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INTRODUCTION

The Islamic State of Iraq and the Levant, or ISIL as they are known, must be eradicated. The group has become a far greater problem than any Western defence analysts could have predicted. Their brutal battlefield tactics, global terror attacks such as the ones in France and Belgium in the spring of 2016, abundance of financial resources, and exceptional use of social media to recruit and spread their ideology have earned them a spot at the top of the list of global security concerns. Simply stating they need to be eradicated is the easy part. Determining how to eradicate them has proven to be a far more challenging task, one that has thus far been unachievable.

Defence experts and planners often look to Clausewitz and his concept of Centre of Gravity (COG) in hopes of identifying a single enemy capability or strength towards which Western nations can focus efforts and cause the eventual defeat of the adversary. This paper will argue however, that ISIL is a complex adaptive system without any single point of failure towards which coalition countries can focus efforts and a COG analysis of ISIL is therefore irrelevant. The paper will further posit that in order to defeat ISIL Western nations must overwhelm the group by simultaneously attacking its critical vulnerabilities as well as its strengths.

The paper is divided into three sections. The first section argues that the COG approach to defeating an adversary is flawed and often leads to a fruitless exercise by commanders and staff of identifying a COG that is either irrelevant or impossible to identify. The second section argues that ISIL is a complex adaptive system with no COG to be identified and therefore a COG analysis of ISIL is irrelevant. The third section argues that in order to defeat ISIL, instead of

focusing on a single vulnerability, Western nations must overwhelm the organization by simultaneously attacking its weaknesses, or critical vulnerabilities, as well as its strengths.

THE SHORTFALLS OF COG ANALYSIS

Before demonstrating why it is that a COG analysis is irrelevant for ISIL, it is important to first of all describe what is meant by COG and highlight some of its shortfalls as an approach to defeating an adversary.

Although there is debate over what Clausewitz really meant by COG, United States Marine Corps professor of strategic studies, Dr. Joseph Strange defines it as the “physical or moral entities that are the primary components of physical or moral strength, power and resistance.”¹ He further states that the COG doesn’t just contribute to strength, it is the strength.² Since the COG concept has been introduced as a key planning factor, accurate identification of the COG has been perceived as being “crucial in the successful attainment of desired objectives.”³ For military planners, the COG concept fits very nicely into the concept of manoeuvre warfare. Unlike attrition warfare, manoeuvre warfare aims to focus strengths against the adversary’s vulnerabilities and out-manoeuver him through speed and movement. Identification of the COG and the subsequent analysis of what Strange calls critical capabilities and critical vulnerabilities⁴ theoretically provides manoeuvrists with the critical target set towards which they can focus their resources and defeat the enemy by attacking its COG. Hypothetically the COG analysis is extremely beneficial and seems to offer a very straight-

¹ Joe Strange and Richard Iron, “Understanding Centers of Gravity and Critical Vulnerabilities”: 7, www.au.af.mil/au/awc/awcgate/usmc/cog2.pdf.

² *Ibid.*

³ Daniel J Smith, Kelley Jeter and Odin Westgaard, “Three Approaches to Center of Gravity Analysis: The Islamic State of Iraq and the Lavant”, *Joint Force Quarterly*, 3rd Quarter, 2015: 129.

⁴ Joe Strange and Richard Iron, “Understanding Centers of Gravity and Critical Vulnerabilities”: 1, www.au.af.mil/au/awc/awcgate/usmc/cog2.pdf.

forward, almost scientific method of defeating an adversary. In practice however, it has proven to be far more difficult.

U.S. Army Colonel Robert Dixon is critical of the COG approach and suggests that the concept is irrelevant in the modern era. According to Dixon, “It is past the time for U.S. doctrine to omit the term [Centre of Gravity] from its lexicon.”⁵ He asserts that the doctrinal term was once relevant but is now “an artifact of a bygone era, and has done more damage than good in the modern era.”⁶ Dixon argues against the theory of COG stating that if the COG is not accurately identified it “leads to mission failure and unnecessary loss of life.”⁷ An excellent example of this predicament is the Allied bombing strategy of World War II.

Those involved in the bombing campaign at the highest levels were divided into two schools of thought. Some, such as Sir Arthur Harris of Bomber Command saw area-bombing of German cities as the most effective use of the bombing effort. He saw the cities, and more specifically the morale of the citizens within them, as the German COG. According to world renowned scholar Tami Davis Biddle, “Harris’ goal was destruction by the square yard: if he could destroy vast stretches of Germany’s largest cities, he would bring the war to a close.”⁸ Bomber Command’s analysis of Germany’s COG however, was wrong. The area, or morale bombing campaign had little success in slowing the German war machine, but highlighting Dixon’s stance, it came at the cost of many civilian and allied lives. The second school of thought was selective, or precision bombing.

⁵ Robert Dixon, “Clausewitz, Center of Gravity, and the Confusion of a Generation of Planners”, *Small Wars Journal*, 20 Oct 2015. <http://smallwarsjournal.com/jrnl/art/clausewitz-center-of-gravity-and-the-confueion-of-a-generation-of-planners>.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ Tami Davis Biddle, “Bombing by the Square Yard: Sir Arthur Harris at War, 1942-1945”, *The International History Review*, 21:3, 629.

Selective bombing advocates, such as British Air Chief Marshall Arthur W. Tedder and Major General Carl A. Spaatz, the senior American air commander in Europe, identified specific physical as opposed to moral Centres of Gravity. Tedder saw the German rail system as the COG⁹ whereas Spaatz assessed it to be Germany's industrial and economic systems.¹⁰ Germany's COG, although never accurately identified, was highly debated during the bombing campaign and still is today. As Dixon states, "COG analysis is clearly not as scientific as the term Center of Gravity might suggest."¹¹ The strategic bombing example, and the fact that Germany's World War II COG is still debated today, highlights the fact that even with the benefit of hindsight, it can be extremely difficult to accurately pinpoint an adversary's COG.

Due to the inherent difficulty in identifying a single adversary COG, planners often identify several COGs at the tactical, operational, and strategic levels. As Dixon explains, "while this level of detail is important to understanding the context of the operation, there is nothing central or gravitational about this kind of analysis, and the outcome does little to help commanders focus all force as Clausewitz intended."¹² Modern planners try hard to make the COG concept work but it seems to be a fruitless effort which ends up in confusion caused by the development of multiple COGs, which contradicts the concept itself, and wasted staff planning time.

Advocates of the COG concept however, will provide the counter argument that failure to identify the COG is not a problem with the concept itself, but an inability of planners to accurately select a COG. Just because it's not easy doesn't mean the concept is flawed. History however, shows us that identification of an adversaries COG is near impossible, sometimes even

⁹ Phillip S. Meilinger, "A History of Effects-Based Air Operations", *The Journal of Military History*, Jan 2007, 71, 151.

¹⁰ *Ibid.*

¹¹ Robert Dixon, "Clausewitz, Center of Gravity, and the Confusion of a Generation of Planners".

¹² *Ibid.*

with the benefit of hindsight. Even if it is accurately identified, it often changes during a given campaign and planners are left chasing another COG.

The concept of COG may very well have been relevant in Clausewitz's day. The complexity of modern societies and warfare however, has made it irrelevant today and no other adversary highlights the irrelevance of the COG approach as clearly as ISIL.

ISIL; A COMPLEX ADAPTIVE SYSTEM

Due to its complexity and ability to adapt, ISIL presents the West with a “wicked problem”. Wicked problems are not only difficult to understand, but even more difficult or even impossible to solve. In attempting to solve the ISIL problem and take a step in the right direction towards defeating this adversary, it is critical to first of all understand the organization. As historian Michael Petranick indicates, “Understanding the enemy is the first and foremost endeavor that must be undertaken to address them on the battlefield.”¹³ But how do we understand ISIL if they are such a complex organization? First of all we must take a different approach to understanding ISIL than we would for most other organizations. We must assess them, not as a hierarchical organization such as Western militaries, but as a complex adaptive system. If ISIL is considered a complex adaptive system it becomes evident that the COG concept is not applicable as a means of highlighting a single vital enemy capability against which we can apply all strengths and resources. But what is a complex adaptive system? And why should ISIL be considered as such?

As defined by Dr. Serena Chan, complex adaptive systems are “dynamic systems able to adapt in and evolve with a changing environment. It is important to realize that there is no separation between a system and its environment in the idea that a system always adapts to a

¹³ Michael Petranick, “On ISIS: The Reality of the 21st Century Battlefield”, *Small Wars Journals*, 18 April, 2016, <http://smallwarsjournal.com/jrnl/art/on-isis-the-reality-of-the-21st-century-battlefield>.

changing environment.”¹⁴ U.S. Army Lieutenant-Colonel Aaron Bazin further explains that “a complex adaptive system has no central control mechanism pulling the strings, and a person cannot hope to understand it as simply a sum of its parts. A complex adaptive system has components that are interdependent but connected.”¹⁵

The first characteristic - not having a central control mechanism pulling the strings - is very applicable in the case of ISIL. Petranick states that within ISIL “command and control are compartmentalized in ‘cells’ which involves a prescribed number of provinces. The Islamic State is not stagnant in its prosecution of battlefield environments. Changing needs in each province resulted in changed tactics.”¹⁶ ISIL’s ability to adapt and change in relation to changes in the battlefield environment along with their complex command and control structure, or lack thereof, highlight the challenges with identifying a COG for the organization. How do you identify and target a COG when the organization is structured more like a spider-web than the hierarchical style of most organizations where it is theoretically much easier to identify the section of the organization that, if destroyed, will lead to the collapse of the entire organization. Further complicating the issue is the fact the even if you did attempt to pinpoint a COG, as soon as you change the environment of the complex system it will adapt and change and what you perceived to be the COG is no longer it.

ISIL’s evolution and how it came to be exemplifies its adaptability. ISIL was not always ISIL. The organization was originally a cell of al-Qaeda known as AQI, or al-Qaeda in Iraq. But the organization had far more aggressive and ambitious goals than al-Qaeda and its headquarters in Pakistan and as such was ousted from al-Qaeda and morphed into the Islamic State of Iraq, or

¹⁴ Serena Chan, “Complex Adaptive Systems”, *ESD.83 Research Seminar in Engineering Systems*, Nov 2001, 2.

¹⁵ Aaron Bazin, “Defeating ISIS and Their Complex Way of War”, *Small Wars Journal*, Sept 2014, <http://smallwarsjournal.com/jrnl/art/defeating-isis-and-their-complex-way-of-war>.

¹⁶ Michael Petranick, “On ISIS: The Reality of the 21st Century Battlefield”, *Small Wars Journals*.

ISI, and eventually ISIL.¹⁷ The organization proved extremely adaptive and resilient after being expelled from al-Qaeda. No longer funded by other terror organizations or Arab states, ISIL, developed its own methods of financial prosperity by securing “two primary revenue streams: oil sales from ISIS-controlled oil fields in Syria and sales of antiques from looted historical sites.”¹⁸ As such, it has “established a vast and lucrative financial portfolio to support both civil and military operations.”¹⁹ Once again, the organizations adaptability provides it with resilience to attack on any single source of strength.

Whether by coincidence or intentionally, ISIL is a complex adaptive system. As Dixon suggests, when analysing a COG of such a dynamic system, “It would make little sense to call it a ‘center’ of gravity as it would constantly move and change shape as the system evolves and operates in the real world.”²⁰ Whenever Western nations attempt to defeat ISIL by targeting any one specific component or capability of the organization it does nothing more than simply change the environment in which the organization exists. Unfortunately for advocates of the COG concept, ISIL has proven more than capable of adapting to the changes in its environment. Its lack of a single source of strength and its ability to change and adapt as we affect its environment demonstrate that COG is irrelevant as a concept or method of defeating ISIL.

Despite ISIL’s complexity and adaptability, some still believe that it is possible, through an air campaign, to defeat ISIL by destroying its ranks and leadership nodes, claiming their combat forces are their COG. Unfortunately it’s not that simple and “like other similar threats we have faced, we can continue to kill members of [ISIL], more recruits will fill their ranks, and

¹⁷ Jay Sekulow, *Rise of ISIS: A threat We Can't Ignore* (New York: Howard Books, 2014), 16.

¹⁸ *Ibid.*, 24.

¹⁹ Michael Petranick, “On ISIS: The Reality of the 21st Century Battlefield”, *Small Wars Journals*.

²⁰ Robert Dixon, “Clausewitz, Center of Gravity, and the Confusion of a Generation of Planners”.

new branches will form.”²¹ COG just isn’t relevant for complex adaptive systems. If the COG concept is irrelevant and will not lead to success against ISIL, how can they be defeated?

DEFEATING ISIL ON ALL FRONTS

We will degrade, and ultimately destroy ISIL through a comprehensive and sustained counterterrorism strategy

- U.S. President Barrack Obama, Speech : On ISIL, Our objective is Clear

The defeat of ISIL will require the destruction of the entire complex system it has become. This cannot be achieved by attacking any single component or capability. Instead, it requires a truly comprehensive approach. ISIL must be completely overwhelmed on all fronts in order to deny it the time and space to adapt and morph as we affect its environment. Trying to determine which strand of a spider-web will cause it to collapse if removed will be difficult, if not impossible. Removing the entire web and denying the possibility of it being restructured or adapted will ensure its destruction.

Overwhelming force must be applied against all fronts and the intervention must be “early and often... [but] need not be solely military in nature, and should include all available instruments of national power balanced appropriately.”²² U.S. General John Allen, who served as President Obama’s special envoy to lead the international coalition against ISIL, developed a strategy which very much resembles the idea of attacking on all fronts in order to defeat the complexity and adaptive nature of ISIL. Allen’s strategy was indeed comprehensive and focused on many components and capabilities of the organization in lieu of trying to identify and attack any central COG or particular vulnerability. The comprehensive approach needs to “leverage not

²¹ Charles Barham, “Stability Operations: Current Options for Engaging IS”, *Small Wars Journal*, 6 April, 2016. <http://smallwarsjournal.com/jrnl/art/stability-operations-current-options-for-engaging-is>.

²² Aaron Bazin, “Defeating ISIS and Their Complex Way of War”, <http://smallwarsjournal.com/jrnl/art/defeating-isis-and-their-complex-way-of-war>.

only hard power options but also stability and civil-military operations – or soft power.”²³

Attacking the entire system of ISIL will be difficult, resource intensive, and will likely take years to accomplish. With so much emphasis by Western military planners placed on the concept of COG over the past several decades, it almost seems counterintuitive to not focus efforts on a particular adversary component or capability. It’s critical however, that we remember that no aspect of ISIL is any more important to its success than any other. Adaptation and complexity gives it its strength. But if we have to attack the entire system, what does that include?

Attacking and defeating the ISIL system must include attacking and defeating some of the following capabilities and weaknesses just to name a few. We must continue to strike ISIL through the ongoing air campaign in order to disrupt and deny freedom of movement and slowly degrade their leadership and combat capability, understanding however that without attacking the entire system, these leaders will be replaced and more fighters will fill the ranks. We must continue to train local ground forces in order to once again degrade ISIL’s combat ability and deny their freedom of movement. We must overwhelm them in the cyber domain and defeat their messaging through aggressive information operations and winning the narrative. This will help slow the pilgrimage of foreign fighters and will eventually degrade their combat ability and will help contain their ideology. Their financial revenue must be cut off. This must include disrupting ISIL’s sale of oil. To assist in this effort, diplomatic pressure must be applied to those purchasing the oil. These are just a few components of the ISIL system that must be simultaneously attacked and defeated. Attacking on all fronts and completely overwhelming the entire system will deny ISIL the freedom of movement and time to adapt to its changing environment and will ultimately lead to its defeat.

CONCLUSION

²³ Charles Barham, “Stability Operations: Current Options for Engaging IS”.

ISIL poses a serious security threat to Western countries. The group has proven resilient and determined in accomplishing its goal of establishing and spreading its Caliphate. Its ideology is quickly spread around the world through social media, garnering sympathetic support from disenfranchised young men and women who more often than not do not grasp the realities of what they are getting involved in. ISIL cannot be ignored. They must be defeated. It is critical that strategic and operational level military and civil planners refrain from attempting to defeat ISIL by attacking any perceived Centre of Gravity. History has shown the difficulty of identifying any single adversary COG which if defeated or attacked, will lead to the defeat of the enemy. In theory the concept is extremely efficient and simple. In practice this is not the case. The challenges of understanding the complexity and adaptability of a terrorist organization such as ISIL, renders the COG concept irrelevant. In order to defeat ISIL, it must be attacked and defeated on all fronts. Pressure must be applied early and often through the use of all aspects of national power. The entire system must be eradicated and denied the ability to adapt. We cannot afford to focus on what we may perceive as an ISIL COG. As soon as we attack it, the system will change and we will no longer understand it. We will be chasing a changing COG which doesn't even exist as we understand it.

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