, provide:

...an environment in which decentralized non-state actors can thrive. They provide sources of potential financing, access to illegal weapons and advanced technologies, and offer freedom of movement in a geographic area ideal for camouflage and concealment.<sup>134</sup>

In Southeast Asia, LTTE maintained a sanctuary in the Indian state of Tamil Nadu, attempting to blend into a Tamil community of millions<sup>135</sup> and exploit this base of ethnicity. Tamil Nadu provided political and economic support to the Tamil rebels and

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<sup>131</sup> Lyman and Morrison, "The Terrorist Threat in Africa," 38.

<sup>132</sup> Morrison, "Somalia's and Sudan's Rush...", 197.

<sup>133</sup> Randall Wood, "South America's Tri-borders Region," *SAIS Review* XXV, no 1, (Winter-Spring 2005), 106.

<sup>134</sup> *Ibid.*, 106

<sup>135</sup> Pfaffenberger, "Sri Lanka in 1987...", 138.

the community used its influence and pressure to force the Indian government to exert pressure on the Sri Lankan government.<sup>136</sup>

Safe havens are used for rest, reconstitution and training. Both FARC and ELN have utilized Venezuelan territory and Ecuador as well to regroup.<sup>137</sup> SL has also conducted reconstitution operations along the border regions between Columbia and Peru.<sup>138</sup> Like the FATA of Pakistan, the tri-border area of South America is considered an ungoverned area that lacks governmental presence and as such has become a safe haven for insurgent sustainment operations.<sup>139</sup>

Safe havens can also be provided directly to insurgent groups by states. Cuba is an example of a state that has provided a safe haven through hosting FARC, ELN and Basque Separatists, creating a place for reconstitution operations outside the reach and influence of military forces.<sup>140</sup> Pakistan provides state sponsorship and active support to Kashmiri militant groups enabling them through the provision of training bases.<sup>141</sup> JI uses Singapore as a base of operations given its location as a major “transportation and offshore-finance hub for Southeast Asia”,<sup>142</sup> its diverse ethnicity, and the fact that it is surrounded by predominantly Muslim countries.

A critical element of sustainment operations is financing. Just about every insurgent group has established financial support through money laundering, drug trafficking, kidnapping for profit, and other criminal activities. As an example, Colombian groups such as United Self-Defense Forces of Columbia (AUC) participate in

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<sup>136</sup> ICG, “Sri Lanka's Return to War...”, 5.

<sup>137</sup> Sullivan, “Latin America...”, 1-6.

<sup>138</sup> *Ibid.*, 1-6.

<sup>139</sup> *Ibid.*, 1-6.

<sup>140</sup> *Ibid.*, 1-6.

<sup>141</sup> V.R. Raghaven, “The Double-Edged Effect in South Asia,” *The Washington Quarterly* 27, no 4. (Autumn 2004), 149.

<sup>142</sup> MacDonald and Jonathan Lemco, “Political Islam in Southeast Asia”, 391.

criminal activity, to include trafficking in drugs and in Peru,<sup>143</sup> SL has also participated in drug trafficking.<sup>144</sup> Funding can also come from international sources such as immigrant communities. The Tigers received support from the Tamil diaspora around the world such as the US, Canada, UK, and India.<sup>145</sup> These immigrant communities tend to provide support through various means such as smuggling, intimidation, and fundraising. In the Philippines, *Abu Sayyaf* is believed to have been funded by the International Islamic Relief Organization.<sup>146</sup>

### Personnel Operations

Insurgent groups need a constant flow of recruits and supporters to sustain the organization. They do this through many methods such as proselytizing, active and passive recruitment, forced recruitment, and intimidation. In African countries, for example, Egyptian clerics and scholars have been seen proselytizing with a view to creating and sustaining an Islamification process.<sup>147</sup> Groups such as JI and the Tamil Tigers conducted recruitment at educational facilities such as universities in an effort to have their brand of extremism take root.<sup>148</sup> As well, the Tigers were accused of enforced recruitment of adults and children.

In Africa there has been a dedicated effort by the Islamic Brotherhood to generate support. Islamic religious scholars from Saudi Arabia and members of various Muslim brotherhoods have provided funding, support, and encouraged internal debate over the dedication of Islamic followers. These efforts are all conducted with a view to

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<sup>143</sup> Sullivan, "Latin America...", 1-6.

<sup>144</sup> *Ibid.*, 1-6.

<sup>145</sup> ICG, "Sri Lanka's Return to War...", 25.

<sup>146</sup> Kurlantzick, "Fear Moves East...", 24.

<sup>147</sup> Lyman and Morrison, "The Terrorist Threat in Africa", 37-38.

<sup>148</sup> Pfaffenberger, "Sri Lanka in 1987...", 139.

establishing a resurgence in dedicated supporters in African-Muslim communities.<sup>149</sup> An example of this effort can be seen in Northern Nigeria among the *Hausa-Fulani* tribe which is predominantly Muslim. This is all part and parcel of the Islamification process in order to create a resurgence in fundamentalism and provide diverse bases of supporters and pool of recruits.<sup>150</sup> The same methods can be seen in South Africa whereby alleged Saudi religious leaders and scholars influenced radical Islamic groups, shaping their ideas and influencing their operations.<sup>151</sup>

Whereas some groups can reach globally and generate support from ethnically diverse people, other militant groups are limited to local efforts. In Kashmir the JKLF movement took on greater grass roots support in the early 1990s and its base of support increased from the urban areas out into the rural community.<sup>152</sup> The JKLF began as a non-fundamentalist, home grown insurgency seeking independence however with the influx of foreign fighters it became Islamicized with links to pan-Islamic groups.<sup>153</sup> In the Philippines, *Abu Sayyaf* used its funds to build mosques and health service facilities in poorer areas which resulted in an increase in supporters and recruits.<sup>154</sup> JI also built a string of religious schools (*madrasas*) to recruit and indoctrinate new members and spread JI messaging.<sup>155</sup> Insurgent groups, like any organization, require a dedicated campaign plan to identify, attract, and develop new members and supporters.

### Establish Governance

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<sup>149</sup> Lyman and Morrison, "The Terrorist Threat in Africa", 39.

<sup>150</sup> *Ibid.*

<sup>151</sup> *Ibid.*, 40

<sup>152</sup> Surinder Oberoi, "Fear and Loathing in Kashmir," *The Washington Quarterly* 24, no 2, (Spring 2001), 197.

<sup>153</sup> *Ibid.*, 197-198.

<sup>154</sup> Kurlantzick, "Fear Moves East...", 23.

<sup>155</sup> Zachary Abuza, "Funding Terrorism in Southeast Asia...", 172.

Another important line of operation is the idea that while undermining governmental institutions, insurgent groups will provide that which the state cannot: governance. These groups will often establish a shadow government or provide services that legitimate governments are expected to provide with a view to swaying the population over the insurgents' side.<sup>156</sup> During the Sri Lankan conflict in 1987, the Tamil Tigers controlled the Jaffna Peninsula and set up a civilian administration of the area thereby demonstrating to the populace that they were in control, and were there to govern.<sup>157</sup> Through their efforts the Tigers completely militarized the society within the territories that they controlled and supplanted the legitimate government.<sup>158</sup>

The recent conflict in Mali emphasizes this fact. The *Tuareg* people formed the National Movement for the Liberation of *Azawad*. Their objective was to establish an independent and secular state in Northern Mali controlled and administered by the *Tuareg* leadership.<sup>159</sup> The *Tuareg* joined in a loose collaboration with *Ansar Dine*, an Islamist organization with links to Al Qaeda in the Islamic *Mahgreb* (AQIM). *Ansar Dine* maintained the objectives of establishing strict *Sharia* law across Northern Mali and attempted to do so until routed by French forces.<sup>160</sup>

In Muslim-based conflicts, the introduction of Islamic *Sharia* law and courts provides a level of security for the population. *Sharia* offers hope to those in the ungoverned and lawless regions. The *Sharia* movement is an extension of the political and governmental arm of insurgent organizations.<sup>161</sup> In ungoverned areas, insurgent

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<sup>156</sup> Pfaffenberger, "Sri Lanka in 1987...", 137-138.

<sup>157</sup> *Ibid.*, 137-138.

<sup>158</sup> ICG, "Sri Lanka's Return to War...", ii.

<sup>159</sup> "Mali crisis: French troops begin withdrawal." BBC. April 2013.  
<http://www.bbc.co.uk/news/world-africa-22079290> (accessed 19 April 2013).

<sup>160</sup> *Ibid.*

<sup>161</sup> Lyman and Morrison, "The Terrorist Threat in Africa", 40.

groups will create the mechanisms of governance that people come to expect. In Waziristan today, the Taliban have taken over from the Pakistan government and offered the people an alternative.<sup>162</sup>

### Tactics

Insurgent groups today share similarities in the choice of tactics to achieve their ends. These tactics vary from criminal and human rights abuses to more conventional military attacks. In Africa, the Revolutionary United Front (RUF) uses rape, looting, and enforced recruitment to systematically terrorize the population as a part of their strategy at violent social destabilization.<sup>163</sup> In Sri Lanka, there was a conventional aspect to the Tamil campaign. The Tigers had established well defended positions and had a capability to conduct a complete range of conventional military combat operations including indirect fire, ground and seaborne assaults, naval raiding, air – ground attack, and aerial bombardment.<sup>164</sup> As an example, on 22 October 2007 the Tigers conducted a combined land and sea assault against a Sinhalese airbase.<sup>165</sup> By creating a conventional component with a terrorist element, the Tigers were able to provide many challenges to the Sri Lankan government, conducting truly asymmetric warfare.

In Kashmir, militant groups that are supported by Pakistan operate under an umbrella of nuclear deterrence. They continue to strike at Indian targets forcing India to remain reactive and defensive.<sup>166</sup> However, these strikes need to be carefully calculated and have limits. If pushed too far, should India go on the offensive, the conflict could

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<sup>162</sup> Lyman and Morrison, “The Terrorist Threat in Africa”, 38.

<sup>163</sup> Morten Boas, “Africa’s Young Guerrillas: Rebels with a Cause?” *Current History* 103, Iss 673, (May 2004), 211.

<sup>164</sup> ICG, “Sri Lanka's Return to War...”, i.

<sup>165</sup> *Ibid.*, 2

<sup>166</sup> Raghaven, “The Double-Edged Effect in South Asia,” 150.



escalate to all out war between India and Pakistan. Given the volatile situation in the region, there is the chance that both nations may resort to an exchange of nuclear weapons which would cause widespread destruction and render the region useless to either side.<sup>167</sup>

Conflict today is constantly transitioning as insurgent forces continue to adapt, overcoming military forces and their efforts in meeting the threats. However, globalization and the internet support a proliferation of small scale, DIY guerrilla groups. In today's world, the proliferation of technology and rapid globalization has flattened the globe, bringing people and ideas closer together. These groups, vice states, leveraging modern technology and rapid globalization will remain, for the foreseeable future, the main threat to accepted ways of life on the planet.<sup>168</sup> The ability to harness technology has become so decentralized that just about anyone with access to modern technology such as the internet can tap in.<sup>169</sup> This is where the non-state actor fits in.

As state sponsorship deteriorates, as is the case with Syria and *Hezbollah* currently, these insurgent groups become smaller and more dispersed in order to survive. State sponsors such as Syria and Iran enabled insurgent groups to grow in size. When AQ Central resided within Taliban controlled Afghanistan, the organization reached its peak in terms of membership. Conversely, a lack of a supporting state or base to provide sponsorship limits the size of groups. With the loss of its base and degradation through the war, AQ Central's numbers have been eroded significantly.<sup>170</sup>

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<sup>167</sup> Raghaven, "The Double-Edged Effect in South Asia", 150.

<sup>168</sup> Robb, *Brave New War*, 7.

<sup>169</sup> *Ibid.*, 9

<sup>170</sup> Scheuer, *Through Our Enemies' Eyes...*, 276-277.

Small wars are evolving beyond the original construct of non-state actors such as AQ, *Jemaah Islamiyah* (JI), and others employing violence to achieve political ends. Technology and globalization have driven a change that sees new groups appearing.<sup>171</sup> These new actors appear to have adopted a strategy of leaderless networks in order to avoid security and intelligence agencies arrayed against them.<sup>172</sup> An example would be the Earth Liberation Front (ELF). Through the use of the internet and globalization, ELF espouses a strategy of encouraging individuals to form close-knit, autonomous cells of trustworthy and sincere people. These small cells span the globe, but have no structure or chain of command. In fact they are independent cells that are only linked by a shared philosophy.<sup>173</sup> ELF cells are anonymous to each other and their actions are in no way synchronized or coordinated. ELF is a non-state micro actor that would be considered as a single issue group.

This new breed of actor defies traditional constructs and definitions. These new actors are:

...populated by individuals who are ideologically motivated, inspired, and animated by a movement or a leader, but who neither formally belong to a specific, identifiable group nor directly follow orders issued by its leadership and are therefore outside any established chain of command.<sup>174</sup>

### **DISCUSSION: CATHEDRALS AND BAZAARS**

Arguably, warfare is being transformed from a closed, state sponsored event to a globally accessible activity, expedited at the lowest level through the cheapest and most readily available means.<sup>175</sup> Today, individuals or small autonomous groups working in

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<sup>171</sup> Arquilla and Ronfeldt, *Networks and Netwars...*, 314.

<sup>172</sup> Hoffman, Bruce. *Inside Terrorism*. (New York: Columbia University Press, 2006), 38.

<sup>173</sup> *Ibid.*, 38.

<sup>174</sup> *Ibid.*, 38.

<sup>175</sup> Arquilla and Ronfeldt, *Networks and Netwars...*, 314.

concert, without structured methods for coordination, can wage war against any state, anywhere, anytime. Open and global access for these micro-actors is facilitated through modern and rapid technological change, empowering them to wage war upon states or multi-national entities. As outlined so far in this discussion, their competitive advantage resides in their adaptability and robustness. These characteristics are facilitated by their non-hierarchical structures, interconnectedness, and their capacity to leverage new trends and information technologies.<sup>176</sup> They are motivated to work towards a common or shared interest. With these descriptors, it is easy to see how these non-state actors function much like a bazaar or marketplace.

Modern military forces of the nation-state remain at a competitive disadvantage to these bazaar-like entities by adhering to a rigid, hierarchical structure that does not allow for rapid adaptability, ingenuity, or innovation. These cathedral-like structures prevent organizations from reaping the benefits of new global trends and leading change. It seems that for modern military forces such as the CAF, the time has come for a paradigm shift in its concept of operations. This paradigm shift is really a revolution in the way of thinking and conducting business which, for the military, requires not only the adoption of new assumptions, but also a rehabilitation of previously held assumptions.<sup>177</sup>

Unfortunately, as creatures of habit, humans have a difficult time embracing change. As will be demonstrated, cathedral organizations are constrained by a number of factors.

However, in order to remain competitive, modern military forces may need to get with the times. For the CAF and others, the previous paradigm, the idea of state versus state,

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<sup>176</sup> Robb, *Brave New War*, 117-126.

<sup>177</sup> Smith, *The Utility of Force...*, 4.

or inter-state industrial war, is the concept that current and future armed forces are being structured for.<sup>178</sup>

### **The Problem with Modern Military Forces**

To begin with, the industrial state and the military professional tend to view the future security environment through old lenses resulting in inaccurate expectations.<sup>179</sup>

The paradigm of the Westphalian model of state warfare, or inter-state industrial war, is characterized by “conflict between states, the manoeuvre of forces en masse, and the total support of the state’s manpower and industrial base, at the expense of all other interests, for the purpose of an absolute victory.”<sup>180</sup> The past successes of this model, such as WW I and II, foster expectations that do not match today’s security paradigm.

Current expectations revolve around the premise of the sequence “peace-crisis-war-resolution.”<sup>181</sup> The end result in this sequence is an expectation in a return to peace and stability. Consequently these expectations lead to, “politicians and soldiers ... still thinking in terms of the old paradigm and trying to use their conventionally configured forces to that end – whilst the enemy and the battle have changed.”<sup>182</sup> Therefore, policy makers and military professionals need new lenses and new expectations.

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<sup>178</sup> Smith, *The Utility of Force...*, 5.

<sup>179</sup> Directorate of Land Concepts and Design. *Army 2040*, 105. The Canadian Army considers the attacks on September 11, 2001 as a shock; however, on page xi of the Executive Summary shocks are defined as “low probability events” and high impact...not just low probability, “Shocks or black swan events are low probability events that would have a high impact if they were to occur. Given that Bin Laden had been planning the attacks as early as 1996, it was not a matter of “if” but “when”. Therefore, 911 had a high probability of occurring. The 911 attacks were a part of OBL’s campaign against the West which began in 1990 and included the bombings on the USS Cole and the US Embassies and the World Trade Center.

<sup>180</sup> Smith, *The Utility of Force...*, 19.

<sup>181</sup> *Ibid.*, 19.

<sup>182</sup> *Ibid.*, 7.

The expectations on the use of force that were applicable to the pre-Cold War era have no place in the current paradigm.<sup>183</sup> There are those within the CAF who understand that a new security paradigm is apparent. Upon taking up the position of Chief of Defence Staff for the Canadian Forces in 2005, General Rick Hillier gave his “nest of snakes” speech.<sup>184</sup> In that speech he characterized the conflicts facing the CAF today and tomorrow as fighting a nest of “nest snakes”. Hillier acknowledged that the past conflicts of fighting “bears” (nation-states such as the former Soviet Union) was now over and that all future conflicts would take place in failed or failing states against non-state actors as described in this paper.

In the new security paradigm, decisive military victory is no longer achievable as evidenced in the conflicts of Kosovo, Chechnya, Iraq, and Afghanistan. All provide examples of military conflicts without decisive military and political solutions. Modern military forces today fight using industrial war tactics, weapons, and equipment that have been adapted for complex combat in nebulous conditions against hard to define enemies.<sup>185</sup> However, this new paradigm should be no surprise for the military professional.

As early as 1962, President Kennedy talked about a new paradigm, another type of war facing the modern world. He was speaking specifically about Vietnam. However, the prosecution of the war turned out to be nothing new. Sadly, the strategy for fighting the Vietnam War has provided military and political leaders with a model of warfare that is still employed. Vietnam is interesting in that it utilized modern technological

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<sup>183</sup> Friesen, “Slaying the Dragon...”, 32-33.

<sup>184</sup> Peter J. Williams, “Being Effectives in Snake Fighting – Lessons for the Canadian Forces in the Effects-Based Operations Era.” *The Canadian Army Journal* 10, no 4. (2005), 19.

<sup>185</sup> Dunnigan, *Digital Soldier...*, 290.

superiority, including air power, to neutralize the enemy, while attempting to reduce casualties. Collateral damage and force protection became predominant in the battlespace as leaders tried to reduce the friendly force body count. The mitigation of these effects became a driver for future force development, which continues today. Another aspect of the Vietnam War was the engagement of the media. The media, was utilized extensively, manipulated, and controlled by all active and passive participants during the war in the fight for public opinion and support. Indeed, with the proliferation of the media on the battlefield, the war was also fought in the living rooms of the nation-state. Support internationally and domestically was critical to the sustainment of the campaign from all sides. Despite the losses in the war, the military as a tool to engage in conflict resolution, including regime change, became an attractive option for politicians.

The lenses and subsequent expectations that colour and influence political and military leaders in the development and use of military force has been reinforced through an extensive body of classical scholarly work on the matter.<sup>186</sup> Notables such as Antoine-Henri Jomini and Carl von Clausewitz are still read today by members of the profession of arms, both of whom still have a significant influence on the way militaries operate. Indeed, Jomini believed that the commander of military forces needed to maintain absolute control over decision-making during the campaign.<sup>187</sup> Further, Jomini also advocated the annihilation of the adversary's force.<sup>188</sup> Therefore, military professionals, influenced by Jomini and others, believe that in order to achieve victory, one must bring the enemy army to battle and defeat it. This is the conventional way of thinking and

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<sup>186</sup> Van Riper, "Planning For and Applying Military Force", 1-2.

<sup>187</sup> John A. Nagel, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam*. (Chicago: The University of Chicago Press, 2005), 18.

<sup>188</sup> *Ibid.*, 18.

when applied to an insurgency, the conventional army attempts to bring the insurgents, the army of the people, to battle.<sup>189</sup> The trouble with this is that in today's battlespace that army of the people is the people. Therefore the same population that the conventional force is there to protect is in fact being targeted.<sup>190</sup> If decisive military victory is no longer an option, then the way politicians and military professionals view the use of force must change.

The model established during the Vietnam conflict has bore itself out during many operations since. During Operation ALLIED FORCE (AF) in Kosovo, air power and technological superiority was utilized to full advantage, while political goals were pursued. Force protection and casualty aversion played a predominant role in strategy development. Military objectives were designed to support the political goals of compelling behavioural change in the Serbian regime.<sup>191</sup> However, Operation AF did not result in a decisive military victory and a political solution to the problem still remains elusive today.<sup>192</sup>

A similar strategy was employed during Operation DESERT STORM where overwhelming technological superiority and air power was used to destroy the Iraqi military infrastructure prior to launching the ground assault. Again force protection and casualty aversion were critical planning factors for the military. Even though military

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<sup>189</sup> Nagel, *Learning to Eat Soup with a Knife...*, 28.

<sup>190</sup> Authors own experiences. In the reconstruction phase of Op MEDUSA in 2006, in the village of Bazaar-i-Panjway, the Canadian Task Force constructed a FOB. The Canadians decided to contract out the work to provide local employment. Nearby sat a refugee camp filled with adult male Pashtoons. Each day the Pashtoons would watch as contracted gravel trucks would travel back and forth delivering gravel to the construction site. At night the Pashtoons would take up arms and shoot at the coalition. The reason the Pashtoons took up arms was due to the fact that Canadian domestic contract regulations proscribed the untrained Pashtoons from working. The only people who applied and met the contract requirements were Pakistanis from across the border. Pashtoons and Pakistanis are mortal enemies. In an effort to sway the locals to the Coalition side, the Canadians produced further enemies.

<sup>191</sup> Benjamin Lambeth, *NATO's Air War for Kosovo*. (Santa Monica, CA: RAND Corporation, 2001), xiii.

<sup>192</sup> Serbia still refuses to recognize Pristina's sovereignty.

hostilities were concluded with a ceasefire and eventual withdrawal of coalition forces, the region remained unstable. In fact, in 2003, the US led a coalition of military force in a war against Iraq for a second time where again the same strategy was applied.<sup>193</sup>

Although the President of the US declared the mission complete in 2003, the conflict has dragged on, and continues, without an end in sight.

What is important about each of these examples is that in all cases the sequence of peace-crisis-war-resolution was applied. However, because this strategy is out of date with the current security paradigm, in each case, the final phase of resolution, and a return to normalcy, has never been reached. This strategy needs to change so that the modern military force will be able to re-organize, re-structure, re-orient training, and re-equip for the new paradigm in security.

The Cold War proved the futility of state versus state warfare through a mutual assurance of catastrophic destruction. As well, nations are now so interdependent and intertwined that any action taken by an individual state will have repercussions across the globe, cascading across borders without mitigation.<sup>194</sup> Despite these facts, modern military forces continue to organize, train, structure, and equip themselves to fight the wars of industrial states.<sup>195</sup> The simple fact is that modern militaries need an enemy or threat model to formulate strategy, drive military force development, structure forces, and

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<sup>193</sup> Kenneth J. Campbell, "Once Burned, Twice Cautious: Explaining the Weinberger- Powell Doctrine." *Armed Forces & Society* 24, iss. 3, (Spring 1998): 357-374, viewed on 18 April 2012 <http://web.ebscohost.com/ehost/detail?vid=5&hid=12&sid=d7674185-a46e-4a75-8052-589eeaff67d1%40sessionmgr12&bdata=JnNpdGU9ZWwhvc3QtbGl2ZQ%3d%3d#db=mth&AN=805139>

<sup>194</sup> Robb, *Brave New War*, 17.

<sup>195</sup> Bruce Floersheim, "Forging the Future of American Security with a Total Force Strategy." *Orbis* 53 iss. 3, (June 2009), 478-479.



budget for military expenditures, and procure for their governments all with accountability.<sup>196</sup>

A state-based adversary is useful in that it provides a template for planning with troop numbers, cogent doctrine, quantifiable equipment, structured orders of battle, and standard tactics, all providing utility in defence planning.<sup>197</sup> In fact, most professional militaries use capability based planning (CBP) as their method for future force development. CBP uses point-scenario planning which focuses on specific adversaries, specific conflicts, and utilizes very specific assumptions about these scenarios contrary to adopting a more fluid, flexible and adaptive method for planning.<sup>198</sup>

Modern military forces still view insurgencies as conflicts of the nature established by notable guerrillas such as George Washington, Mao Tse Tung, or Che Guevara. Current doctrine, training, and structures are designed to defeat these “classical” forms of insurgency.<sup>199</sup> Indeed, much effort is expended in identifying the structures and seeking out insurgent leadership for capture / kill missions. Modern forces share the expectation that these insurgencies of today are top-down driven organizations that have identifiable goals and objectives. However, despite the successes of Western military forces in capturing and killing key insurgent leaders, these same insurgencies continue to flourish, develop, adapt, and continue to create instability. Al Qaeda still flourishes even without Osama Bin Laden. Modern military forces tend to have a difficult time accepting the premise that the nature of the threat has changed and,

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<sup>196</sup> Smith, *The Utility of Force...*, 271.

<sup>197</sup> Paul K. Davis, *Analytical Architecture for Capabilities-based Planning, Mission-System Analysis, and Transformation*. National Defence Research Institute, RAND. (Santa Monica, CA, 2002), 2-3.

<sup>198</sup> *Ibid.*, 8.

<sup>199</sup> Nagel, *Learning to Eat Soup with a Knife...*, 29-30.

therefore, they are hesitant to adopt structures or change operating concepts to counter these threats.

In the application of force, modern armed forces strive for density in troops, equipment, and firepower; a typically classical approach. Density on the battlefield is not just concerned with the size and nature of the forces arrayed, but also of the element of force applied against an adversary.<sup>200</sup> There has been an almost constant search amongst industrialized nations for that magical technical and tactical innovation that will achieve superiority – or density. However, each and every innovation and change results in a corresponding change or adaptation that neutralizes or renders the initial innovation obsolete or redundant.<sup>201</sup> Perhaps density in force is no longer about tangibles such as equipment and firepower, but more about density in actors, ideas, and connections?

Having the necessary density in forces size and composition, technical and tactical advantage does not always render a victor. The French and US experiences in Vietnam support this supposition. Both the French and the US approached the conflict in Vietnam from an industrial nation approach to war, yet both were defeated. By applying increasingly larger numbers of forces, relying upon technical and tactical advantage they sought to defeat the backward, poorly armed, and simple peasant insurgency. Vietnam is the classical example of modern, industrial state on state warfare, which ran into the new concept of conflict.<sup>202</sup> The superior military capacity and strength of a force is not strictly limited to how many forces can be fielded and the level to which they are

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<sup>200</sup> Smith, *The Utility of Force...*, 227.

<sup>201</sup> *Ibid.*, 228-229.

<sup>202</sup> *Ibid.*, 240.

equipped and trained.<sup>203</sup> Clearly the current concepts of density and the use of force need to be revisited?

There is also an expectation that victory will be decisive, heralding a return to peaceful pre-conflict conditions. The problem now becomes one of trying to fight the new conflicts against bazaar entities using equipment, tactics, and structures designed for industrial conflicts. This means taking what one has, the tank for example, designed to fight other tanks in large open spaces, and trying to modify its design and usage in complex situations such as urban sprawl, mountain, or jungle environments.<sup>204</sup> Most of these modifications and adaptations of industrial armies to the new threats are adhoc in nature, and reactive. In many cases, these reactive changes contribute to the aims of the new enemy.<sup>205</sup> In Afghanistan, in 2006, the Canadian military deployed the mine resistant RG 31 to provide greater force protection to patrols and reduce casualties from improvised explosive devices. However, the result was to further isolate the soldiers from the local population in these heavily armoured vehicles.<sup>206</sup> For the industrial army, the solution is sought in technology – robots, precision guided munitions, stealth, computers, force protection, unmanned vehicles, rather than ideas, actors, and concepts.<sup>207</sup>

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<sup>203</sup> Smith, *The Utility of Force...*, 241.

<sup>204</sup> Author's recollections: During Op MEDUSA in Kandahar Province, September 2006, the 1 RCR BG found it could not breach the natural fortifications and defensive measures that wadis, grape fields, irrigation canals, mud huts, and grape drying hits provided to the insurgent defenders. Without adequate breaching equipment capabilities on hand, the Canadian government authorized the re-activation and subsequent deployment of a Squadron of Leopard Tanks to theatre to assist in the breaching and destruction of these century's old obstacles.

<sup>205</sup> Smith, *The Utility of Force...*, 271.

<sup>206</sup> Authors recollections from deployment with TF 3-06 to Afghanistan (2006 – 2007).

<sup>207</sup> Dunnigan, *Digital Soldiers...*, 290.

A trend that Rupert Smith notes is that modern industrial state forces fight to “preserve the force.”<sup>208</sup> The nation state finds it difficult and costly to commit forces to a significant conflict for many reasons and the adversaries know this. As already mentioned, force protection and casualty aversion are two primary factors that drive force structure and development today.<sup>209</sup> For modern trained military forces, replacements in men and material are difficult, time consuming, and costly to force generate. Attracting and training soldiers today is problematic and costly.

Equipment procurement is lengthy and expensive and oriented toward conventional combat. It is no longer feasible to mass produce equipment on huge assembly lines as was the case during the Second World War. Many pieces of modern, technologically advanced equipment are supplied by other nations, making accessibility costly and time consuming. For the nation, it becomes exceedingly expensive to sustain modern forces in the field for very long.<sup>210</sup> For these reasons, many modern military forces remain firmly structured and equipped for conventional conflict against a near-peer or similarly equipped adversary; the Westphalian model. Firmly rooted in an old paradigm, with each new mission and new operation in the new security environment, military forces are constantly reorganized; an inefficient and costly process.

Modern militaries are structured and reflect the strengths and weaknesses of the societies from which they originate. Indeed, western military forces are characterized by higher educational levels, combined with an expectation of how soldiers should be treated and employed, all dictate that the forces operate in a technologically dependent

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<sup>208</sup> Smith, *The Utility of Force...*, 294-299.

<sup>209</sup> Currently Canada is planning on purchasing 108 heavy Close Combat Vehicle (CCV). These vehicles are exceptionally expensive and only a small number are being procured. The primary role of the CCV will be to accompany tanks on the battlefield against conventional forces.

<sup>210</sup> Dunnigan, *Digital Soldiers...*, 290.

manner, requiring an inordinate amount of effort and resources to sustain them in the field in an acceptable manner, while political leadership attempts to limit risks.<sup>211</sup>

Military organizations tend to aggregate experiences in order to simplify problems. For example, Counter Insurgency Operations (COIN) is a term that provides a nice tidy catch all for fighting small, dirty wars. Previously, the term small wars had been sufficient to describe these types of conflicts. However, the reality is that each conflict is separate and distinct on its own, requiring its own unique set of responses. Although Iraq and Afghanistan would appear to be the same, they are not. Recent conflicts such as Somalia, Yemen, Iraq, and Afghanistan are all varied in nature and context. Iraq is in fact a series of different conflicts with different motivations. Therefore, attempting to apply one set of lenses to understand each separate conflict is problematic.

The most recent conflict in Iraq consisted of 75 – 100 autonomous groups with diverse motivations ranging from ideological to patriotism to criminality.<sup>212</sup> Coalition forces attempted to apply a series of conventional solution sets to the Iraq problem, solutions that had been developed for other conflicts with differing contexts. The coalition’s aggregated solution set was so off the mark that their efforts actually brought internal enemies together in order to coordinate their efforts against coalition forces.

So what makes the small wars of today different from the small wars of yesterday? Why are they more significant today? The answer is simple. The insurgents and guerrillas today and tomorrow are more empowered. John Robb terms this as “superempowered”.<sup>213</sup> These groups today leverage modern technology and leading

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<sup>211</sup> Smith, *The Utility of Force...*, 24.

<sup>212</sup> Robb, *Brave New War*, 4.

<sup>213</sup> *Ibid.*, 11.

trends to the point where micro-groups and “lone wolves” now have the capability to create instability and even wage war against the state.

General Rupert Smith, in his book, *The Utility of Force*, cites six trends that characterize war in the new paradigm.<sup>214</sup> The ends for which state and non-state actors fight are changing to less tangible, and more fluid objectives. Wars are now fought among the people, not just in urban populations areas but with the addition of multi-media and technology, “in every living room”.<sup>215</sup> Conflicts seem to be without end as adversaries are seeking to establish conditions that must be maintained over time. Combatants fight with the goal of protecting the force, almost to the extreme of casualty aversion, rather than using the force without concern for cost.<sup>216</sup> Combatants develop new ways for using old technology and equipment to apply force. Conflict today is no longer prosecuted by single state entities against each other, the last being the Falklands War. Rather, combatants now form multi-national groupings such as coalitions and alliances, or establish loose non-state based organizations such as insurgencies, terror groups, narco-criminal elements, micro groups, or even single individuals such as the “lone wolf”.<sup>217</sup> These trends paint a picture of a conflict that is no longer confined in time and space, seeking a conclusive political outcome. Rather it is a global environment of constant and shifting confrontation and conflict where the boundaries between political, social, economic, and military activities fade, and contests of will involve all aspects of life.

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<sup>214</sup> Smith, *The Utility of Force...*, 19-20

<sup>215</sup> *Ibid.*, 19.

<sup>216</sup> *Ibid.*, 19.

<sup>217</sup> *Ibid.*, 19-20.

In the final analysis, military leaders, analysts, policy makers, and politicians believe that the solution to military utility and the efficient and effective application of force is a better structured organization with clear lines of command and control. Insurgents, on the other hand, operating within the context of irregular or small wars, adopt loose structures that are highly adaptable and amorphous.<sup>218</sup> The competitive edge goes to the insurgent. To reinforce this point, consider the US security apparatus (military, intelligence, law enforcement, and bureaucracy) and its cathedral structure, which proved ineffectual to prevent the events of September 11, 2001. This despite the enormous sums of money, time and effort spent on building a state of the art, world class military capability.<sup>219</sup> The cost to select, train, and deploy the 911 attackers was negligible compared to US military spending on defense. Despite the attack, the US military, as do other nations' militaries, continues to plan, fund, and structure their forces to respond to a conventional threat from another nation-state. Indeed, China, Iran and North Korea are central to the posture of Western military forces.<sup>220</sup>

### **Competitive Advantage**

It is clear so far that in the new security paradigm, the adversary has the competitive advantage. When one compares a modern conventional force operating against an insurgency in the new threat paradigm, the analysis highlights some dichotomies.<sup>221</sup> Military forces appear to hold the advantage through the use of modern technology, access to accurate and detailed information, immense and precise firepower,

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<sup>218</sup> Jeffrey B. White, "Some Thoughts on Irregular Warfare." Centre for the Study of Intelligence. Central Intelligence Agency. <https://www.cia.gov/library/center-for-the-study-of-intelligence/kent-csi/vol39no5/pdf/v39i5a07p.pdf> (accessed 8 April 2013).

<sup>219</sup> Robb, *Brave New War*, 7.

<sup>220</sup> *Ibid.*, 7.

<sup>221</sup> White, "Some Thoughts on Irregular Warfare" Centre for the Study of Intelligence. Central Intelligence Agency. <https://www.cia.gov/library/center-for-the-study-of-intelligence/kent-csi/vol39no5/pdf/v39i5a07p.pdf> (accessed 8 April 2013).

operational and strategic mobility, highly trained and motivated all-volunteer force of professionals, supported by extensive logistical efforts, all framed within a rigid structure of command and control.<sup>222</sup> This is all overshadowed by the fact that military forces are controlled and accountable to the state and the people for its actions and its costs.

When insurgents mass in open terrain, the modern military force is far superior. However, insurgents tend to operate on terrain of their choosing, known to them, supported by the local population, avoiding decisive engagements through small raids, ambushes, and skirmishes.<sup>223</sup> Smaller engagements consume less of their resources and reduces own casualties while inflicting casualties on forces that typically are casualty averse. In fact Western democracies are highly sensitive to casualties and collateral damage, a limiting factor on the employment of military forces. Insurgents tend not to be constrained by logistics and financing as are modern military forces. Command and control structures for the small forces tend to be fluid and adaptable, making it difficult to target and neutralize by conventional forces.<sup>224</sup> The bazaar entity has no identifiable centre of gravity, no command and control structure, it is leaderless, and has no single motivation.<sup>225</sup> A bazaar is un-targetable by modern military standards whether by combat, information, or psychological operations.<sup>226</sup> Further, the insurgent is not constrained by time as are modern military forces. So, is it possible for the modern military force to regain the competitive advantage?

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<sup>222</sup> White, "Some Thoughts on Irregular Warfare" Centre for the Study of Intelligence. Central Intelligence Agency. <https://www.cia.gov/library/center-for-the-study-of-intelligence/kent-csi/vol39no5/pdf/v39i5a07p.pdf> (accessed 8 April 2013).

<sup>223</sup> *Ibid.*

<sup>224</sup> *Ibid.*

<sup>225</sup> Robb, *Brave New War*, 118.

<sup>226</sup> *Ibid.*, 118.



Autonomous groups are exceedingly robust when faced with the threat of military force. Without a formed structure or leadership model, they lack an identifiable and tangible center of gravity (COG)<sup>227</sup> that can be targeted with military force. Their structure is akin to the structures found within the software development communities and other leading edge internet based businesses. These structures are based upon a community network that works in an open source manner. They are extremely innovative, adaptable, and flexible. They have a decision-making cycle that works faster and more effectively than a conventional military structure, enabling these groups to remain one step ahead of conventional forces.<sup>228</sup>

While the industrial states' militaries have been planning for a conventional fight against a near-peer, there has been a quiet revolution in military affairs (RMA) from the adversary in terms of Command and Control. Open source characterizes how these micro-actors recruit, train, equip, and structure themselves in order to conduct operations. These organisms learn, share, and adapt to the changing environment more frequently than modern hierarchically structured entities.<sup>229</sup> The modern military might learn some lessons from the open source movement.

The open source movement in software development provides an example of how a large entity moved from a cathedral-like organization to a successful bazaar structure. A cathedral organization is very top-down in terms of structure and decision-making. The cathedral has a single decision-maker or organism that makes the decisions for the

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<sup>227</sup> The COG is "the principle source of strength or power for achieving one's aim." Canadian Forces College (CFC). "CFC Guide to Operational Planning Process." CFC 230. Canadian Forces College, Department of National Defense, Government of Canada, II-9/17.

<sup>228</sup> Robb, *Brave New War*, 4.

<sup>229</sup> Eric S. Raymond, *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary*. (O'Reilly Media Inc, 2008), 54.

entire structure.<sup>230</sup> Lower levels of authority, bound to the single decision-making entity, within the cathedral, are authorized to make decisions for their section within the structure. Within the cathedral, the chain of command and lines of communication are very clear and vertical. Information typically flows up and down with very little horizontal exchanges.

A bazaar-like organization takes a bottom-up approach to decision-making. Typically, there is no one –single decision-maker or entity. In the bazaar construct, a wide variety of contributors establish shared understanding of the problem and collaborate to create a joint decision from the bottom up.<sup>231</sup> The lines of communication, vertical and horizontal, enable access across and throughout the entity. Information and communications flow freely.

Many cathedral organizations in business have adopted open source methodology in the way they function and make decisions. It is clear that “the cutting edge of open-source [software] will belong to people who start from individual vision and brilliance, then amplify it through the effective construction of voluntary communities of interest.”<sup>232</sup> Applicability to military capability needs further research.

If the military wants to be on the cutting edge, rather than reacting to events, it might want to consider adopting some aspects of open source methodologies. The military is traditionally a centralized organization: a cathedral. It is used to viewing problems through centralized lenses therefore it has great difficulty in understanding

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<sup>230</sup> Raymond, *The Cathedral and the Bazaar...*, 53-54.

<sup>231</sup> *Ibid.*, 54

<sup>232</sup> *Ibid.*, 54.

decentralized organizations.<sup>233</sup> Consequentially, “the closed-source world cannot win an evolutionary arms race with open-sourced communities that can put orders of magnitude more skilled time into a problem.”<sup>234</sup> Thus we will see the nation-state continue to fall further behind its adversaries and if combined with an escalation in conflict, stability around the world will remain in question.

Open source is a form of development for software which originated with the advent of the internet. The arch-typical form of development by the large corporations was highly structured, controlled, and driven from the top down. The open source method opens up the process to a wide variety of users across the globe, all connected through the internet.<sup>235</sup> This open process has little in the way of centralized control and in fact is very decentralized, tapping into an immense pool of people, a crowd so to speak, from different backgrounds and experiences. The open source movement has applications in the world of insurgency.

The open source concept enables the aggregation of many minds and experiences providing useful and novel solutions to complex problems.<sup>236</sup> Compare this approach to the closed system such as adopted through large corporations. Given a complex problem, the corporation using a top-down, structured, closed system relies upon a small group of experts to solve the problem. These experts, working for money, have all been educated and developed within the same institutional standards, norms, and biases. They will

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<sup>233</sup> Ori Brafman and Rod Beckstrom. *The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations*. (New York: Penguin Group, 2006), 34.

<sup>234</sup> Raymond, *The Cathedral and the Bazaar...*, 54.

<sup>235</sup> Robb, *Brave New War*, 114.

<sup>236</sup> Brafman and Beckstrom, *The Starfish and the Spider...*, 34.

arrive at a series of solution-sets that fit within their experiences, standards, norms, and biases.<sup>237</sup>

An open source approach, using the long tail of expertise theory, provides a greater series of solution-sets as it taps into a wider and diverse population.<sup>238</sup> The population within the open source process works for different motivations rather than financial, therefore they have a greater interest in finding the best solution. One only need compare Encyclopaedia Britannica with Wikipedia.<sup>239</sup> Wikipedia, an open source process, is compiled, edited, and updated almost immediately by a wide variety of users, motivated by a desire to produce a comprehensive and polished product.<sup>240</sup> With more users working on entries, Wikipedia has fewer errors or inaccuracies than Encyclopaedia Britannica. Wikipedia is almost always up-to-date with the most modern and current entries, whereas Britannica is only as current as its published date.<sup>241</sup>

Taking lessons from the software development movement, insurgents have adopted open source warfare. For insurgents, open source warfare means that they can exchange information, work collaboratively, and improve on planning attacks, developing strategies and tactics, developing or acquiring weaponry and other methods of attack, motivation and targeting suggestions, and other lessons during their individual operations.<sup>242</sup> This form of warfare is highly innovative and adaptive. As information is exchanged and developed by the community, rather than by a single individual or group, modern military forces are left behind and lose the competitive edge. Thus, modern

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<sup>237</sup> Brafman and Beckstrom, *The Starfish and the Spider...*, 34-35.

<sup>238</sup> Robb, *Brave New War*, 72.

<sup>239</sup> *Ibid.*, 115.

<sup>240</sup> Brafman and Beckstrom, *The Starfish and the Spider...*, 73.

<sup>241</sup> There are shortcomings associated with Wikipedia such as unverifiable updates and authors, etc. While Wikipedia certainly provides utility, it has not matured to an acceptable scholarly level as Britannica.

<sup>242</sup> Robb, *Brave New War*, 116.

military forces are always playing catch-up and reacting to events rather than setting the tempo and controlling events. Yet, military forces still attempt to apply outmoded thinking to a modern and continuously evolving problem.<sup>243</sup> One could argue that the adversary has undergone a RMA while the modern nation-state seeks its RMA in technology. Ironically, given the length of time and effort it takes for modern military force development and procurement, combined with the rapid rate at which technology evolves, by the time the technology is fielded, it is typically out-of-date.

As discussed so far, the new adversary typically has not formed a structured, organized, and formal military force.<sup>244</sup> The bazaar entity is fluid and dynamic, adapting to the environment (people, location, environmental conditions, the threat, the political atmosphere, etc). The connecting factor among the insurgents is typically the ideological foundations or shared interests of the movement.<sup>245</sup> Conversely, the modern, industrial state-based military force is a rigid, hierarchical, structure based upon a formed and formalized force. The connecting factor throughout the cathedral organization is its top down, command and control architecture.

The top down, command and control methodology in use today among modern military forces, such as the CAF, was established with the origins of the Westphalian model of warfare. Indeed, military professionals, influenced by classical military theorists, adhere to Jomini's principle that the military commander maintains absolute control over decision-making process.<sup>246</sup> This approach, coupled with a conventional mindset, for both military and political leaders, fosters problem solving methods that are

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<sup>243</sup> Van Riper, "Planning For and Applying Military Force", 2.

<sup>244</sup> Although, some organisms such as *Hezbollah* have a military wing.

<sup>245</sup> Smith, *The Utility of Force...*, 331.

<sup>246</sup> Nagel, *Learning to Eat Soup with a Knife...*, 18.

outmoded. With this approach, “information flows up from the bottom, being aggregated at specific points in the chain of command, and orders and instructions flow down, being disaggregated into detailed tasks at each point in the chain.”<sup>247</sup> Much like rain water running down a window pane in long streaks, this structure constrains the flow of information, direction, guidance, and orders, forming “stovepipes” or “silos of expertise”. Stovepipes establish vertical conduits of information, typically isolated from global context. The cathedral structure essentially operates in a vertical manner while most of the issues presented in the modern battlespace cut across the silos horizontally.<sup>248</sup>

Decision-making and problem solving for military organizations is conducted by small groups in a hierarchical manner using a formal process. In applying this model to complex security dilemmas, “the scientific model of using sequential steps, assumed objectivity and rational logic to define, analyze and solve the problem” is generally considered unsuccessful.<sup>249</sup> Conversely, the adversary has adopted a more expansive and fluid method for decision-making and problem solving. The adversary again has absorbed leading edge trends, such as crowd sourcing, which have added to their competitive edge.

Crowd sourcing decisions and problems for a military force appear completely unconventional. By seeking out crowds for problem solving, one opens up connections to a wide and diverse base of experience, knowledge, skill, and understanding. As James Surowiecki has discovered, there is wisdom in crowds. In fact, he argues that “under the right circumstances, groups are remarkably intelligent, and are often smarter than the

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<sup>247</sup> Smith, *The Utility of Force...*, 331.

<sup>248</sup> *Ibid.*, 397.

<sup>249</sup> Okros, Verdun, and Chouinard, *The Meta-Organization...*, Section 2-2.

smartest people in them.”<sup>250</sup> Indeed, “We generally have less information than we’d like. We have limited foresight into the future. Most of us lack the ability – and the desire – to make sophisticated cost-benefit calculations.”<sup>251</sup>

Military planning teams, command elements, and decision-making bodies at the tactical, operational, and strategic level are homogenous. They all come from the same background and experiences, all are trained institutionally within the military professional training system to look at problems the same way, stamped with the same norms, standards, biases, and outlooks.

Homogenous groups are subject to “groupthink”,<sup>252</sup> dependent upon each other, insulated from outside or diverse opinions, and self-convincing of the rightness of the groups decision.<sup>253</sup> With homogenous groups mired within the groupthink construct, dissent or minority opinions become unlikely. Therefore ingenuity and innovation are stifled. Groupthink is prevalent within military bodies tasked with decision-making or problem solving.<sup>254</sup> By the very nature of a military force, every member is uniform in thought and action, regardless of specific trade.

Homogenous groups also run the risk of herding. Herding is that phenomenon in small group decision-making whereby the individual members of the group follow the pack and, rather than innovate and accept greater risk, choose the same path that the majority of the group follows.<sup>255</sup> This cautious approach highlights a philosophy of risk

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<sup>250</sup> James Surowiecki, *The Wisdom of Crowds*. (New York: Anchor Books, 2005), XIII.

<sup>251</sup> Surowiecki, *The Wisdom of Crowd*, XIV.

<sup>252</sup> A situation where group pressure for conformity deters a group from critically evaluating unusual, unpopular or minority views.” SP Robbins, B Millett, R Cacioppe, and Waters-March, *Organisational Behaviour: leading and managing in Australia and New Zealand*, 3<sup>rd</sup> edn, (Prentice Hall Australia, Frenchs Forest, New South Wales, 2001), 770.

<sup>253</sup> Surowiecki, *The Wisdom of Crowds*, 36-37.

<sup>254</sup> Van Riper, “Planning For and Applying Military Force”, 2.

<sup>255</sup> Surowiecki, *The Wisdom of Crowds*, 49.

aversion that permeates within the group. Very few, if any, subordinate officers will challenge the assumptions of the commanding officer in an orders group or planning session, resulting in an absence of debate or minority points of view. Without these variances, innovation and ingenuity dry up.

Small group cohesion can also work against the potentiality of making sound decisions. Within the group, for example a commander's orders group or a planning team, the participants view themselves as part of a team and the group develops its own identity. Therefore, each member has an ability to influence the judgements and opinions of the other group members.<sup>256</sup> This influence is direct and can be immediate. Assumptions can be false or skewed based upon influence.<sup>257</sup> The initial direction given to the group, such as Commanders Planning Guidance (CPG), can influence a closed-minded approach by eliminating other possibilities.<sup>258</sup> These groups tend to start with conclusions and work towards gathering information and evidence to support these conclusions.<sup>259</sup> This is referred to as "conformation bias", whereby those who make decisions select that information that supports their intuitions.<sup>260</sup> Therefore, it is possible for these groups, under influence of erroneous or incomplete information, to make incorrect decisions.

Even when there is an effort to achieve consensus, military decision-making bodies can be hampered by group polarization. Group polarization is that process by which, during the deliberation of some problem or issue, the group, rather than moderate and expand people's points of view, the deliberation actually radicalizes those points of

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<sup>256</sup> Surowiecki, *The Wisdom of Crowds*, 176.

<sup>257</sup> Okros, Verdun, and Chouinard, *The Meta-Organization...*, Section 2-2.

<sup>258</sup> Van Riper, "Planning For and Applying Military Force", 2.

<sup>259</sup> Surowiecki, *The Wisdom of Crowds*, 177.

<sup>260</sup> *Ibid.*, 178.



view.<sup>261</sup> The group then becomes polarized toward one set of solutions rather than embracing diversity. This is common within a military group as members tend to follow the direction of the chain of command rather than face sanctions for independent thought.

Polarization occurs for many reasons. The military is a competitive organization by nature, thereby making the members competitive among each other. Through social comparison, the members attempt to maintain their relative position in comparison to the other members.<sup>262</sup> Military members do not want to be seen as boat-rockers or holders-of-opinions contrary to the boss and will, therefore, try to find the “right” answer; the answer the boss wants. Those who are unsure or unprepared will also adopt the position of others within the group, even if it is to avoid public shaming.

Rank and the chain of command also contribute toward polarization. Those with higher rank or more important positions will tend to speak first, or receive more “air time” than those of lower rank or lesser position. It is quite common in an Infantry Battle Group planning group for the Artillery or Engineer Advisor to hold more sway and speak longer than the Logistics Advisor even though both arms rely upon sound logistics to conduct their operations. The end product of group polarization is a decrease in diversity, ingenuity, and innovation toward decision-making and problem solving within the group.<sup>263</sup>

Military commands are kept relatively small in order to facilitate the decision-making process and maintain operational security (OPSEC). Traditionally, large groups are avoided because it has been determined that beyond a certain size, the group becomes

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<sup>261</sup> Surowiecki, *The Wisdom of Crowds*, 184.

<sup>262</sup> *Ibid.*, 185-187.

<sup>263</sup> *Ibid.*, 187.

unwieldy, taking too long to make decisions, and the process becomes too difficult.<sup>264</sup>

Today with the advent of modern technology, the group size can expand and incorporate diversity and heterogeneity, aggregate information from a wide variety of sources, casting a wider net and exploiting the wisdom of crowds.

The more information that a group has the better its decision-making will be. Therefore, it is important to include as many people as possible in the process. This is based upon the idea of the logic of plenty.<sup>265</sup> An “open approach to problem solving can open the door to accelerated innovation and to solutions to globally critical problems of nourishment, environment, health, and energy.”<sup>266</sup>

Wise crowds are characterized by diversity of opinion, independence, decentralization, and aggregation.<sup>267</sup> Alpheus Bingham and Dwayne Spradlin, in discussing the long tail of expertise, argue that diversity, marginality, and serendipity are three characteristics of crowds in problem solving.<sup>268</sup> Large numbers of people solving problems is only beneficial when the approach used by people differs. Therefore, a diverse group with diverse backgrounds provides a much richer selection in solutions.<sup>269</sup> Those coming at a problem with the same approach will invariably arrive at the same or similar solution sets.

Individual judgement is not as accurate or consistent enough as cognitive diversity in making decisions, which increases a groups solution sets and encourages

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<sup>264</sup> Surowiecki, *The Wisdom of Crowds*, 276.

<sup>265</sup> Alpheus Bingham and Dwayne Spradlin. *The Open Innovation Marketplace*. (Pearson Education. InnoCentive Inc., 2011), 85.

<sup>266</sup> *Ibid.*, 86.

<sup>267</sup> Surowiecki, *The Wisdom of Crowds*, 10.

<sup>268</sup> Bingham, *The Open Innovation Marketplace*, 77.

<sup>269</sup> *Ibid.*, 79.

innovation and ingenuity.<sup>270</sup> In terms of marginality, experts with expertise in specific areas come with, norms, beliefs, constraints, and bias in thinking and approach. These aspects of expertise hamper the experts' ability to parse new ideas and new ways of thinking.<sup>271</sup> There is also a function of arriving at solutions or making discoveries through accident or good fortune, otherwise known as serendipity. Serendipity occurs in spite of dedicated attempts to innovate or processes and approaches inculcated through institutionalizing processes.<sup>272</sup>

Insurgents today have adopted the long tail of warfare that is similar to that found in internet marketing and sales.<sup>273</sup> Insurgents like Che Guevara and Mao Tse Tung maintained a single guerrilla movement. Today insurgency conflicts comprise many smaller and diverse groups with differing motivations and objectives. As mentioned, Iraq had as many as 75 different groups operating at the same time. Despite the fact that these groups are in competition with each other, they also have the capability of working together to achieve their goals against a modern military force.

Unlike Mao and Che, sole source providers of instability, this long tail of insurgent warfare is enabled by the same factors that have aided the online retail market. The decentralization of the tools of warfare make it cheaper and easier to wage war against the state, as witnessed on September 11<sup>th</sup> 2001. There is unlimited shelf space as rapid technological developments allow these groups to network much more easily.<sup>274</sup> Al Qaeda can much more readily influence and aid in the self radicalization of people in

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<sup>270</sup> Surowiecki, *The Wisdom of Crowds*, 36.

<sup>271</sup> Bingham, *The Open Innovation Marketplace*, 80.

<sup>272</sup> *Ibid.*, 80-81.

<sup>273</sup> Robb, *Brave New War*, 73-74.

<sup>274</sup> Non-state actors now have access to a wide range of weapons, tactics, techniques and procedures to wage war that were never available to predecessors such as Che Guavara or Mao Tse Tung.

every country today, almost simultaneously, given modern technology and social networks. Che Guevara took three months to travel to a dozen countries to spread his messages and only influenced a few. Nor could he sustain his message once he departed. Finally the low barriers to entry enable anyone to self radicalize and take up arms against the state, such as the London Subway bombers of July 2005 or the Toronto 18.<sup>275</sup>

The long tail of expertise is that idea which postulates that statistically speaking, in a distribution of probabilities, the largest number of occurrences and the largest percentage of the population of probabilities lies in the tail.<sup>276</sup> These probabilities are typically far from the mean and tend to magnify the asymmetry of the probability distribution.

Outpacing modern industrial forces, modern insurgencies have embraced the logic of plenty, or the long tail of expertise. Through the use of networking and modern technology, the long tail of trans-national terrorists, criminals, insurgents, micro-non state actors, and lone wolves enable their individual efforts through an aggregated sharing of information, experiences, and ideas in order to collectively problem solve in areas of crime, instability, and conflict against the nation-state.<sup>277</sup>

Turning to structure, the bazaar or market place offers many benefits not enabled through a cathedral structure. Insurgencies today are much like the starfish, which is the epitome of a decentralized animal.<sup>278</sup> Starfish do not have a head and its major organs are replicated throughout the body. Therefore, if one cuts a starfish in half the starfish does not die. Rather the act of cutting forms two starfish. Indeed, some starfish are

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<sup>275</sup> The two brothers who are alleged to have perpetrated the Boston Marathon Bombing fit this description.

<sup>276</sup> Robb, *Brave New War*, 72.

<sup>277</sup> Arquilla and Ronfeldt, *Networks and Netwars...*, 344.

<sup>278</sup> Brafman and Beckstrom, *The Starfish and the Spider...*, 35.

capable of replication from a single arm which means you can chop the starfish into many pieces and receive many new starfish.<sup>279</sup> This is possible because the starfish is a network of cells which function in a decentralized manner without a central command and control function. AQ is a typical starfish organism.

Ori Brafman and Rod Beckstrom, in their work, *The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations*, lists a number of principles that apply to decentralized organisms. These principles of open systems include: not having a central intelligence, easily mutate-able, rapid growth, as industries decentralize their successes decrease, and participants are motivated to contribute in an open system as it provides a sense of community.<sup>280</sup> Open systems also have a higher tolerance for innovation,<sup>281</sup> ambiguity, and fluidity.<sup>282</sup> When attacked these open groups decentralize even further, ensuring their survivability through dispersion.<sup>283</sup> These principles do not apply to cathedral structures.

Without an identifiable head or leader, these organisms require something else to motivate and move them. “Ideology is the glue that holds decentralized organizations together.”<sup>284</sup> Take the pre-American Apache Indian tribe as an example of an open and decentralized organism. The Apache all maintain a common ideology or belief that they belonged to the land and that they deserved to govern themselves.<sup>285</sup> The Spanish conquerors could not defeat this decentralized organism, so they offered land for farming. In this case they offered to raise the standard of living for the Apache with economic

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<sup>279</sup> Brafman and Beckstrom, *The Starfish and the Spider*..., 35.

<sup>280</sup> *Ibid.*, 95.

<sup>281</sup> *Ibid.*, 97.

<sup>282</sup> *Ibid.*, 127.

<sup>283</sup> *Ibid.*, 129.

<sup>284</sup> *Ibid.*, 95.

<sup>285</sup> *Ibid.*, 95.

leverage through the owning of land in order to produce subsistence rather than wandering nomad-like to follow the herds, surviving on what they could find or hunt. Those that were co-opted took the land while the rest who held strongly to the belief fought against the Spanish to the death.<sup>286</sup> In the end, the Apache were defeated when the ideology or belief had been sufficiently changed to undermine their insurgency. What is also significant with this example, is that with the acquisition of land, some Apaches became centralized and targetable.

Primarily, it is ideology that fosters the motivation and movement of the decentralized organism. The organism, without a centralized command and control structure, and is effectively leaderless, requires some form of initiation or catalyst to spark movement. “The catalyst provides the drumbeat for the decentralized organization.”<sup>287</sup> However, the catalyst needs the ideology or belief to keep the organism functioning. The catalyst typically starts the organization but then steps back and acts as a facilitator and communicator of ideas and concepts. John Robb would categorize the catalyst in insurgencies as a violence capitalist: one who owns, invests in, and supports violence.

Abu Musab al-Zarqawi was a catalyst in the Iraqi insurgency conducted by AQI. The original ideology or belief that brought fighters to the insurgency was the establishment of a Caliphate that would unite all Muslims.<sup>288</sup> Al-Zarqawi began as an operational level commander of a cell, however, as more cells appeared in the battlespace, al-Zarqawi transcended to a role of strategic communicator. He modified the ideology to the environment and espoused an idea that the US occupation could be

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<sup>286</sup> Brafman and Beckstrom, *The Starfish and the Spider* ..., 95.

<sup>287</sup> *Ibid.*, 124.

<sup>288</sup> Robb, *Brave New War*, 18.

defeated and Shia domination could be defeated.<sup>289</sup> When al-Zarqawi was killed by the US, another catalyst, or violence capitalist, stepped in to the role. Much like a starfish, al-Zarqawi was cut out from the organism and a new catalyst was replicated.

But is there really a difference between the commander or leader and a catalyst? The answer is yes. The commander or leader of an organization is the boss.<sup>290</sup> He or she utilizes a command and control structure to pass information and direction up and down the chain. The commander utilizes rational thought and a formal decision-making process when presented with problems.<sup>291</sup> The commander commands and uses the power of command and leadership to direct the organization. The commander leads from the front and is seen to be involved. In order to reduce chaos the commander will impose order and discipline on the processes of planning and execution of tasks. In essence, the commander is an integral part and not easily replaceable. If the commander falls, all of the ideas, knowledge, and concepts that reside with that person disappear.

In contrast, the catalyst is easily replaceable. The catalyst works as a peer to the collective rather than a boss.<sup>292</sup> The system functions on trust with inspiration as the motivator. The work of the organization is based upon emotional intelligence and is collaborative in nature. The catalyst will work behind the scenes to move the organism along rather than out in front. The organism works best in ambiguity allowing creativity and innovation to flourish. There is no need for order or discipline as each member of the community is connected and networked, working towards the goals of the collective.

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<sup>289</sup> Robb, *Brave New War*, 112-113.

<sup>290</sup> Brafman and Beckstrom, *The Starfish and the Spider ...*, 130.

<sup>291</sup> Van Riper. "Planning For and Applying Military Force", 4.

<sup>292</sup> Brafman and Beckstrom, *The Starfish and the Spider ...*, 130.

More and more modern military forces seek solutions in technology. Smarter weapons, stealthier and lighter equipment, precise information, faster processors are all part of the modern solution set to complex problems that result from socio-economic and political problems.<sup>293</sup> Although it is accepted that for progress to occur technology is a vital aspect of that march forward, however, it is not the solution.

Technology is only as good as the personnel who use it and the policy behind the employment. The Canadian Army has invested years of effort and large sums of money in developing a Command Support Project (CSPP), as a part of the overall Land Force Command and Control Information System, to aid in decision making and situational awareness (SA) for the commander.<sup>294</sup> This pilot project (CSPP) eventually stalled in the search for the right blend of technologies. The project then transitioned into the Land Command Support System (LCSS) that incorporates some aspects of the old CSPP but new aspects of communications, SA, information sharing, and others. LCSS is expected to tie into the CAF's program for C4ISR (command, control, communications, computers, intelligence, surveillance, reconnaissance). Unfortunately the Royal Canadian Navy (RCN) and the Royal Canadian Airforce (RCAF) have no desire to adopt the LCSS and will continue with a legacy system that cannot integrate with LCSS. So, in Canada's search for a technological edge over its competitors in security operations, it fails.

Is it possible for an organization, such as a military force, with a rigid top-down structure, of working in a decentralized manner, tapping into a larger crowd of

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<sup>293</sup> Dunnigan, *Digital Soldiers...*, 291.

<sup>294</sup> Lieutenant Colonel J.P. Bergeron and Major L. Xenos. "The Land Force Command and Control Information System Version 1." *The Canadian Army Journal*, 6, no 1. (Spring 2003). [http://www.army.forces.gc.ca/caj/documents/vol\\_06/iss\\_1/CAJ\\_vol6.1\\_10\\_e.pdf](http://www.army.forces.gc.ca/caj/documents/vol_06/iss_1/CAJ_vol6.1_10_e.pdf) (accessed 5 April 2013)



contributors for decision-making? A case study of the 2003 global outbreak of SARS may provide some insight into this question. In order to combat the outbreak, the World Health Organization (WHO), a governmental structure with a centralized command and control framework, undertook a world-wide effort to discover the cause of SARS. The WHO engaged seven independent research laboratories around the world to work on the problem.<sup>295</sup>

The WHO brought the labs together and provided the overall guidance and information on the virus but the individual labs worked independent of the WHO. In this case the WHO was more of a catalyst, a coordinator, rather than a boss. The labs organized themselves. Each day the labs teleconferenced collectively, sharing their work, debating results, developing further lines of research, all motivated to work together to help in finding a cure.<sup>296</sup> Finding a cure was their belief or ideology that bound them together.

Given that the independent labs were working together collaboratively, yet in a decentralized manner, they were able to work on the same virus samples, simultaneously, faster and more effectively than could one centralized lab.<sup>297</sup> Where it would have taken one lab months or years to solve, these labs found the cause of the virus only after a month of work.

In the SARS case, trust and freedom were two important characteristics for the approach to be successful.<sup>298</sup> As the WHO had no authority over the labs, it had to trust that the labs would pursue the information vigorously and make sound judgements on

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<sup>295</sup> Surowiecki, *The Wisdom of Crowds*, 158-159.

<sup>296</sup> *Ibid.*, 159.

<sup>297</sup> *Ibid.*, 160.

<sup>298</sup> *Ibid.*, 160-161.

research efforts. Each lab had to trust the other labs to be open and transparent, and share their work. The labs, as independent entities were free to work to their strengths and follow lines of research that they thought were pertinent, rather than be directed by the WHO on where to focus their efforts. At the end of the day, organizational survival is a critical motivator for the process of change. Without change, would organizations like the WHO remain relevant?

### **REGAINING THE COMPETITIVE EDGE**

Predicting future conflict is extremely difficult. However, it is possible to observe trends and extrapolate themes in order to orient the force for possible and potential conflicts. Clearly the adversary is doing this now. One thing is certain, the global security environment is becoming more and more complex and conflict is more persistent and continuous. Indeed, “the future security environment will be characterized by potential state-on-state conflicts, by ever-evolving asymmetric threats, by non-state actors and rogue states, and by social, economic, environmental, and resource problems that could possibly lead to instability”<sup>299</sup> Given this fact, modern military organizations need to orient themselves to face these modern threats rather than remain oriented for the last conflict.

Clearly, “the battle-space of the future will necessitate operations at home and abroad, in physical or cyber-engagement spaces, in urban-littoral areas, or in extreme terrains (e.g., jungle, desert, or arctic climates).”<sup>300</sup> Therefore, modern military forces such as the CAF must be prepared and oriented to operate within these environments. A properly structured and equipped force, manned, trained, and ready can “expect to be

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<sup>299</sup> Department of National Defence. Chief of Force Development (CFD). *The Future Security Environment 2008-2030 Part 1: Current and Emerging Trends*. (Ottawa: DND Canada, 2009), 88.

<sup>300</sup> *Ibid*, 88.

tasked across the full spectrum of operations on both domestic (routine, contingency, sovereignty) and expeditionary missions (humanitarian, stabilization, reconstruction, combat).”<sup>301</sup> This force will also need new expectations, new lenses for viewing problems, and should adopt new trends and concepts.

Given this new paradigm in security, it is clear that military forces need to transition in order to remain competitive.<sup>302</sup> The question then becomes how much change needs to occur? In reviewing the information on starfish organizations, networking, and collaborative decision-making, is it necessary for a military force to transition to a bazaar and become like its enemy? If a force transitions to a bazaar organization, what happens if it meets another cathedral force on the battlefield? How are the functions of procurement, training, and support of a modern force prosecuted to ensure it remains competitive? Is there some middle ground that enables the force to adopt some of these innovative market-driven concepts and still remain a viable and competitive force?

Change clearly needs to be evolutionary for 21<sup>st</sup> Century organizations, brought about by the demands and rigours of the industrial world of the 18<sup>th</sup> Century, to retain a competitive edge. If we believe in the wisdom of crowds and the long tail of expertise, surely soldiers, sailors, and airmen at all levels need to be brought into the discussions to illicit innovation, ingenuity, and creativity. Therefore some level of decentralization throughout the structure needs to occur. What modern military commanders fail to see is that those who are closest to the coal face develop the best ideas. Rather than try to fill the gap by imposing technological solutions commanders need to learn to empower and

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<sup>301</sup> Chief of Force Development (CFD). *The Future Security Environment...*, 88.

<sup>302</sup> Friesen, “Slaying the Dragon”, 32.

trust their subordinates to do the right thing.<sup>303</sup> Decentralization will go along way to combating a decentralized entity such as the starfish organizations detailed throughout this paper.

So how does one kill a starfish? Starfish can be left in the sun to dry out or it can be smashed into pulp. The starfish also has natural predators which can destroy it. In some cases another, larger starfish will eat a smaller starfish. Seagulls, as well as, sharks, manta rays, and other predatory fish will kill starfish. But what does that mean for modern military forces? A nation-state would have to deploy a sufficiently large enough force to collect up all aspects of an insurgency and isolate it from its environment to “dry” it out or smash it completely. This approach is not feasible from an economic or military perspective given the size of the operation required. Perhaps the military can transform itself into a starfish organization, one that can hunt and kill other starfish organisms, such as insurgencies?

Returning to Brafman and Beckstrom, they offer three strategies to combat starfish: change the ideology, centralize the enemy, and decentralize the self. The first two options are designed to change or reduce the power and effectiveness of a decentralized network.<sup>304</sup> Changing an ideology is extremely difficult and onerous.<sup>305</sup> A deeply held world view cannot be changed overnight and requires continuous, sustained effort across all aspects of life. In terms of centralization, if a resource or something of value can be introduced into the decentralized organism, then the natural tendency of those who own the resource is to protect it. The Apache Indian experienced this when

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<sup>303</sup> Dunnigan, *Digital Soldiers...*, 287.

<sup>304</sup> Brafman and Beckstrom, *The Starfish and the Spider...*, 155.

<sup>305</sup> *Ibid.*, 149-150.

given land. Protection comes in the form of a centralized process that monitors, controls, and protects the commodity of value; thus creating a targetable hierarchy.<sup>306</sup>

Decentralizing is extremely challenging to undertake for a centralized structure. The problem with this strategy is that modern military forces and the nation-state are accountable and must be held to a higher moral standard. To adopt a decentralized model in the manner of insurgent organizations for military operations would be akin to creating anarchy. Each individual node would be free to undertake its own operations wherever it saw fit without regard to strategy, doctrine, political risk, or national will. Efforts would lack dedicated coordination at the tactical, operational, and strategic levels. Therefore, it is impossible at this time for a modern military force to completely decentralize itself and its functions. However, perhaps there is some utility in a combination of the various strategies?

The experiences of popular online shopping site eBay provide an example for the military in adapting to the new paradigm. eBay is a hybrid organization, neither centralized nor decentralized.<sup>307</sup> Organizations such as eBay embrace the bottom-up, networked methods of a decentralised entity while simultaneously framing operations within a command and control structure of a centralized entity. For companies such as eBay, they maintain centralized control over company functions but decentralise the experience of customer networking and interactions outward. This model has been adopted by many companies such as IBM, with great success.<sup>308</sup> There are other examples from the business world that offer possibilities.

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<sup>306</sup> Brafman and Beckstrom, *The Starfish and the Spider ...*, 153-154.

<sup>307</sup> *Ibid.*, 164.

<sup>308</sup> *Ibid.*, 178.

General Electric (GE) was a highly centralized cathedral-like entity. Under a new leader, GE was modified. It maintained its core centralised structure but decentralized large elements of the organization into stand alone units that were accountable for the efficiency of their operations.<sup>309</sup> Unit leaders were empowered with flexibility and independence to run their units as they saw fit as long as they adhered to the company's rules. GE's value escalated with this new hybrid model.

Some venture capitalist businesses reversed cathedral trends and undertook global, decentralised models that enabled small partners in far flung regions of the world to provide critical input about their region into the networked collective. This effort exposed the centralized leadership to experiences and knowledge which would have previously remained untapped.<sup>310</sup> As well, there is the "appreciative inquiry" model that allows centralized organizations to tap into each and every person within the company, from its CEO to its janitor.<sup>311</sup>

With these examples, the important aspect is the inclusiveness of the entities. Everyone within the network feels like they are involved and have a chance to share their ideas and, therefore, are more likely to support the business' plans. This is an aspect of the long tail of expertise, as a hybrid company extends its tail of expertise, to include a variety of others not normally considered to have input. What is most interesting in these examples is that the hybrid model allows these businesses to survive and remain competitive against decentralised challengers and outmoded centralised actors. Indeed,

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<sup>309</sup> Brafman and Beckstrom, *The Starfish and the Spider ...*, 175.

<sup>310</sup> *Ibid.*, 176.

<sup>311</sup> *Ibid.*, 178.

these organizations have changed their culture or philosophy from command and control to one of empowerment and engagement of its employees<sup>312</sup>

In adopting the hybrid model, the organization, must accept both order and chaos as part and parcel of the operating environment. Don Pontefract cites this concept, in his work *Flat Army: Creating a Connected and Engaged Organization*, as chaordic. Chaordic is “any self-organizing, adaptive, non-linear, complex system, whether physical, biological, or social, the behaviour of which exhibits characteristics of both order and chaos or, loosely translated to business terminology, cooperation and competition.”<sup>313</sup> Although Pontefract is discussing businesses, his ideas are applicable to military force structures.

How does a hybrid model apply then to the cathedral-like structure and top-down organization that is a military force? Much like eBay and GE, command and control would remain resident with the commander and his command team. The headquarters element would function more as a clearing house for information and coordination of activities and enablers.

The overall structure would remain intact, however, subordinate entities, as in the case of GE business units, would be provided with much more independence and incentive to conduct operations and secure successes in their assigned battlespace. In this case successes are not just combat operations but would include any operation that brings influence to bear on the adversary in some fashion. Returning to the concept of density then, building density is now more about bringing a wide and diverse group of actors and their collective influences to the conflict.

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<sup>312</sup> Dan Pontefract, *Flat Army: Creating a Connected and Engaged Organization*. (Canada: Jossey-Bass, 2013), 263.

<sup>313</sup> *Ibid.*, 258.

The C2 element would provide the overarching guidance, and some direction and rules of engagement (ROE) that would guide and shape the efforts of the subordinate units, however, it would not constrain or restrict innovation, flexibility, and adaptability. Subordinates would develop and undertake their own discrete missions within the parameters of the overall direction and guidance.

Indeed, subordinate units would be capable of working with other units without the presence of the commander or the command team. Subordinate units would be expected to conduct self-synchronization efforts to ensure their efforts were in line with other units. Commanders of subordinate units would be empowered and expected to coordinate operations with other units in the absence of the overall commander. The incentives to do well would be tied to enablers. Those who demonstrate success would see enablers pushed to them on a regular, unfettered basis. Additionally, in some cases those members who are best able (through training, education, experience, leadership) or who are well positioned to take the lead for phases, stages, or specific aspects of the operation would do so. For the higher commander, he/she would find his/her role as one of commander but also as a catalyst, working behind the scenes, motivating, guiding, and inspiring. He/she is important but not absolutely necessary, and can be replaced if required without issue.

For the development and planning of missions, all members within the force, even the lowliest Private, would have a voice at the table. This is a massive mental shift in perspectives for a cathedral entity. Using concepts such as “appreciative inquiry”, which emphasizes the positive and embraces all levels of the organization, each member of the force would be included in the process. Some inquiry sessions would even include



members of other Armed Forces, civilian contractors, governmental and private experts, and others (possibly civilians) brought in to add variety and diversity. This would in fact tap in to, and extend, the long tail of conflict expertise rather than utilizing small groups of military experts, providing diversity in experiences and ideas, generating greater innovation and ingenuity. In these planning sessions, rank and position is set aside in favour of experience, ideas, and innovation to avoid the pitfalls of groupthink and polarization. All levels feel engaged and part of the process and will contribute fruitfully.

One example of successful crowd sourcing using the long tail of expertise that has specific military applications can be found within an online forum called Humanitarian Tracker. Humanitarian Tracker encourages people from all over the world to share information on humanitarian issues and human rights abuses in their local communities.<sup>314</sup> By publishing stories, photos and other details, the average person now has a podium from which they can voice their experiences in a global manner. Syria Tracker, another online forum and an offshoot from Humanitarian Tracker, was created in 2011 in response to the crisis in Syria. Syria Tracker is a crowd mapping event that allows participants to download topographical maps of Syria in order to track humanitarian crimes perpetrated by the Syrian security forces, then upload them again for global sharing.<sup>315</sup> Participants share information, corroborate information, and confirm events. Tracking categories include killings, refugees, missing and detained, food and water tampering, and others. Syria Tracker, and other such platforms, are examples of the possibilities that open source methodologies provide for military forces.

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<sup>314</sup> Humanitarian Tracker. [http://www.humanitariantracker.org/#!about\\_us/csgz](http://www.humanitariantracker.org/#!about_us/csgz) (accessed 21 April 2013)

<sup>315</sup> Syria Tracker. <https://syriatracker.crowdmap.com/main> (accessed 21 April 2013)

In extending the long tail of military expertise, one aspect that military forces need to investigate is the potentiality of working with corporations to deliver long lasting effects on the ground.<sup>316</sup> During the rescue and recovery operation in New Orleans in the aftermath of Hurricane Katrina, large companies such as Walmart responded on their own, and outside of government control and coordination. Walmart was seen to provide necessities such as water and other vital commodities to the victims. Walmart was able to do this by leveraging their vast and comprehensive supply system.<sup>317</sup> Indeed, Walmart was able to react and respond faster and more effectively than the Federal Government agencies such as FEMA. Corporations such as Walmart, Target, Costco, etc, are capable of operating in a decentralized manner, accessing massive supply chain systems. Through their efforts, they are able to deploy much needed commodities into economic depressed areas. Entrepreneurs and other corporate entities are an untapped resource that can provide a unique capability to the mix of force employed in the new paradigm.

For this hybrid model to work for a military formation, the culture of the force would have to change significantly with the adoption of concepts that appear foreign to a highly structured organism. In order to increase agility in the force, the structure would need to function on the basis of greater trust with inspiration as the motivator, relying at times on emotional intelligence rather than analytical, and collaboration rather than direction. Commanders would have to accept not knowing at times, loosening the reins of control, operating in chaos, accepting the fog of war. Ambiguity would be embraced

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<sup>316</sup> Accepted that major corporations are now involved in the battlespace such as SNC Lavalan, this point is more about bringing more non-traditional businesses and corporations (Walmart, COSTCO as examples) to the fight. The CAF already utilizes Alternative Service Delivery by sharing service provision arrangements with a wide variety of government and non-governmental actors however these contractual arrangements facilitate silos of excellence rather than dispersion and decentralization.

<sup>317</sup> Robb, *Brave New War*, 91.

rather than shunned in order to foster creativity and innovation in the development and conduct of operations. Although there is still a requirement for discipline and order, each member of the community must be connected, networked, and feel they have a voice, working towards the goals of the collective.

Military tactics need to adjust to the modern paradigm. The modern industrial military utilizes out-of-date notions for executing operations. These forces still believe that to effectively stop an insurgency, key leaders need to be eliminated. This is the same strategy that would be employed in a conventional battle against another nation-state. Given that these organizations are leaderless and that a definitive command and control network does not exist as understood by modern military forces, this is outmoded thinking.

By Western counter insurgency methods, Abu Musab al-Zarqawi was an important leader in the Iraqi insurgency. Therefore, in June 2006, he was eliminated by coalition forces, yet this act did not stop the Iraqi insurgency.<sup>318</sup> Al-Zarqawi was easily replaced by Abu Hamza al-Muhajir who was in turn killed by the US in April 2010.<sup>319</sup> Abu Hamza has been replaced by Abu Dua as the leader of Al Qaeda in Iraq (AQI).<sup>320</sup> Osama bin Laden was eliminated May 2011 in a daring raid into Pakistan, yet Al Qaeda is still operating.

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<sup>318</sup> Robb, *Brave New War*, 112.

<sup>319</sup> Eben Kaplan, "Abu Hamza al-Muhajir, Zarqawi's Mysterious Successor (aka Abu Ayub al-Masri)". *Council on Foreign Relations*. 13 June 2006. <http://www.cfr.org/search/?Ntt=Abu+Hamza+al-Muhajir&submit.x=0&submit.y=0> (accessed 20 April 2013)

<sup>320</sup> United States of America. Under Secretary for Public Diplomacy and Public Affairs. Press Release. "Terrorist Designation of Ibrahim Awwad Ibrahim Ali al-Badri". Washington, DC., United States Department of State. 4 October 2011. <http://www.state.gov/r/pa/prs/ps/2011/10/174971.htm> (accessed 20 April 2013).

If the notion of the long tail of insurgency is correct, then targeting these leaders is an ineffective method for defeating the threat. AQI represents only one of up to 70 different organizations.<sup>321</sup> Therefore, for this strategy to be effective, all 70 leaders and every possible successor must be eliminated at the same time. For the sake of argument let us say that each group has between 5 – 7 possible successors available. That translates to 490 possible strikes. Given the amount of time (in years), effort, and resources that went into finding a killing Bin Laden, striking 490 targets is almost impossible. The nation-state cannot afford these tactics. The old ideas for the application of force must change.

There are four effects that can be achieved when military force is applied in the new paradigm and it is with these effects in mind, that forces should be structured, and how they should operate. They include mitigate, control, compel, and neutralize. These four effects can be applied at the strategic, operational, and tactical level, simultaneously or discretely. However, given the complex nature of today's battlespace, it can easily be argued that all four functions occur at each level, together, throughout conflict. What is also interesting about these four effects, are that they are also political effects that satisfy the requirements of obtaining political goals and objectives for most democratic nations and coalitions.

When conducting operations aimed at mitigation, a military force has the capacity to lessen the severity and decrease or reduce the impacts and effects of an action or series of actions. To mitigate in a conflict, would be to take actions that would alleviate or ameliorate such things as destruction, suffering, and dependence. For example, the Canadian Provincial Reconstruction Team (PRT) in Afghanistan functioned to mitigate

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<sup>321</sup> Robb, *Brave New War*, 113.

the effects of the insurgents, the poor economic and social state of affairs in the province of Kandahar, and to mitigate the impacts of coalition force activity that resulted in negative effects. The Operational Mentor Liaison Team's (OMLT) role included one of mitigation through the training of Afghan security forces to effectively take on the role of security within their country and defeat threats.

In exercising control, a force has the capability to exert a dominating influence over an area, a population, or a group. A force that controls, can contain, restrain, regulate, and prevent something from spreading, whether it be an idea, a people, or some other thing. At the strategic level, control can be an embargo or border closure. At the operational level, control could be affected through the establishment of a no-fly zone or demilitarized area.

When a military force is used to compel something or someone, it will force, drive, or constrain. A force tasked to compel will use the threat of force or force itself to compel a result. Deterrence and coercion are both critical aspects of compelling someone or something in order to achieve the desired effect. The 1999 bombing campaign of Kosovo and Serbia, in Operation ALLIED FORCE, is a typical example of a military force used to compel a change in behaviour.

In the act of neutralization, a military force will have the capability to render something or someone ineffective either through counteracting it, nullifying it, or removing it completely. Neutralization includes the use of force to effect destruction of the thing in question. In adopting these four effects, the force moves away from the old, unworkable paradigm characterized by the sequence peace-crisis-war-resolution.

In exploring this concept of hybrid organizations, it is prudent to review work on edge organizations. Davis S. Alberts argues that military operations are more complex with the blending of strategic, operational, and tactical levels.<sup>322</sup> This blended battlespace includes military and civil objectives, coalition operations, and increased complexity in personnel, resources, and technology. It is transitory in nature and, as such, impossible to acquire enough information to make sound decisions.<sup>323</sup> This complexity presents commanders with challenges that conventional thinking and analysis is not structured for.<sup>324</sup> Alberts believes that the typical constructs of C2 are not comprehensive enough to grasp all the nuances of this complexity.<sup>325</sup> More than ever, there is a requirement for agility to adapt to continuous changes evident in the environment, to shape the future and stop reacting to the past.<sup>326</sup>

Given that the current C2 constructs, definitions, structures, and systems are not adequate to handle the challenges of the modern and future battlespace, Albert's offers an alternative: the C2 approach space.<sup>327</sup> Current constructs were "designed and 'optimised' against 'endorsed' threats and for specific missions."<sup>328</sup> Today's battlespace is based upon a variety of complex and adaptive systems, systems without restraints, characterized by diversity and agility in thought and action.

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<sup>322</sup> David S. Alberts, "Agility, Focus, and Convergence: The Future of Command and Control." *The international C2 Journal*. The Command and Control Research Program. Vol 1, No 1 (2007). [http://www.dodccrp.org/html4/journal\\_main.html](http://www.dodccrp.org/html4/journal_main.html) (accessed 10 March 2013), 1-3.

<sup>323</sup> Anthony Alston, Patrick Beautement and Lorraine Dodd. "Implementing Edge Organizations: Exploiting Complexity." Paper Number 107 for 2005 10<sup>th</sup> International Command and Control research & Technology Symposium, (Maclean Virginia, QinetiQ, June 2005), 3.

<sup>324</sup> Okros, Verdun, and Chouinard, *The Meta-Organization...*, Section 2-2.

<sup>325</sup> Alberts, "Agility, Focus, and Convergence...", 17-26.

<sup>326</sup> Alston, Beautement and Dodd, "Implementing Edge Organizations...", 4.

<sup>327</sup> Alberts, "Agility, Focus, and Convergence...", 8.

<sup>328</sup> Alston, Beautement and Dodd, "Implementing Edge Organizations...", 4.

The C2 approach space is defined by three inter-related dimensions: the allocation of decision rights, the dissemination of information, and the pattern of interactions among participants.

Alberts envisions information technologies pushing the traditional concept of C2 towards an edge organization.<sup>329</sup> The edge is where the organization interacts with the operational environment. Alberts wants to empower the personnel at the edge of an organization through the C2 approach space.<sup>330</sup> In order to empower these people, they need expanded access to information technologies and they must be divested from unnecessary constraints and restraints. As an example, forces at the edge would be empowered through greater access to C2 technologies feeding information, capability, and expertise, while at the same time, freed from typical procedural constraints imposed to deconflict forces.

In the hybrid model, there must be harmonized command intent throughout the mission-space and dispersed decision-rights. The necessary resources must be applied across the battlespace to achieve the mission. The creation of rules and boundaries that direct targeting and engagement of objectives and establish controls required to manage the force are implemented. Through focus and convergence, power is moved closer towards the edge. Forces are able to self synchronize and self organize to meet complex challenges efficiently. Alberts C2 approach space concepts find utility in the new security paradigm and should be considered in new force structures and C2 relationships.<sup>331</sup>

In terms of expectations, the military chain of command would have to adopt new ideas and concepts, typically considered foreign. There are certain factors that effective

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<sup>329</sup> Alberts, "Agility, Focus, and Convergence...", 12.

<sup>330</sup> *Ibid.*, 25-26.

<sup>331</sup> Alberts, "Agility, Focus, and Convergence...", 26-27.

commanders need to demonstrate in order to shape the environment. These factors serve as a measure by which the institution can determine if the commander is pushing power to the edge and creating agility. These measures enable the institution to determine where a commander needs to put emphasize and effort to correct errors and achieve efficiency.

Commanders must ensure that there is a clear and consistent understanding of the command intent and strive to provide high quality information and shared situational awareness among the forces to achieve focus.<sup>332</sup> They must create information reach, enabling an increase in the utility of information exchange. Information reach aids in the avoidance of information overload and improves timeliness. This facilitates force collaboration and creates conditions for self-synchronization in time and space; resulting in convergence.<sup>333</sup>

Commanders are responsible to empower their forces and confirm competence at all levels. As an example, users of information are empowered through training and tools to know what relevant information looks like, where to locate it, and how enablers can be used to support the mission. Simply put, being at the right place and at the right time is a function of recognizing what that right time is, where that right place exists, and having the requisite authority to move oneself to that location.

A mark of a successful commander who has achieved these requirements is an established level of trust in the information, among subordinates, superiors, peers, and in the equipment. The commander will become comfortable working with limited information and confronting the frictions of war. The commander, through harmonized

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<sup>332</sup> Alston, Beutement and Dodd, "Implementing Edge Organizations...", 5.

<sup>333</sup> Okros, Verdun, and Chouinard, *The Meta-Organization...*, Section 2-3.



intent, will create a set of behavioural rules, resulting in desirable outcomes or behaviours.<sup>334</sup> This trust will lead to interactions between and among members of the force that will form the links in a network and collectively define its space. Essentially there will be wide-spread information sharing and predominance of peer-to-peer inter-relatedness and interoperability. The force will become more agile.

In order to change the culture of a cathedral, changing approaches to training are necessary. Military forces, as cathedral entities, tend to utilize very structured and formal training processes. This approach to training, learning by rote and focusing on content, taught by a single expert, reinforces the overall rigid structure of the organization.<sup>335</sup> In transitioning to meet the new paradigm in security and stability, how the force learns and trains is important.

The key to modern learning is not in what is learned but in how to learn. With unlimited access to knowledge and information it is impossible to learn everything.<sup>336</sup> Rather, the focus should be on how to learn so that military members can successfully seek out, consume, consider, and implement the knowledge at hand. This process includes equal parts formal learning, informal learning, and social learning, with a view to changing training from fixed events to a more collaborative, continuous, and connected development model.<sup>337</sup> By changing the process of training, members will change their behaviours, resulting in more collaboration, participation, connection, innovation, and ingenuity in achieving Force objectives.

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<sup>334</sup> Alston, Beutement and Dodd, "Implementing Edge Organizations...", 5.

<sup>335</sup> Pontefract, *Flat Army...*, 188.

<sup>336</sup> *Ibid.*, 188-189

<sup>337</sup> Pontefract, *Flat Army...*, 189-195.

Adopting new methods of learning, collaborating, and connecting is critical to the survival of the modern military forces. Because of the internet and open source methodologies, the younger generations today are more connected, more collaborative in nature, and capable of concentrating on multiple projects at the same time.<sup>338</sup> In fact, with the internet, more youth today spend an inordinate amount of time participating in, and creating, online content.<sup>339</sup> This means that as they reach the age of maturity, their behaviours are radically different than that of their parents. These youth are more used to working within a decentralized and collaborative fashion, and will find it difficult to adjust to a rigid, centralized structure. Without change, less and less youth will seek out careers in the military.

In terms of military force development and procurement, efforts at utilizing new trends are already beginning. The US Army is using the online challenge platform Challenge.gov to tap into the wisdom of the crowd by crowd sourcing “ideas that harness innovation and manufacturing intelligence breakthroughs.”<sup>340</sup> The US Department of Defense, in an attempt to crowd source information verification, has tendered a contract to build computer games that test software in order that it may alleviate bugs.<sup>341</sup> Most significantly, in 2011 the Defense Advanced Research Projects Agency (DARPA), which develops new technologies for the US military, launched a crowdsourcing competition for a new variant of Humvee (High Mobility Multipurpose Wheeled Vehicle (HMMWV)), the work-horse of the US Army. The contest was open to global

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<sup>338</sup> Jeff Howe, *Crowdsourcing: Why the Power of the Crowd is Driving the Future of Business*. (New York: Three Rivers Press, 2009), 261.

<sup>339</sup> *Ibid.*, 270.

<sup>340</sup> MTConnect Challenge. Challenge.gov. US General Services Administration. <http://challenge.gov/>

<sup>341</sup> T.C. Sotteck, US military to crowdsource software testing with games. The Verge. January 19, 2012. <http://www.theverge.com/2012/1/19/2719241/us-military-weapon-software-testing-games>.

participation from around the world with over 150 designs submitted. The winning design went from idea to working prototype in just fourteen weeks.<sup>342</sup> This is significant when one considers that typical military development and procurement takes 10 – 15 years.

For the modern military to remain competitive in the new security paradigm, it must undergo changes. By transitioning from a rigid cathedral structure to a hybrid entity, combining decentralization, some centralization, and tapping into new and emerging technologies and social and organization trends, armed forces will retain the capability and capacity to meet and defeat the new threats in a complex and nebulous battlespace. Remaining mired in an old paradigm with inaccurate expectations will result in costly endeavours without resolution.

## CONCLUSIONS

National governments will continue to exercise military options in the pursuit of defence and security. Modern military forces, such as the CAF, need to be able to operate within an exceedingly complex security paradigm, providing a diverse suite of capabilities. These capabilities must be able to respond to conflict across the spectrum of conflict. As state-on-state warfare is becoming less and less likely, a new paradigm in security has presented itself which modern forces must transition to meet. The old notions of state-on-state warfare need to be updated to represent this new paradigm.

The CAF, as currently structured and postured, is a closed system which seeks solutions in technology rather than organizational change. It is an organization that is slow to learn and adapt to new ideas and new threats. Most importantly it is not agile.

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<sup>342</sup> IdeaConnection. <http://www.ideaconnection.com/open-innovation-success/The-World-s-First-Crowdsourced-Military-Vehicle-00305.html>.

As the global security environment changes rapidly adversaries, and potential adversaries, adapt quickly, absorbing new trends and ideas, leaving the CAF behind as it clings to outmoded structures and concepts.

Modern military forces, such as the CF, should accept that in a contest of wills, the arena has changed. In order to remain relevant and effective, they should consider adapting notions found with open source philosophies and in other emerging trends in order to develop an operating concept that permits them to engage adversaries at an advantage. Modern military forces need to leave the safety of the cathedral and enter the bazaar as a competitive and agile participant. If the CAF fails to keep pace with the nations enemies, then its' relevance should be reviewed.

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