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# Editorial

We wrap up 2020 for Vol 46, No. 2 with a compilation of essays from various sources—students from our local Command and Staff Course (CSC) of the Goh Keng Swee Command and Staff College (GKS CSC) as well as from an overseas CSC, the United States Air Command and Staff College. We are also featuring an ad hoc essay submitted about Swarm Unmanned Aerial Vehicles (UAV). In addition, there is also an essay from a Senior Analyst from the S. Rajaratnam School of International Studies (RSIS) and another from a Staff Officer of the Ministry of Education. Both authors had pursued a Master's Programme at RSIS.

The first of the essays, 'Air, Land and Maritime Strategy – Which is More Critical in Warfare?' is written by MAJ Sean Paul Magness. According to MAJ Magness, land power has always been regarded as the dominant form of military power as the main objective of territorial states is to conquer and control land. And, land power has been the main military instrument for achieving this aim. In this essay, MAJ Magness explores the importance of not just land strategies but air and maritime strategies in a battlefield, concluding that the latter 2 can be impactful as well. He feels that both air and maritime strategies have proven decisive, giving examples like the 1999 NATO campaign in the Yugoslavia. War. MAJ Magness presents his views in three parts. In the first part, he explains the concept of strategy and the importance of understanding the types of political objectives which a military force can fulfil. In the second part, he examines how force utility and a nation's strategic culture shapes its military strategy and predisposes a nation into favouring particular domains of military strategy. The third part discusses the case study of the Pacific War during World War II and the 1999 NATO campaign in Yugoslavia (*Operation Allied Force*) to demonstrate how force utility and strategic culture resulted in their respective strategies being assessed either independently from land strategy, or in the case of Yugoslavia, without any land strategy at all. Furthermore, the Pacific War has been regarded as the only great-power war in modern history in which the outcome was not determined by land power alone, and one in which air and maritime power played more than an auxiliary role. On the contrary, OAF is often held up as *the* example of the effectiveness of independent airpower.

The next essay, 'What are the Past, Present and Future Challenges to Singapore's National Security?' is

written by MAJ Alex Phua Thong Teck. In this essay, MAJ Phua discusses Singapore's operating environment and examines how her national security strategies have adapted to challenges to stay relevant and effective in defending her national interests. He briefly outlines Singapore's national interests, based on her geography and history. He then frames her national security strategies with a grand strategy framework of Defence and Security, Nation Building, and National Development, to crystallise the discussion and explore pertinent challenges from independence, to the future. MAJ Phua feels that while Singapore's national interests remain constant, the proposed national security strategies can still be used to frame and respond to challenges in new operating environments.

MAJ Jeffrey Ng Zhaohong who attended the United States Air Command and Staff College, wrote the next essay, 'The Persistence of Violence in the Cyber Age.' According to MAJ Ng, with the advance of technology, cyber space has become the new battleground for war. It has provided huge opportunities for many countries to further their political agendas without resorting to violent conflicts. In fact, similar to the threat of nuclear destruction, cyber attacks' threat of widespread devastation can deter and compel against violent escalations. Furthermore, cyber space's high cost-effectiveness and difficulty in attribution provide a viable non-violent avenue to achieve political gains. Besides manipulating rational calculations, cyber information operations can subvert people's passions and soften the psychological battlefield, thereby reducing the violence involved in achieving one's political goals. However, MAJ Ng highlights that historical examples have shown that in a clash for survival and critical interests, man will exhaust all means, including physical violence and destruction, to exploit vulnerabilities in all dimensions to preserve his interests. He concludes that violence will continue to persist as part of the nature of war.

In the following essay, 'How Singapore and the Singapore Armed Forces Can Get Ready for the Era of Swarm UAVs', CPT Daryn Koh Wei Ren believes that Swarm Unmanned Aerial Vehicles (UAVs) have the potential to pose a real threat when used for malicious purposes, citing various examples to prove the capabilities of such technology. He feels that Singapore may be susceptible to attacks from Swarm UAVs due to its small geographical size. He also highlights that swarm

UAVs can continue with the mission even with the loss of a sizeable portion of its members as it is possible for a large enough swarm to overwhelm a small country's air defence system. In this essay, CPT Koh explores possible solutions to Swarm UAVs, namely, Deterring Rogue Drone Operators and Disrupting Swarm UAVs. He concludes that there is no one size fit all solution to the threat of swarm UAVs and highlights that continuous efforts and resources have to be committed in order to deal with such a threat.

Mr Ivan Ng Yan Chao wrote the essay, 'Are the Goals of Belligerents in 'New Wars' Really Different from the Goals of Earlier Wars?' 'New wars' is a term advanced by British academic Mary Kaldor to characterise warfare in the post-Cold war era.<sup>1</sup> According to Mr Ng, it had been claimed that in 'New Wars', the struggle is not about geopolitics but about identity politics instead. Mr Ng aims to analyse this claim and argue that while it is true that identity politics plays a greater role in New Wars compared to wars in the past, the claim is problematic for two reasons. Firstly, even in the case of New Wars, geopolitics remains an ever-present consideration and has not simply been supplanted by identity politics. Secondly, wars in the past were also arguably driven by identity politics, thus, identity politics is not unique to New Wars. In this essay, Mr Ng proceeds to first define and

discuss the key terms discussed. He then considers how identity politics is a prominent feature in the goals of belligerents in New Wars today. He concludes that both identity politics and geopolitics are important components of New Wars, and indeed, Old Wars as well.

The final essay in this compilation is entitled, 'The Importance of Context for Military History & Education' and is written by Mr Ian Li. According to Mr Li, military history as a field has significant benefits to military education but, it should be properly contextualised. He feels that for there to be any meaningful interpretation, accounts must be critically analysed to understand the perspectives in which they have been written and the assumptions that inherently underlie them, particularly those that arise from the particular piece being written for the specific purpose of nation-building or education. Ideally, a healthy variety of perspectives are used in conjunction with one another so that the reader is presented with a complete picture of the event with which to then form his own interpretations and conclusions.

POINTER would like to wish all our readers A Merry Christmas and A Happy New Year! Happy Holidays!

**The POINTER Editorial Team**

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<sup>1</sup> [https://en.wikipedia.org/wiki/New\\_wars](https://en.wikipedia.org/wiki/New_wars)

# LAND, AIR AND MARITIME STRATEGY – WHICH IS MORE DECISIVE IN WARFARE?

By MAJ Sean Paul Magness

## ABSTRACT

Land power has been regarded as the dominant form of military power since the main objective of territorial states is to conquer and control land. And, land power has been the main military instrument for achieving this aim. In this essay, the author explores the importance of not just land strategies but air and maritime strategies in a battlefield, concluding that the latter 2 can be impactful as well. The author feels that both air and maritime strategies have proven decisive giving examples like the 1999 North Atlantic Treaty Organisation (NATO) campaign in the Yugoslavia. War. In this essay, the author presents his views in three parts. In the first part he explains the concept of strategy and the importance of understanding the types of political objectives which military force can fulfil. In the second part, he examines how force utility and a nation's strategic culture shapes its military strategy and predisposes a nation into favouring particular domains of military strategy. The third part discusses the case study of the Pacific War during World War II (WWII) and the 1999 NATO campaign in Yugoslavia, *Operation Allied Force* (OAF), to demonstrate how force utility and strategic culture resulted in their respective strategies being assessed either independently from land strategy or, in the case of Yugoslavia, without any land strategy at all. Furthermore, the Pacific War has been regarded as the only great-power war in modern history in which the outcome was not determined by land power alone, and one in which air and maritime power played more than an auxiliary role. On the contrary, OAF is often held up as the example of the effectiveness of independent airpower.

Keywords: *Strategy, Objective, Interest, Power, Environment*

## INTRODUCTION

Land power is regarded as the dominant form of military power in the modern age.<sup>1</sup> This is because the supreme political objective in a world of territorial states is to conquer and control land.<sup>2</sup> Land power has been the main military instrument for achieving this aim, a fact borne out by both geography and history. Geographically, although most of the world comprises of water, almost all of the world's population lives on land. Agriculture and the majority of commodities (minerals, metals, wood, etc.) are harvested on land. Historically, almost all of the great power wars fought over the past two centuries were decided by a clash of armies.<sup>3</sup> But does that mean that air and maritime strategies must always be assessed and formulated in terms of their impact on the land strategy? Or, can air and maritime strategies be formulated without such an assessment?

This essay will argue that air and maritime strategies do not always need to be assessed and formulated in terms of their impact on land strategy. Both air and maritime strategies have proven decisive with minimal assessment on their impact on land strategy, notably in the 1999 NATO campaign in Yugoslavia and the Pacific War during WWII. An understanding of the key factors that influence and constitute strategy, regardless of the domain, will allow planners to formulate a strategy which can best attain the political objectives of a war. Therefore, despite the undoubted primacy of the land domain, there have been instances where air and maritime strategies were either assessed and formulated independently from land strategy or with the absence of a land strategy altogether.

This essay will analyse this assertion in three parts. The first part explains the concept of strategy and

the importance of understanding the types of political objectives which military forces can fulfil. The second will examine how force utility and a nation's strategic culture shapes its military strategy and predisposes a nation into favouring particular domains of military strategy. The third will use the case study of the 1999 NATO campaign in Yugoslavia (OAF) and the Pacific War during WWII to demonstrate how force utility and strategic culture resulted in their respective strategies being assessed either independently from the land strategy, or in the case of Yugoslavia, without any land strategy at all. The Pacific War is regarded as the only great-power war in modern history in which the outcome was not determined by land power alone, and one in which air and maritime power played more than an auxiliary role.<sup>4</sup> On the contrary, OAF is often held up as the example of the effectiveness of independent airpower.<sup>5</sup>

## FACTORS SHAPING MILITARY STRATEGY

Before analysing the campaigns mentioned above, it is first necessary to understand military strategy and the factors that constitute it. Strategy has been defined as 'the overall plan for utilising the capacity for armed coercion—in conjunction with economic, diplomatic and psychological instruments of power—to support foreign policy most effectively by overt, covert and tacit means.'<sup>6</sup> This definition is sufficient for explaining strategy at the national level. However, a military-specific definition is also required. Basil Lidell Hart provides this by defining strategy as 'the

art of distributing and applying military means to fulfil the ends of policy.'<sup>7</sup> Both of these definitions are relevant to this essay.

Central to both definitions is the notion of strategy having to fulfil the needs of policy. Therefore, the 'ingredients' of strategy must also consider policy needs. These ingredients are expressed as a combination of ends, ways and means.<sup>8</sup> At the highest level, ends are national interests, which are a nation's wants, needs or concerns.<sup>9</sup> National interests are then translated into political objectives which are the basis for the national or 'grand strategy.' Grand strategy is the development, integration and allocation of all national resources towards the attainment of political objectives.<sup>10</sup>

Grand strategy encompasses supporting strategies in the realms of Diplomacy, Information, Military and Economy (DIME). This understanding is important because military strategy is never conceptualised in isolation. It influences and is influenced by all the other supporting strategies. *Figure 1* depicts the relationship between the political objectives and its supporting strategies.

This framework provides the context for the formulation of military strategy. Military strategy is also a combination of ends, ways and means. In this context, ends are the military objectives, the ways are military strategic concepts and the means are expressed as military resources.<sup>11</sup> Military strategy is also subjected to two separate sets of factors. On one hand there is

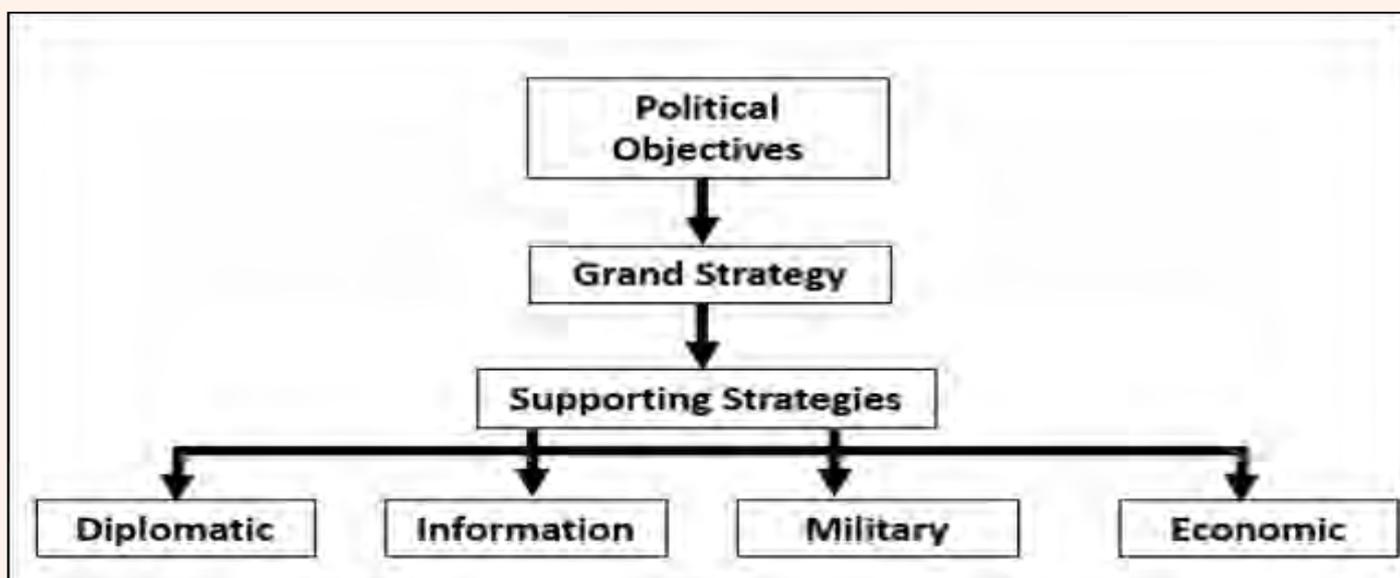


Figure 1: Relationship of Political Objectives to Supporting Strategies.<sup>12</sup>

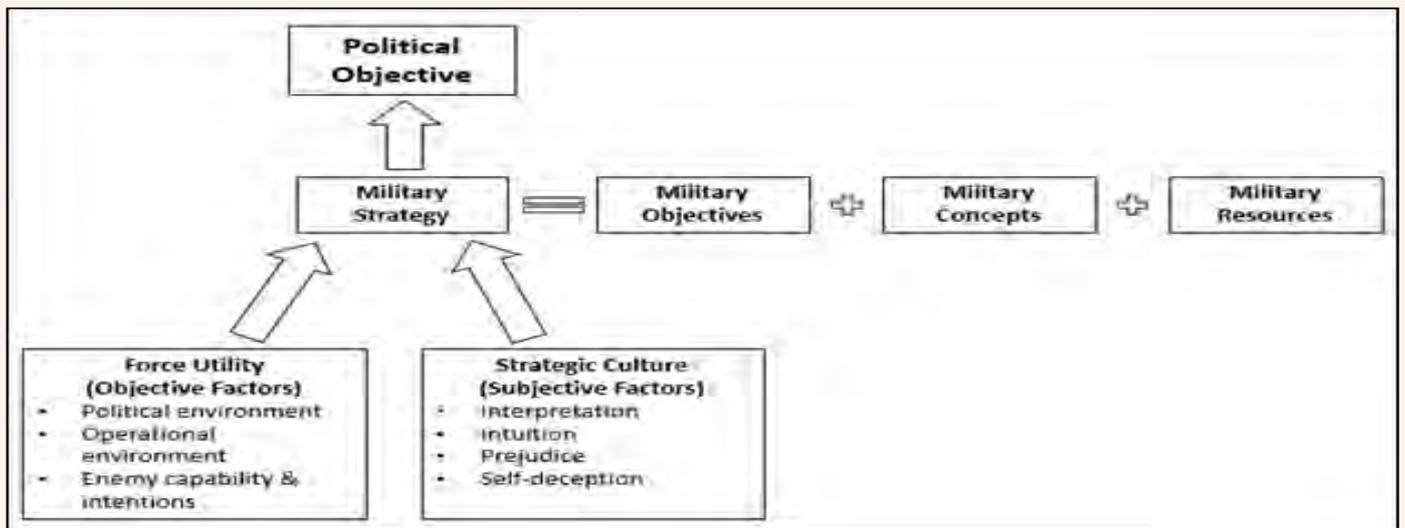


Figure 2: Factors Influencing Military Strategy.

force utility which is defined as ‘the usefulness of force as a tool of policy in compelling the enemy to do our will.’<sup>13</sup> Force utility comprises objective factors such as the political and operational environment, enemy capabilities and intentions. On the other hand is strategic culture, which is defined as ‘the set of attitudes and beliefs held within a military establishment concerning the political objective of war and the most effective strategy or operational method to achieve it.’<sup>14</sup> Strategic culture provides a subjective guide to the planner’s decision-making as it is shaped by the attitudes and beliefs of the military leadership. The relationship between these factors is shown in Figure 2.

## POLITICAL OBJECTIVES

All strategies serve a political end. Therefore, a clear understanding of the political objectives to be attained is essential to strategic formulation. As highlighted earlier, the military is but one of the levers

of power available to a state and in the modern day is usually only used when all other options have been exhausted. Political objectives which require a military solution can be broadly classified into limited and unlimited objectives. (See Figure 3)

As shown, both types of objectives have very different desired end-states. An unlimited political objective entails the elimination of the opponent as a political entity while a limited political objective allows for the enemy leadership to survive and retain power.

**Strategic culture provides a subjective guide to the planner’s decision-making as it is shaped by the attitudes and beliefs of the military leadership.**

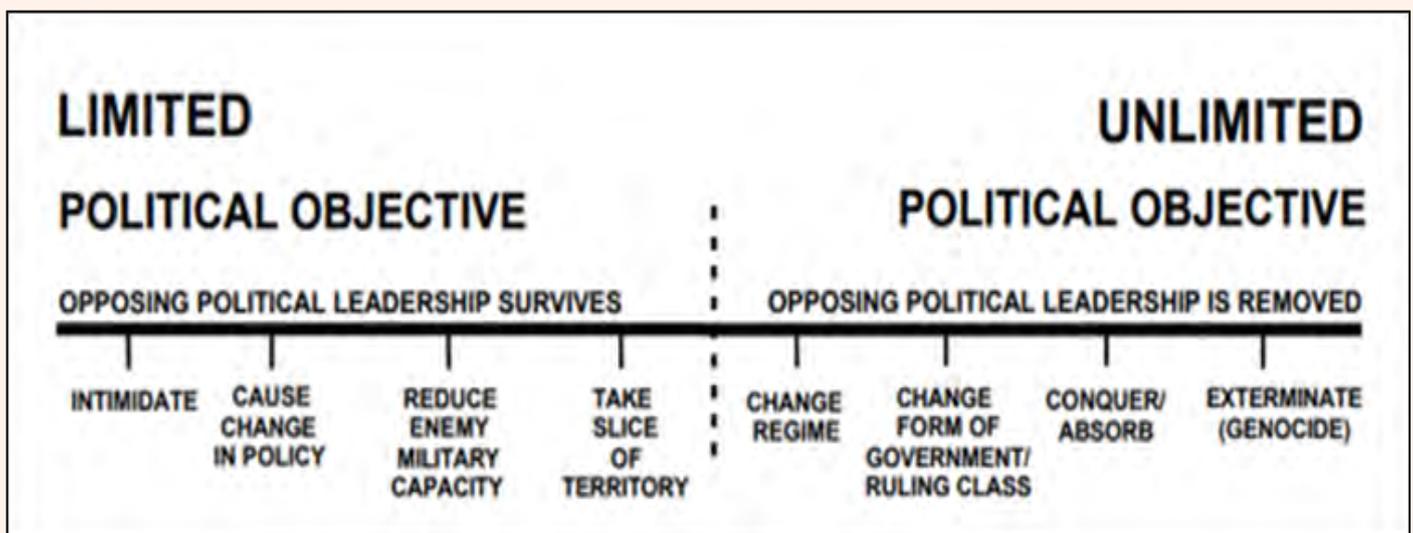


Figure 3: Limited vs Unlimited Political Objectives.<sup>15</sup>

## UNDERSTANDING FORCE UTILITY

Armed with this understanding of the political objectives, a strategic planner can then decide which domains of military strategy, and in what combination, can best fulfil these objectives. This is the essential foundation of Clausewitz's notion that 'War is a continuation of policy by other means.'<sup>16</sup> Military force has often been applied without achieving the desired political end-state despite attaining battlefield success.<sup>17</sup> This is most evident in the recent campaigns in Iraq and Afghanistan where the conflicts have dragged on for more than a decade despite the success of individual military engagements.<sup>18</sup> In these examples, the forces employed lacked utility.

To ensure this match between politico-military objectives, a clear comprehension of the objective circumstances affecting military strategy is first required. Whether military force serves to achieve the political objectives, which are the true measure of its utility, depends on the choice of military strategy. Military strategy is affected by the broader political and operational environment, as well as enemy capability and intentions. Therefore, in order for force to be employed with any utility, a clear understanding of the context in which it is being employed is required, a clear definition of the result to be achieved, an identification of the target to which the force is being applied, and an understanding of the nature of the force being applied.<sup>19</sup>

To achieve maximum utility, the first objective factor that must be considered is the political environment. This environment is distinct from the political objectives. It encompasses the political support for the employment of force, both domestic support from a state's population as well as support from the international community. As the war between the United States (US) and Vietnam in 1965 clearly showed, a failure to consider the domestic aspect of the political environment can easily erode the utility of the employed force.<sup>20</sup>

The second factor is the operational environment which comprises a combination of conditions, circumstances and influences which determine the use of military force.<sup>21</sup> Terrain and weather are the key

aspects of the operational environment. They affect the type of military forces to be employed, the equipment to be used and the tempo of operations. Understanding the effects of these operational variables acting upon both the enemy as well as our own forces are fundamental to the development of military strategies.

**No effective military strategy can be conceived without understanding the influence, capabilities and intentions of the enemy.**

The last factor is the enemy. No effective military strategy can be conceived without understanding the influence, capabilities and intentions of the enemy. The reason is aptly explained by Clausewitz who asserted that 'in war, will is directed at an animate object who reacts.'<sup>22</sup> This 'animate object' is the enemy, who's planning, preparations, operational and strategic choices during the conduct of war affect our own strategic requirements. The oppositional nature of the enemy thus cause the strategic planner to be confronted by two simultaneous, potentially competing goals: policy, which is derived from the national interest, and battlefield demands.<sup>23</sup> To effectively bridge the gap between the political and strategic aspects of war, planners require a coherent intellectual framework to define their objective and identify the means to use to achieve it. Yitzhak Klein asserts that this framework is strategic culture.<sup>24</sup>

## THE INFLUENCE OF STRATEGIC CULTURE

Strategic culture is shaped by numerous factors including history, geography, politics, national culture, economics and technology. It draws upon these factors to provide a subjective guide that shapes a planner's interpretations and intuitions. It may also be a source of prejudice and self-deception that may blindside the planner when he least expects it. While strategic culture can be viewed at three distinct levels, this essay will focus on strategic culture at the military level or the

‘national ways of making war’.<sup>25</sup>

This relationship between force utility and strategic culture will be used in the following sections to analyse the Pacific War and OAF, and explain how they led to air and maritime strategies being conceived without assessment on their impact on the land strategy. In the Pacific War, the land strategy was formulated based on the requirements of the air and maritime domains while in OAF, land forces were not deployed as part of the campaign.

## THE PACIFIC WAR: FORCE UTILITY AND STRATEGIC CULTURE FAVOUR AIR AND MARITIME STRATEGIES

This analysis will illustrate how the factors affecting strategy led to the conception of an air and maritime-dominant strategy to fulfil the political objectives of the Pacific War. The case study will focus on the central Pacific theatre from Midway onwards as it was from then that the US started to recover from Pearl Harbour and began formulating an offensive strategy.

The political objective of the US in the Pacific War was an unlimited one—the unconditional surrender of Imperial Japan.<sup>26</sup> In line with this objective, the ends, ways and means of the Pacific campaign were shaped accordingly. The ‘ends’ were twofold: attain the physical defeat of the Japanese military and destroy their will to resist. The ‘ways’ encompassed several options. While US planners were prepared to eventually launch a land invasion of Japan, they believed that a maritime blockade combined with a devastating air offensive would be the best way to achieve the political end-state at the lowest possible cost.<sup>27</sup> To achieve this, an island-hopping strategy was developed. This involved identifying suitable islands for capture as staging areas. These were then used to extend the reach of US air and naval power until the Japanese home islands were within range.<sup>28</sup> The means to achieve this were the US carrier, strategic bomber fleet and the army divisions assigned to this theatre. These ends, ways and means formed a strategy that was shaped by the objective factors of geography.

Geographically, the Pacific Theatre comprised

numerous islands and atolls separated by vast bodies of water. This necessitated the dominance of a maritime strategy to establish sea control. This was especially vital in this theatre as both Japan and the US strongholds in the Pacific were reliant on Sea Lines of Communications (SLOCs) for resupply. The US exploited this by ordering unrestricted submarine warfare against Japan. This proved critical in starving Japan of badly needed resources in the later stages of the war by destroying an average of 100,000 tons of Japanese shipping every month.<sup>29</sup> By mid-1943, this totalled 1,745,000 tons of Japanese merchant shipping.<sup>30</sup>



Map of Iwo Jima detailing the invasion. Iwo Jima was used as a US staging base for resupply and refuelling during the Pacific War once it was captured.

Complementing this maritime strangulation was carrier and land-based airpower. US airpower destroyed Japanese naval forces and established air superiority over contested islands prior to amphibious landings. Strategic airpower was also the only way US forces could effectively strike the Japanese home islands early in the war due to the vast distances involved. The strategy in the central Pacific thus necessitated a heavy

emphasis on the maritime and air domains. Tactically, land forces were crucial in capturing key islands for subsequent force projection. Air and naval power did support the land force for these tactical actions. However, the selection of those islands was determined by the needs of the air and maritime strategies—those islands deemed suitable as staging areas for ships and aircraft. Moreover, the determined martial spirit of the Japanese soldiers, compelled the Japanese to fight to the death even if hopelessly outnumbered. This further deterred the US from engaging in costly ground assaults if there were alternatives. These objective factors of geography and enemy capability were complemented by the subjective factors of US strategic culture.

The Pacific War exhibited six out of the seven characteristics of US strategic culture proposed by Russel Weigley and Thomas Mahnken.<sup>31</sup> These characteristics, when considered along with geographical and enemy factors, shaped a strategy dominated by air and naval domains. These characteristics of US strategic culture are: (1) Aggressiveness at all levels of warfare. Even while on the defensive after Pearl Harbour, the US employed counter-offensives as seen in the Coral Sea and Midway.<sup>32</sup> (2) And (3) Desire for decisive battles and employing maximum effort. Evident in the battles for Midway, the Marianas and the Leyte Gulf which saw heavy concentrations of combat power aimed at seeking decisive battles with the Japanese fleet, despite significant risks to US forces.<sup>33</sup> (4) An industrial approach to war. During the course of WWII, the US produced 297,000 aircraft, 8,800 naval vessels, 193,000 artillery pieces and 86,000 tanks, out-producing the entire Axis in aircraft, tanks and heavy guns within the first year of its' involvement.<sup>34</sup> (5) Firepower-intensive approach to war. Seen in the strategic bombing of Japanese cities and the amphibious assaults which employed co-ordinated naval gunfire and close-air support.<sup>35</sup> (6) Technological approach to warfare. Demonstrated in multiple innovations, the most notable of which were code-breaking, the invention of the B-29 strategic bomber—a qualitative leap from other contemporary designs and, the atomic bomb.<sup>36</sup> The only

characteristic not evident was the preference for direct over indirect strategies. Throughout the Pacific War, the US sought to bypass and isolate Japanese strongpoints where possible instead of attacking them head-on, a clear indirect strategy.<sup>37</sup>

Ultimately, the war was won by crippling of the Japanese military by combined air and maritime offensives, the erosion of Japanese will and economic strangulation wrought by the strategic bombing, submarine campaigns, use of the atomic bombs, and the invasion of Manchuria by Russia.<sup>38</sup> All these factors emphasised the dominant role that air and maritime strategies played in obtaining the unconditional Japanese surrender, thus sparing the Allies a costly ground invasion of Japan.

## **OPERATION ALLIED FORCE: LIMITED POLITICAL OBJECTIVES RESTRICT THE USE OF LAND POWER**

This case study will illustrate how an air strategy was formulated in isolation from a land or maritime strategy. The main reason for this was that NATO's political objective was essentially limited—stopping the oppression of Kosovar Albanians.<sup>39</sup> Many of the NATO states were reluctant to sustain casualties during the intervention and this effectively ruled out the employment of land forces. The 'ends' thus involved a strategy of coercion that materialised in the form of a phased air operation aimed at stopping attacks on civilians, rather than one aimed at destroying Milosevic's forces and government, at least initially.<sup>40</sup> The objective factor of geography also played a part in shaping the choice of 'ways' used in the conflict.

Geographically, land locked Kosovo limited the employment of maritime power to force projection and ship-to-shore strike. Land routes through Macedonia and Albania were either constricted by narrow valleys or difficult for armoured vehicles due to their poor state of repair. The high mountain ranges further limited the range and endurance of heliborne forces. The terrain thus favoured the defending forces and would require a massive investment of manpower by NATO if they wished to successfully prosecute a land campaign—something deemed undesirable as the conflict was a

humanitarian intervention rather than an all-out war. The political environment behind the conflict also made the deployment of land forces a politically risky decision that would face considerable domestic opposition.<sup>41</sup> These factors, when considered with the limited political objectives, left air power as the sole military instrument that NATO could rely on. On top of these factors shaping force utility, strategic culture also played a role in favouring the choice of air power as the sole strategic arm.

**Many of the NATO states were reluctant to sustain casualties during the intervention and this effectively ruled out the employment of land forces.**

The exact characteristics of NATO strategic culture are more difficult to define since NATO is an alliance of democratic European states. However, much can be inferred from NATO's approach to the conflict. The US, as a major NATO member, would have a great influence on overall NATO strategic formulation. The most obvious influence is the technological approach to the campaign which saw the widespread use of Unmanned Aerial Vehicles (UAV), secure, real-time Command and Control (C2) networks, and Precision-Guided Munitions (PGM) which gave NATO aircraft an all-weather strike capability. Risk-aversion and a reluctance to put boots on the ground was another manifestation of NATO strategic culture. Due to the low-stakes involved in the conflict—NATO was not fighting an existential threat, and thus was unwilling to put lives at risk when airpower offered a less risky solution. This is supported by Martinez-Marchain and Allen who asserted that 'lower stakes make an airstrike-only strategy more likely.'<sup>42</sup>

The eventual resolution of the conflict has been attributed to a number of possible factors: (1) The withdrawal of Russian support, (2) International isolation and dwindling domestic support, (3) Potential deployment of NATO ground forces, and (4) Milosevic's

indictment as a war criminal. However it is undeniable that the air campaign was indispensable to this outcome as it was the sole coercive military instrument.<sup>43</sup>

## CONCLUSION

The case studies illustrated disproved the notion that air and maritime strategies must always be assessed and formulated in terms of their impact on land strategy. In the Pacific War, land power was employed at locations dictated by the needs of the air and naval forces. To meet the political objectives, force utility had to be considered based on the geographical characteristics of the area of operations, widely separated islands in a vast ocean board, as well as the capabilities of the Japanese military which had established a large defensive perimeter in the Pacific and were prepared to fight to the death on land. Aspects of strategic culture also influenced the formulation of strategy as seen in the industrial and technological emphasis and the desire for decisive battles seen throughout the war. These objective and subjective factors led to the conceptualisation of an air and maritime-dominant strategy.

The case study of OAF demonstrated how a combination of geographical factors, limited political objectives and strategic culture dictated an independent air strategy. The reluctance of NATO to risk a costly ground war and constraints imposed by geography combined, left air power as the sole military tool to achieve the limited political objective of stopping the oppression of Kosovar Albanians. Strategic culture played an enabling role due to the high-tech capabilities available to NATO, and an inhibiting role because of NATO's risk aversion. Both of these cases lead us to the conclusion that while operationally, air, land and maritime strategies must often be formulated with each other in mind, none should be privileged over the other in pursuit of the political objectives. The assessment and formulation of air, maritime and land strategy has to be done in the context of seeking the best way of serving the national interests and achieving national goals. The ends dictate the ways and means.

## BIBLIOGRAPHY

- Arthur, F. Lykke Jr, "Defining Military Strategy," *Military Review* 69, no. 5 (May 1989).
- Bradley, J. H, Dice, J. W, *The Second World War, Asia and the Pacific*, Department of History, (United States Military Academy, West Point, New York, 2002).
- Clausewitz, Carl, *On War*, Trans. & Ed. Howard, M. & Paret, P. (Princeton University Press, New York, 1976).
- Global Security.org, "*Strategy: Ends and Means*", (2017), [https://www.globalsecurity.org/military/library/policy/usmc/mcdp/1-1/mcdp1-1\\_chap2.pdf](https://www.globalsecurity.org/military/library/policy/usmc/mcdp/1-1/mcdp1-1_chap2.pdf)
- Hart, B. L, *Strategy*, (New York: Praeger Publishers, 1975).
- Klein, Yitzhak, "A Theory of Strategic Culture," *Comparative Strategy* Vol. 10, (Department of International Relations, The Hebrew University of Jerusalem, Jerusalem, 1991).
- Layton, P. "The Idea of Grand Strategy", *The RUSI Journal*, 157:4, (2012), DOI: 10.1080/03071847.2012.714193
- Mahnken, T, G, "*United States Strategic Culture*," Defence Threat Reduction Agency Advanced Systems and Concepts Office, (2006), [http://www.au.af.mil/au/awc/awcgate/dtra/mahnken\\_strat\\_culture.pdf](http://www.au.af.mil/au/awc/awcgate/dtra/mahnken_strat_culture.pdf).
- Martinez-Machain & Allen, "Why Countries Choose Airstrikes as a Coercive Tool". *The Straits Times*, (Apr 16, 2018), <https://www.straitstimes.com>.
- Mearsheimer, J. J, *The Tragedy of Great Power Politics*, (University of Chicago, 2014).
- Muller, R. Richard, *The Air War in the Pacific, A History of Air Warfare*, Ed. Olsen, J. Andreas, (Potomac Books, Washington D.C. 2010).
- Nohr, A. A, "The Utility of Force is Contextual", *E-International Relations Students*, (2012), <http://www.e-ir.info/2012/04/06/the-utility-of-force-is-contextual/>.
- Osgood, R. E. *NATO: The Entangling Alliance*, (Chicago, IL: University of Chicago Press, 1962).
- Powers Rob, "What is an Operational Environment in the Military?" *The Balance*, (Mar 2018), <https://www.thebalance.com/what-is-operational-environment-3350884>.
- Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1973).
- Smith, R, Introduction: Understanding Force, *The Utility of Force*, (Vintage Books, New York, 2008).
- Stigler, L. Andrew, "A Clear Victory for Air Power", *International Security* 27, no.3, (MIT Press, Winter 2002-2003).
- Till, G, *In Search of Seapower, Seapower: A Guide for the Twenty First Century*, (Routledge, New York, 2013).

## ENDNOTES

1. Mearsheimer, J. J, *The Primacy of Land Power, The Tragedy of Great Power Politics*, (University of Chicago, 2014), 83.
2. Ibid., 85-86.
3. Ibid., 110-111.
4. Ibid., 110-113.
5. US Air Force, *The Air War over Serbia: Aerospace Power in Operation Allied Force*, Initial Report (Washington, DC: US Air Force, 2001).
6. Osgood, R. E. *NATO: The Entangling Alliance*, (Chicago, IL: University of Chicago Press, 1962).
7. Hart, B. L, *Strategy*, (New York: Praeger Publishers, 1975), 351.
8. Arthur, F. Lykke Jr, "Defining Military Strategy," *Military Review* 69, no. 5 (1989) 3.
9. Global Security.org, "*Strategy: Ends and Means*", (2017) 38, [https://www.globalsecurity.org/military/library/policy/usmc/mcdp/1-1/mcdp1-1\\_chap2.pdf](https://www.globalsecurity.org/military/library/policy/usmc/mcdp/1-1/mcdp1-1_chap2.pdf)

10. Layton, P. "The Idea of Grand Strategy", *The RUSI Journal*, 157:4, (2012), 57-58, DOI: 10.1080/03071847.2012.714193
11. Arthur, F. Lykke Jr, "Defining Military Strategy," 3.
12. Global Security.org, 40.
13. Nohr, A. A, "The Utility of Force is Contextual", *E-International Relations Students*, (2012), <http://www.e-ir.info/2012/04/06/the-utility-of-force-is-contextual/>.
14. Klein, Yitzhak, "A Theory of Strategic Culture," *Comparative Strategy*, 10, Department of International Relations, (The Hebrew University of Jerusalem, Jerusalem, 1991), 5.
15. Global Security.org, 44-45.
16. Clausewitz, Carl, What is War? *On War*, Trans. & Ed. Howard, M. & Paret, P. (Princeton University Press, New York, 1976) 99.
17. Smith, R, Introduction: Understanding Force, *The Utility of Force*, (Vintage Books, New York, 2008), 6-7.
18. Ibid.
19. Smith, R, *The Utility of Force*, 8.
20. History.com Staff, "Vietnam War", *History.com*, (A+E Networks, 2009), <https://www.history.com/topics/vietnam-war/vietnam-war-history>.
21. Powers Rob, "What is an Operational Environment in the Military?" *The Balance*, (Mar 2018), <https://www.thebalance.com/what-is-operational-environment-3350884>
22. Clausewitz, Carl, *On War*, 134-136.
23. Klein, Yitzhak, *Comparative Strategy*, 6-7.
24. Ibid.
25. Klein, Yitzhak, *Comparative Strategy*, 8.
26. Bradley & Dice, *The Second World War, Asia and the Pacific*, 148.
27. Ibid., 148.
28. Ibid., 156-157.
29. Ibid., 115-117.
30. Ibid., 151.
31. Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1973), xxi.  
Mahnken, T, G, "*United States Strategic Culture*," 12.
32. Bradley & Dice, *The Second World War, Asia and the Pacific*, 103-115.
33. Ibid., 108-115, 161-167, 192-195
34. Mahnken, T, G, "*United States Strategic Culture*," 11.
35. Bradley & Dice, *The Second World War, Asia and the Pacific*, 170.
36. Muller, R. Richard, *A History of Air Warfare*, 73.
37. Bradley & Dice, *The Second World War, Asia and the Pacific*, 139-140.
38. Ibid., 252-259.
39. Muller, R. Richard, *A History of Air Warfare*, 229.
40. Ibid.

41. Stigler, L. Andrew, “A Clear Victory for Air Power”, *International Security* 27, no.3, (MIT Press, Winter 2002-2003), 133-134.
42. Martinez-Machain & Allen, “Why Countries Choose Airstrikes as a Coercive Tool”. *The Straits Times*, (Apr 16, 2018), <https://www.straitstimes.com>.
43. Muller, R. Richard, *A History of Air Warfare*, 244



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# WHAT ARE THE PAST, PRESENT AND FUTURE CHALLENGES TO SINGAPORE'S NATIONAL SECURITY?

By MAJ Alex Phua Thong Teck

## ABSTRACT

In the essay, the author discusses Singapore's operating environment and examines how her national security strategies have adapted to challenges to stay relevant and effective in defending her national interests. He briefly outlines Singapore's national interests, based on her geography and history. He then frames her national security strategies with a Grand Strategy framework of Defence and Security, Nation Building, and National Development, to crystallise the discussion and explore pertinent challenges from independence, to the future. The author feels that while Singapore's national interests remain constant, the proposed national security strategies can still be used to frame and respond to challenges in new operating environments.

Keywords: *National Security, National Interests, Co-operation, Cohesion, Identity*

## DEFINING NATIONAL SECURITY

National Security, 'in an objective sense, measures the absence of threats to acquired values; in a subjective sense, it measures the absence of fear that such values will be attacked.'<sup>1</sup> It is part of government policy formulation to create 'national and international political conditions favourable to the protection or extension of vital national interests against existing and potential adversaries.'<sup>2</sup> Hence, a challenge to National Security can be viewed as 'an action or sequence of events that threatens... to degrade the quality of life for the inhabitants of the state, or threatens significantly to narrow the range of policy choices available.'<sup>3</sup>

In this essay, the author discusses Singapore's operating environment and examines how her national security strategies have adapted to challenges to stay relevant and effective in defending her national interests.

## SINGAPORE'S REALITY

Singapore's sense of place and threat perception is influenced largely by her geography and history.<sup>4</sup> Singapore's key National Interests are those that would allow her to overcome inherent vulnerabilities due to geographical and historical factors.

Colin Gray argued that while geography does not necessarily determine the course of history, 'it conditions, shapes and influences the course of a

polity's historical choices... [It] imposes distinctive constraints and provide distinctive opportunities that have profound implications for policy and strategy.'<sup>5</sup> Geography as a setting, influences the script. But a country's destiny is ultimately in the hands of the governing elite.

Singapore's geography has been a source of pride, envy and concern. It is strategically positioned along major trade routes flowing from the East to the West via The Straits of Malacca and the South China Sea, and must actively promote freedom of navigation along these vital sea lanes.<sup>6</sup> It is without natural resources (except human resource) or a hinterland, so it has to reach out and cultivate her position in the global arena.<sup>7</sup> Militarily, it is a point-target—unable to conduct an effective defence in depth against any surprise attack.<sup>8</sup>

Historically, the Singapore story has been a narrative of survival and success against the odds of communist insurgency, communal tension and sudden independence in a volatile region.<sup>9</sup> Singapore had to move fast in 'getting the basics right' to ensure the survival of a small nation of disparate people without a common heritage, re-energise the economy, build up a self-defence capability in the throes of British withdrawal, and cultivate diplomatic clout regionally and internationally to win recognition for her independent status.<sup>10</sup> Today, her infrastructure and



*Accompanying Sea Security Team (ASSeT) from the Republic of Singapore Navy (RSN) team operators climbing up a Jacob's ladder rigged to the Boarding and Search Trainer in Pulau Brani on 19<sup>th</sup> Apr, 2018.*

activities bustle with a population of about 5.61 million people, boasting healthy trade and income indicators, all compacted into an area roughly 719km<sup>2</sup>.<sup>11</sup> The Singapore story is thus a story of grit in the pursuit of political independence, economic wellbeing, and survival.

## SINGAPORE'S NATIONAL INTERESTS

What George and Keohane wrote about 'three irreducibles' to National Interests, namely physical survival, economic welfare, and sovereign liberty is not too far from the Singapore experience.<sup>12</sup>

Inferring from the elaboration into Singapore's geographical and historical influences on policy choices, the author argues that the 'three irreducible' National Interests in the Singapore context can be explained as follows. 'Physical survival' is the need for a self-defence capability against external aggression despite the apparent disadvantage in territorial depth and manpower resource, and cohesion against internal strife in a non-homogenous society. 'Economic well-being' is the need for a strong economy that can weather any storm to provide for her inhabitants, despite not having a hinterland or natural resources. 'Sovereign liberty' is

the need for the right to determine her own future, free from political coercion despite her small geographical size.

## NATIONAL SECURITY – TOWARDS A GRAND STRATEGY TO SECURE NATIONAL INTERESTS

Grand Strategy is the 'capacity of a nation's leaders to bring together all the elements, both military and non-military, for the preservation and enhancement of the nation's long-term (that is, in wartime and peacetime) best interests.'<sup>13</sup> Grand Strategy is a policy decision-making architecture to ensure 'all the elements' of national power and resources are focused to protect the national interests. Or, in other words, to ensure national security. It presents a coherent and consistent framework to give purpose and direction, so that events occurring inside or outside of the nation can be interpreted and responded to.<sup>14</sup>

In this light, the author proposes that Singapore's Grand Strategy for National Security lies within the following three categories: Security and Defence (for survival as a sovereign nation), Nation-Building (for

identity and social cohesion), and National Development (for modernisation and economic development). As then-Minister Mentor Lee Kuan Yew said, "You cannot have a strong defence unless you have a strong finance. And you cannot have strong defence and strong finance unless you have a strong unified, well-educated and increasingly cohesive society. They are all part of one whole."<sup>15</sup>

## SECURITY AND DEFENCE — DIPLOMATIC SPACE AND A 'BIG STICK'

*"Friendship in international relations is not a function of goodwill or personal affection."*

- Then-Minister Mentor Lee Kuan Yew, 2009<sup>16</sup>

Singapore's geography comes to the fore. Singapore's lack of geographical size and hinterland gave the early leaders no choice but to engage with the rest of the world in order to stay relevant and independent as a nation.<sup>17</sup> Small countries must create that 'diplomatic space' to 'project itself' and 'shape other countries' perceptions of its relevance and usefulness.<sup>18</sup> Singapore had to remain 'relevant so that other countries have an interest in [her] continued survival and prosperity as a sovereign and independent nation.'<sup>19</sup>

However, this did not mean that Singapore should bow to the whims and fancy of bigger powers, especially so in the Cold War era surrounding independence. On the contrary, small states like Singapore had to stand by the rule of international law to safe guard her sovereignty and interests, and constantly seek third party arbitration in disputes.<sup>20</sup> Small states can never match up to the might of bigger states if interaction was governed by relative power instead of law.<sup>21</sup> Small countries must also cultivate relationships and establish ties to assure co-operation, mutual benefit and a bigger presence to engage further out in the world.<sup>22</sup>

In this sense, Singapore's security as an independent nation is dependent on cultivating diplomatic ties with international partners. But as then-Brigadier General Lee Hsien Loong aptly described, 'diplomacy is no substitute for strength.'<sup>23</sup> A strong and credible deterrent force, in the form of the Singapore

Armed Forces (SAF), is the 'Big Stick' to support and protect her diplomatic space.<sup>24</sup> The SAF functions on the twin pillars of Deterrence and Diplomacy. It has undergone gradual improvements to be a premier defence force with global clout, able to conduct operations for war, humanitarian assistance and peacetime contingencies.<sup>25</sup> At the same time, the SAF engages in defence diplomacy to foster ties, build confidence, and enhance interoperability should the need arise.<sup>26</sup>

**Small states can never match up to the might of bigger states if interaction was governed by relative power instead of law.**



Lee Kuan Yew and his wife Kwa Geok Choo with US President Ronald Reagan and his wife Nancy Reagan on 8<sup>th</sup> October, 1985 at the White House.

## NATION BUILDING – BUILDING RACIAL AND RELIGIOUS HARMONY

The need for social cohesion was borne out of communal strife along religious, racial and political lines.<sup>27</sup> Singapore has demonstrated political resolve and social commitment through a tripartite of 'state-community-religious sector relationship,' to ensure communal tensions of yester-years do not reoccur and disintegrate the nation from within.<sup>28</sup> The government follows three principles to ensure harmony.<sup>29</sup> First, through multiculturalism where the diverse cultural heritage is recognised, but a common national identity takes precedence. Second, through state secularism where the state does not act against any religion, and everyone has the right to practise their faith freely. Third, through meritocracy where opportunities to succeed are without bias to any racial background.

State apparatus such as the Maintenance of Religious Harmony Act introduced in 1990, statutory boards like the People's Association established in 1960, the Inter Racial and Religious Confidence Circle (IRCC) initiative in 2007, and even recognising Racial Harmony Day on 21<sup>st</sup> July each year to remember the bloody race riots in 1964, are some examples of the government's commitment to ensure harmony.<sup>30</sup>

The social compact of living in harmony is evident in many facets of Singaporean life. English was chosen as the language of commerce to give everyone an equal footing.<sup>31</sup> One notable example is how the public housing projects of the Housing Development Board (HDB) feature common spaces (i.e., playgrounds, parks, fitness corners) for interaction, and administers an Ethnic Integration Policy (EIP) to ensure a balanced proportion of ethnic groups to further promote racial integration.<sup>32</sup> National Service is also key to racial integration through the 'breaking-down of language, racial, and class barriers... [to] develop common ideas and beliefs, as well as a common identity and loyalty to the nation.'<sup>33</sup> A sentiment echoed much earlier by then-Minister for Interior and Defence, Dr Goh Keng Swee, when he highlighted the 'nation building aspect of defence' with participation from 'all strata of society.'<sup>34</sup>

## NATIONAL DEVELOPMENT – MODERNISATION AND WELFARE

*"So, how do you have a strong economy? By maximising your human resources. Your people, the way they are trained, organised, educated to serve the world's needs, which means infrastructure, connections, linkages with those parts of the world which will add value to our lives."*

- Then-Minister Mentor Lee Kuan Yew, 2011<sup>35</sup>

Around the time of independence, Singapore was plagued by the impending British withdrawal and the communist threat. Losing the British meant losing the status, benefits and resources of being the hub of British Empire in South East Asia.<sup>36</sup> The British military expenditure at the time accounted for almost 20% of the Gross Domestic Product (GDP), and up to 70,000 jobs.<sup>37</sup> A few years prior to independence, the early leaders knew that Singapore's entrepôt trade was stagnating and on a decline—industrialisation was the key to modernisation and growth.<sup>38</sup> The early leaders also saw the communist problem as an economic one, where economic growth would stifle support for subversion or revolution.<sup>39</sup> The government's strategy to focus on growth was to build internal confidence, and also to have the resources to tackle social problems.<sup>40</sup>

Then-Minister for Foreign Affairs, Mr Sinnathamby Rajaratnam aptly described Singapore's vision as a 'global city' to circumvent her small-ness by making the world her hinterland.<sup>41</sup> While others were shying away from foreign investors in the 1960s, Singapore gained an economic edge by bringing in Multinational Corporations (MNC) to develop her economy into an export-led industry.<sup>42</sup> English was adopted as the language of commerce to engage the world effectively.<sup>43</sup> Over time, Singapore's global approach cemented its place as a maritime and aviation hub for the region and the world.<sup>44</sup>

Maintaining a robust economy also demands prudent fiscal spending. The government had always adopted the 'poor man's mentality in a rich man's reality.'<sup>45</sup> Till today, spending is prioritised to ensure each generation pays off itself, with the remainder saved for the future. Singapore's connection to the

world exposes it to the ups and downs of the global economy.<sup>46</sup> The economy must remain robust by minimising or avoiding government borrowing, and keep a healthy national reserve for a rainy day. One such 'rainy day' was the financial crisis of 2007/2008, when the national reserves were drawn to keep the economy buoyant.<sup>47</sup> This prudence was also evident in the 2018 Budget request for an increase in government taxes in 2021-2025 to support greater spending beyond 2020 in areas such as elderly healthcare, security, and infrastructure.<sup>48</sup>

**The economy must remain robust  
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### NATIONAL SECURITY FOR THE FUTURE

In Prime Minister (PM) Lee Hsien Loong's address to the 8<sup>th</sup> S. Rajaratnam Lecture, he shared that Singapore's national interests had not changed since independence in 1965:

*"[W]e have to be clear what our fundamental interests are and these have not changed in 50 years – have peace in the world, to have an international order where countries respect and abide by international law; to establish a network of friends and allies whom we can work with; to have a stable and secure Asia-Pacific region, especially Southeast Asia; and ultimately, to preserve our sovereignty, and our right to determine our future."*

- Prime Minister Lee Hsien Loong, 2015<sup>49</sup>

Thus far, the Grand Strategy to ensure Singapore's survival has been contextualised to the operating environment since independence—circumventing our apparent small-ness by carving out a diplomatic space under the rule of international law, building self-defence capabilities, relying on global trade to build a resilient economy, and social cohesion of diverse cultures. While the national interests remain

constant, the national security strategies must move with the times. The author feels that the proposed National Security Strategies can still adapt to frame future challenges.

Taking reference from interviews and government statements, the concerns today and the future focus on long-term national identity, ageing population and declining birth rates, keeping the economy competitive in Industry 4.0, and security against new threats like terrorism and cyber attacks.<sup>50</sup>

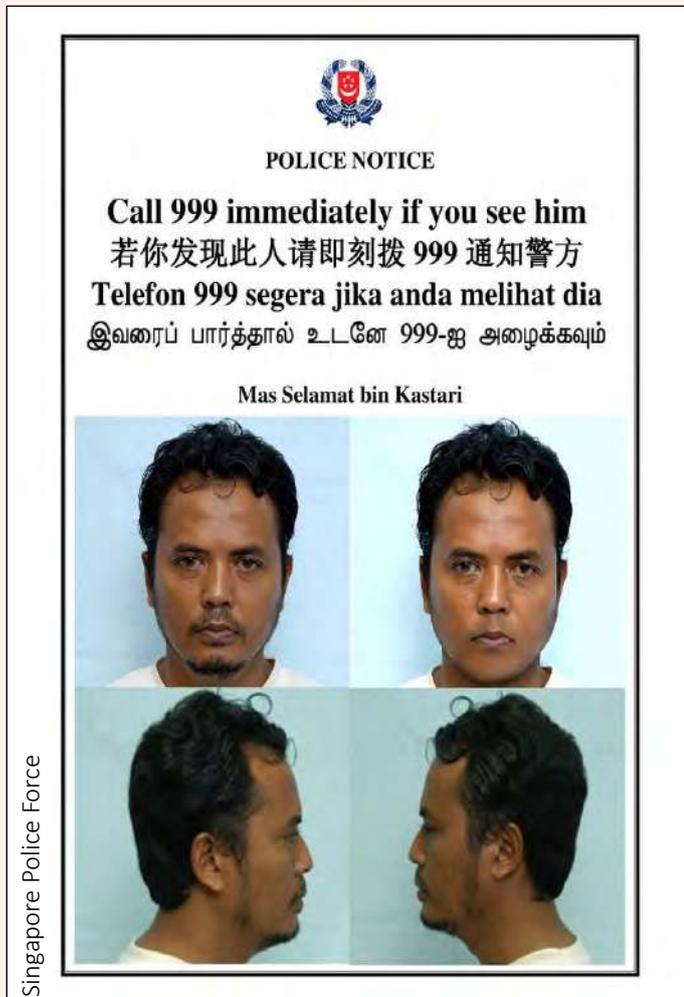
### DEFENCE AND SECURITY – VICTIMS OF OWN SUCCESS & ELUSIVE ENEMIES

Singapore has generally enjoyed good years of peace and prosperity, brought about by sound diplomatic principles, healthy trade and fiscal policies, a strong SAF, and a vigilant Home Team. The lasting peace has given certain opposition parties the opportunity to attack the government's high spending on defence, compared to other sectors like healthcare.<sup>51</sup> There is also the need to reinforce the Singapore defence narrative, especially amongst the Generation 'Y' who are more curious and worldly, but have never experienced the Japanese occupation, or communist insurgency and 'Konfrontasi'.<sup>52</sup>

However, with increased threat of non-attributable cyber attacks and terrorism, the government has to manage a wider defence narrative. Most notable were the Jemaah Islamiyah's (JI) bomb plot against foreign embassies and personnel in 2001/2002, the Messiah Cyber attack in 2013, the Ministry of Defence data breach in 2017, and the plot to launch rockets attacks at Marina Bay Sands, Singapore from Batam in 2017.

Although Singapore has developed cyber-defence capabilities such as the Defence Cyber Organisation and the Cyber Security Agency of Singapore, it must keep up with an enemy which is using increasingly sophisticated means to harvest data or launch crippling attacks.<sup>53</sup>

Equally challenging is the trans-national nature of terrorism, and the online spread of its ideologies.<sup>54</sup> Most worrisome is the return of Islamic State fighters, of Southeast Asian origins, back home.<sup>55</sup> The



A wanted poster of Mas Selamat Kastari, member of the JI, detained under Internal Security Act (ISA) indefinitely for involvement in plot to bomb Singapore Changi Airport in 2002.

government must continue to groom psychological readiness through active promotion of the SG secure movement, and the narrative of 'not if, but when'.<sup>56</sup>

## NATION BUILDING — SOCIAL RESILIENCE & SINGAPORE IDENTITY

The ageing population and declining birth rate has compelled Singapore to reach out to immigrants to support the work force and the economy.<sup>57</sup> This has generated about 1.64 million non-residents, amounting to almost 30% of the total population.<sup>58</sup>

Where Nation Building previously focused on integration along ethnic identities, immigrants who have not gone through Singapore's national education face the challenge of retaining their heritage or ascribing to the existing racial framework.<sup>59</sup> The influx of immigrants also presents the challenge of social integration under the perceived unfair competition in jobs, housing and social services.<sup>60</sup> Immigrants, frowned upon by

antagonised Singaporeans, feel they are being 'tolerated rather than welcomed'.<sup>61</sup> The crowding-out effect, infrastructure strain, perceived disparity in opportunities, and the sudden increase in diversity could dilute the sense of identity amongst Singaporeans.<sup>62</sup> While the government has responded to the tension, such as establishing the National Integration Council to help New Citizens integrate effectively, and foreign labour controls, this rift represents a potential flashpoint as long as Singapore remains dependent on immigration to keep its population stable. Such fissures could be exploited by hostile agents to disintegrate social order, especially with the recent concern over fake news that could build distrust between communities.<sup>63</sup>

Speaking at the Ho Rih Hwa Leadership in Asia Public Lecture, PM Lee Hsien Loong said that identity was something to be built from shared experiences.<sup>64</sup> Just like how the disparate ethnicities built a Singaporean identity by overcoming the challenges of independence in the first 50 years, crises in the coming years would build a new Singaporean identity. What matters is strong leadership committed to the betterment of Singapore as a nation, to galvanise the population through difficult times, and deepen what it means to be Singaporean.<sup>65</sup>

**The crowding-out effect, infrastructure strain, perceived disparity in opportunities, and the sudden increase in diversity could dilute the sense of identity amongst Singaporeans.**

## NATIONAL DEVELOPMENT — STAYING COMPETITIVE

Arguably, the ageing population has created the problem of a shrinking workforce and also the increase in healthcare expenditure and other social services.<sup>66</sup> Unlike the baby-boom generation of post-World War II (WWII), this situation is unique to this and the future generations of Singaporeans. Taking into account the anxieties of immigrant influx amongst Singaporeans, the

government has looked into ways to boost productivity instead.<sup>67</sup>

The 2018 Budget Address pointed out the need to increase taxes between 2020-2025 to build more hospitals, enhance healthcare facilities and subsidies.<sup>68</sup> However, this is only a stopgap measure. The Smart Nation movement seeks to tap into Industry 4.0 to boost productivity and economic competitiveness.<sup>69</sup> Industry 4.0 addresses the workforce crunch by replacing manual labour with automation and predictive data analytics, boosting productivity by as much as 30% in 2024.<sup>70</sup> The Economic Development Board (EDB) has taken the lead to develop a Singapore Smart Industry Readiness Index to help overcome initial barriers of transformation through consultation and assessments.<sup>71</sup> However, the systems are vulnerable to cyber attacks, and cyber security must be placed in top priority to ensure business survivability and continuation.<sup>72</sup>

## CONCLUSION

The author has briefly outlined Singapore's national interests based on her geography and history. He has also framed her national security strategies with a Grand Strategy framework of Defence and Security, Nation Building, and National Development, to crystallise the discussion and explore pertinent challenges from independence, to the future. While her National Interests remain constant, the proposed national security strategies can still be used to frame and respond to challenges in new operating environments. What does it say about Singapore? While the times may change, the spirit to overcome her smallness, by magnifying her diversity and dynamism to make an impact in the world, will always be Singapore's guiding light—like a pebble creating ripples to make its presence felt.

## BIBLIOGRAPHY

- Ang, C. G. (2016). Singapore's Conception of Security. In B. Desker, & C. G. Ang, *Perspectives on The Security of Singapore* (pp. 3-19). Singapore: World Scientific Publishing Co. Pte. Ltd.
- CEA. (2018, Mar 26). *Singapore EDB funds 300 companies to assess Industry 4.0 readiness*. Retrieved from Control Engineer Asia: <https://www.ceasiomag.com/2018/03/singapore-edb-funds-300-companies-ases-industry-4-0-readiness/>
- CENS. (2012). Centre of Excellence for National Security (CENS) Workshop: Visiting the Immigration Issue in Singapore. *Centre of Excellence for National Security, S. Rajaratnam School of International Studies*. Singapore.
- CNA. (2015, Jul 23). *Three biggest challenges Singapore will face up to SG100: Lee Hsien Loong*. Retrieved from Channel News Asia (CNA): <https://www.channelnewsasia.com/news/singapore/three-biggest-challenges-singapore-will-face-up-to-sg100-lee-hsi-8238336>
- Department of Statistics Singapore. (2018). *Latest Key Indicators*. Retrieved from Department of Statistics Singapore: <https://www.singstat.gov.sg/>
- EDB. (2017, May 10). *Tackling challenges in integrating Industry 4.0 into manufacturing operations*. Retrieved from Economic Development Board Singapore: <https://www.edb.gov.sg/en/news-and-resources/insights/manufacturing/tackling-challenges-in-integrating-industry-4-0-into-manufacturi.html>
- Foster, G. D. (1985). Missing and Wanted: A U.S. Grand Strategy. *Strategic Review*, Vol. 13, 13-23.
- Future Economy. (2016, Apr 7). *Industry 4.0 and Singapore manufacturing*. Retrieved from Future Economy Council: <https://www.gov.sg/microsites/future-economy/press-room/news/content/industry-4-0-and-singapore-manufacturing>
- George, A. L., & Keohane, R. (1980). The Concept of National Interest: Uses and Limitations. In A. L. George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice* (pp. 217 - 237). Boulder: Westview Press.
- Gertz, B. (2017, Nov 16). *NSA: Cyber Attacks Are Becoming More Sophisticated, Aggressive, and Disruptive*. Retrieved from The Washington Free Beacon: <http://freebeacon.com/national-security/nsa-cyber-attacks-becoming-sophisticated-aggressive-disruptive/>
- Goh, K. S. (1967, Mar 13). *Speech by the Minister of Defence, Dr Goh Keng Swee, In Moving the Second Reading of the National Service (Amendment) Bill in the Singapore Parliament*. Retrieved from National Archives of Singapore - Speeches and Press Releases: <http://www.nas.gov.sg/archivesonline/speeches/record-details/79b11d3f-115d-11e3-83d5-0050568939ad>
- Gray, C. (1996). The Continued Primacy of Geography. *Orbis*, Vol 40, Issue 2, 247-259.
- Han, F. K., Ibrahim, Z., Chua, M., Lim, L., Low, I., Lin, R., & Chan, R. (2011). *Lee Kuan Yew: Hard Truths to Keep Singapore Going*. Singapore: Straits Times Press.
- Heng, S. K. (2018, Feb 19). *Budget Speech*. Retrieved from Budget 2018: [http://www.singaporebudget.gov.sg/budget\\_2018/BudgetSpeech](http://www.singaporebudget.gov.sg/budget_2018/BudgetSpeech)
- Heng, Y. K. (2012, Feb 6). Rajaratnam's Global City Vision for Singapore Vindicated 40 years on. *The Straits Times*, p. A17.
- Huxley, T. (2000). *Defending the Lion City*. Allen & Unwin.
- Jayakumar, S. (2011). *On Diplomacy: A Singapore Experience*. Singapore: Straits Times Press.
- Kennedy, P. (1991). *Grand Strategies in War and Peace*. New Haven, CT: Yale University Press.
- Lee, H. L. (1984, Oct 16). Security Operations for Small States, Speech by Political Secretary (Defence), Brigadier General Lee Hsien Loong. *Singapore Institute of International Affairs*.
- Lee, H. L. (2010, Jan 26). *Address by Prime Minister Lee Hsien Loong at the Gala Dinner for the International Housing Conference*. Retrieved from Prime Minister's Office Singapore: <http://www.pmo.gov.sg/newsroom/address-prime-minister-lee-hsien-loong-gala-dinner-international-housing-conference>

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- Lee, H. L. (2015, Nov 27). *Address to the 8th S. Rajaratnam Lecture*. Retrieved from Prime Minister's Office Singapore: <http://www.pmo.gov.sg/newsroom/pm-lee-hsien-loong-8th-s-rajaratnam-lecture-27-november-2015>
- Lee, H. L. (2015, Jun 30). *Ho Rih Hwa Leadership in Asia Public Lecture Series*. Retrieved from Prime Minister's Office: <http://www.pmo.gov.sg/newsroom/pm-lee-hsien-loong-ho-rih-hwa-leadership-asia-public-lecture-series>
- Lee, H. L. (2016, Aug 21). *National Day Rally 2016*. Retrieved from Prime Minister's Office Singapore: <http://www.pmo.gov.sg/national-day-rally-2016>
- Lee, K. Y. (1998). *The Singapore Story*. Singapore: Times Edition Pte Ltd.
- Lee, K. Y. (2000). *From Third World to First*. Singapore : Times Media Pte Ltd.
- Lee, K. Y. (2009, April 9). *The Fundamentals of Singapore's Foreign Policy: Then and Now*. Retrieved from Prime Minister's Office: <http://www.pmo.gov.sg/newsroom/speech-mr-lee-kuan-yew-minister-mentor-s-rajaratnam-lecture-09-april-2009-530-pm-shangri>
- Lee, M., & Yeo, S. J. (2015, Sep 3). *Vivian and Chee trade barbs over SDP policy ideas*. Retrieved from The Straits Times: <http://www.straitstimes.com/politics/vivian-and-chee-trade-barbs-over-sdp-policy-ideas>
- Lim, K. (2017, Sep 27). *'Still some way to go' for terror preparedness among Singaporeans: Shanmugam*. Retrieved from Channel News Asia: <https://www.channelnewsasia.com/news/singapore/still-some-way-to-go-for-terror-preparedness-among-singaporeans-9256530>
- Lim, S. G. (2015, Jan 15). *In Search of Purpose 2015: An Evening with Lim Siong Guan*. Retrieved from Central Singapore Community Development Council: <https://www.cdc.org.sg/centralsingapore/resources/in-search-of-purpose-talks>
- Lim, Y. L. (2016, Mar 29). *Four key challenges for Singapore in next 50 years*. Retrieved from The Straits Times: <http://www.straitstimes.com/singapore/four-key-challenges-for-singapore-in-next-50-years>
- Menon, R. (2015, Aug 5). *"An Economic History of Singapore: 1965-2065\*" - Keynote Address by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at the Singapore Economic Review Conference 2015*. Retrieved from Monetary Authority of Singapore: <http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2015/An-Economic-History-of-Singapore.aspx>
- MINDEF (3G SAF). (n.d.). *3G SAF: Transforming the SAF*. Retrieved from Ministry of Defence (MINDEF) Singapore: <https://www.mindef.gov.sg/web/portal/mindef/defence-matters/defence-topic/defence-topic-detail/3g-saf>
- MINDEF (Defence Policy). (n.d.). *Defence Policy & Diplomacy*. Retrieved from Ministry of Defence (MINDEF) Singapore: <https://www.mindef.gov.sg/web/portal/mindef/defence-matters/defence-topic/defence-topic-detail/defence-policy-and-diplomacy>
- Mohammad, A. M., & Mohamed, I. M. (2016). *Managing Religious Diversity in Singapore: Context and Challenges*. In B. Desker, & C. G. Ang, *Perspectives on The Security of Singapore* (pp. 253-276). Singapore: World Scientific Publishing Co. Pte. Ltd.
- Ng, D. (2018, Mar 9). *Why fake news is getting harder to spot (and the impact it could have)*. Retrieved from Channel News Asia: <https://www.channelnewsasia.com/news/cnainsider/fake-news-getting-harder-to-spot-singapore-select-committee-10027310>
- Ong, W. (2011). *Peripheral to Norm? The Expeditionary Role of the Third Generation Singapore Armed Forces*. *Defence Studies*, Vol. 11, No. 3, (September 2011), pp. 541-558 .
- Ong, W. (2011). *The Need for Engagement in Singapore's Defence Policies*. *S. Rajaratnam School of International Studies (RSIS) Commentaries*, No. 60/2011.
- Parameswaran, P. (2015, Jul 2). *Can Singapore Overcome its Future Challenges?* Retrieved from The Diplomat: <https://thediplomat.com/2015/07/can-singapore-overcome-its-future-challenges/>
- Png, P.-S. (1976). *Racial Integration and Nation-Building in Singapore*. *Philippine Sociological Review*, Vol. 24, No. 1/4, *The Chinese in ASEAN Countries: Changing Roles and Expectations* (Jan-Oct 1976), pp. 73-79.
- PSD. (n.d.). *Cultivating a Harmonious Society: Becoming One People*. Retrieved from Public Service Division: <https://www.psd.gov.sg/heartofpublicservice/our-institutions/cultivating-a-harmonious-society-becoming-one-people/>

Rajaratnam, S. (1972, Feb 6). *Singapore: Global City (Text of address by Minister for Foreign Affairs S Rajaratnam to the Singapore Press Club*. Retrieved from National Archives of Singapore - Speeches and Press Releases: <http://www.nas.gov.sg/archivesonline/speeches/record-details/fd2918de-3270-11e4-859c-0050568939ad>

Shanmugaratnam, T. (2009, Jan 22). *Budget Speech 2009*. Retrieved from Singapore Budget 2009: [http://www.singaporebudget.gov.sg/budget\\_2009/speech\\_ph/ph.html](http://www.singaporebudget.gov.sg/budget_2009/speech_ph/ph.html)

Singh, B. (2017, Jul 17). *Southeast Asia Braces for the Post-Islamic State Era*. Retrieved from The Diplomat: <https://thediplomat.com/2017/07/southeast-asia-braces-for-the-post-islamic-state-era/>

Tan, E. (2017, Sep 29). *Quality immigration will remain Singapore's lifeblood*. Retrieved from Today: <https://www.todayonline.com/singapore/quality-immigration-will-remain-singapores-lifeblood>

Tan, S. S. (2016). Singapore and Global Governance: Free-Rider or Responsible Stakeholder? In B. Desker, & C. G. Ang, *Perspectives on the Security of Singapore* (pp. 65-86). Singapore: Mainland Press Pte. Ltd.

Teo, J. (2017, Mar 8). *Speech by Senior MOS Josephine Teo for MOT at the Committee of Supply Debate*. Retrieved from Budget 2017: <https://www.gov.sg/microsites/budget2017/press-room/news/content/speech-by-senior-mos-josephine-teo-for-mot-at-the-committee-of-supply-debate>

Today. (2018, Apr 15). *The Big Read: Are Singaporeans anti-foreigner? Not in the real world*. Retrieved from Today Online: <https://www.todayonline.com/singapore/big-read-are-singaporeans-anti-foreigner-not-in-real-world-0>

Trager, F. N., & Simonie, F. L. (1973). An Introduction to the National Security. In F. N. Trager, & P. S. Kronenberg, *National Security and American Society; Theory, Process and Policy* (pp. 35-48). University Press of Kansas.

Ullman, R. H. (1983). Redefining Security. *International Security*, Vol 8, No. 1 (Summer 1983): 129-153.

Waslo, R., Lewis, T., Hajj, R., & Carton, R. (2017). *Industry 4.0 and cybersecurity: Managing Risk in an Age of Connected Production*. Deloitte University Press. Retrieved from Deloitte University Press.

Wolfers, A. (1952). "National Security" as an Ambiguous Symbol. *Political Science Quarterly*, Vol. 67, No. 4. (Dec., 1952), pp. 481-502.

Wright, R. (2017, Jun 5). *How Different — and Dangerous — is Terrorism Today?* Retrieved from The New Yorker: <https://www.newyorker.com/news/news-desk/how-different-and-dangerous-is-terrorism-today>

Yeoh, B., & Lin, W. (2012, Apr 3). *Rapid Growth in Singapore's Immigrant Population Brings Policy Challenges*. Retrieved from Migration Policy Institute: <https://www.migrationpolicy.org/article/rapid-growth-singapores-immigrant-population-brings-policy-challenges>

## ENDNOTES

1. Wolfers, A. (1952). "National Security" as an Ambiguous Symbol. *Political Science Quarterly*, Vol. 67, No. 4. (Dec., 1952), pp. 481-502.
2. Trager, F. N., & Simonie, F. L. (1973). An Introduction to the National Security. In F. N. Trager, & P. S. Kronenberg, *National Security and American Society; Theory, Process and Policy* (pp. 35-48). University Press of Kansas.
3. Ullman, R. H. (1983). Redefining Security. *International Security*, Vol 8, No. 1 (Summer 1983): 129-153.
4. Ong, W. (2011). Peripheral to Norm? The Expeditionary Role of the Third Generation Singapore Armed Forces. *Defence Studies*, Vol. 11, No. 3, (September 2011), pp. 543 .
5. Gray, C. (1996). The Continued Primacy of Geography. *Orbis*, Vol 40, Issue 2, 248.
6. Lee, H. L. (2016, Aug 21). *National Day Rally 2016*. Retrieved from Prime Minister's Office Singapore: <http://www.pmo.gov.sg/national-day-rally-2016>
7. Tan, S. S. (2016). Singapore and Global Governance: Free-Rider or Responsible Stakeholder? In B. Desker, & C. G. Ang, *Perspectives on the Security of Singapore* (pp. 65-86). Singapore: Mainland Press Pte. Ltd.
8. Huxley, T. (2000). *Defending the Lion City*. Allen & Unwin.
9. Lee, K. Y. (1998). *The Singapore Story*. Singapore: Times Edition Pte Ltd.

10. Lee, K. Y. (2000). *From Third World to First*. Singapore : Times Media Pte Ltd.
11. Department of Statistics Singapore. (2018). *Latest Key Indicators*. Retrieved from Department of Statistics Singapore: <https://www.singstat.gov.sg/>
12. George, A. L., & Keohane, R. (1980). The Concept of National Interest: Uses and Limitations. In A. L. George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice* (pp. 224). Boulder: Westview Press.
13. Kennedy, P. (1991). *Grand Strategies in War and Peace* (pp. 5). New Haven, CT: Yale University Press.
14. Foster, G. D. (1985). Missing and Wanted: A U.S. Grand Strategy. *Strategic Review*, Vol. 13, 14.
15. Han, F. K., Ibrahim, Z., Chua, M., Lim, L., Low, I., Lin, R., & Chan, R. (2011). *Lee Kuan Yew: Hard Truths to Keep Singapore Going* (pp. 32). Singapore: Straits Times Press.
16. Lee, K. Y. (2009, April 9). *The Fundamentals of Singapore's Foreign Policy: Then and Now*. Retrieved from Prime Minister's Office: <http://www.pmo.gov.sg/newsroom/speech-mr-lee-kuan-yew-minister-mentor-s-rajaratnam-lecture-09-april-2009-530-pm-shangri>
17. Jayakumar, S. (2011). *On Diplomacy: A Singapore Experience* (pp. 22). Singapore: Straits Times Press.
18. Ibid.
19. Lee, K. Y. (2009, April 9). *The Fundamentals of Singapore's Foreign Policy: Then and Now*. Retrieved from Prime Minister's Office: <http://www.pmo.gov.sg/newsroom/speech-mr-lee-kuan-yew-minister-mentor-s-rajaratnam-lecture-09-april-2009-530-pm-shangri>
20. Jayakumar, S. (2011). *On Diplomacy: A Singapore Experience* (pp. 198). Singapore: Straits Times Press.
21. Ibid., 198.
22. Ibid., 23.
23. Lee, H. L. (1984, Oct 16). Security Operations for Small States, Speech by Political Secretary (Defence), Brigadier General Lee Hsien Loong. *Singapore Institute of International Affairs*.
24. MINDEF (Defence Policy). (n.d.). *Defence Policy & Diplomacy*. Retrieved from Ministry of Defence (MINDEF) Singapore: <https://www.mindef.gov.sg/web/portal/mindef/defence-matters/defence-topic/defence-topic-detail/defence-policy-and-diplomacy>
25. MINDEF (3G SAF). (n.d.). *3G SAF: Transforming the SAF*. Retrieved from Ministry of Defence (MINDEF) Singapore: <https://www.mindef.gov.sg/web/portal/mindef/defence-matters/defence-topic/defence-topic-detail/3g-saf>
26. MINDEF (Defence Policy). (n.d.). *Defence Policy & Diplomacy*. Retrieved from Ministry of Defence (MINDEF) Singapore: <https://www.mindef.gov.sg/web/portal/mindef/defence-matters/defence-topic/defence-topic-detail/defence-policy-and-diplomacy>
27. 1950: Maria Hertogh Riot — a riot stirred by religious dispute.  
1956: Chinese Middle School Riot — communist inspired revolt against the government  
1964 & 1969: Race riots between the Malay and Chinese Communities
28. Mohammad, A. M., & Mohamed, I. M. (2016). Managing Religious Diversity in Singapore: Context and Challenges. In B. Desker, & C. G. Ang, *Perspectives on The Security of Singapore* (pp. 253-276). Singapore: World Scientific Publishing Co. Pte. Ltd.
29. PSD. (n.d.). *Cultivating a Harmonious Society: Becoming One People*. Retrieved from Public Service Division: <https://www.psd.gov.sg/heartofpublicservice/our-institutions/cultivating-a-harmonious-society-becoming-one-people/>
30. Ibid.
31. Han, F. K., Ibrahim, Z., Chua, M., Lim, L., Low, I., Lin, R., & Chan, R. (2011). *Lee Kuan Yew: Hard Truths to Keep Singapore Going* (pp. 34). Singapore: Straits Times Press.

32. Lee, H. L. (2010, Jan 26). *Address by Prime Minister Lee Hsien Loong at the Gala Dinner for the International Housing Conference*. Retrieved from Prime Minister's Office Singapore: <http://www.pmo.gov.sg/newsroom/address-prime-minister-lee-hsien-loong-gala-dinner-international-housing-conference>
33. Png, P.-S. (1976). Racial Integration and Nation-Building in Singapore. *Philippine Sociological Review*, Vol. 24, No. 1/4, The Chinese in ASEAN Countries: Changing Roles and Expectations (Jan-Oct 1976), pp. 77.
34. Goh, K. S. (1967, Mar 13). *Speech by the Minister of Defence, Dr Goh Keng Swee, In Moving the Second Reading of the National Service (Amendment) Bill in the Singapore Parliament* (pp. 3-4). Retrieved from National Archives of Singapore - Speeches and Press Releases: <http://www.nas.gov.sg/archivesonline/speeches/record-details/79b11d3f-115d-11e3-83d5-0050568939ad>
35. Han, F. K., Ibrahim, Z., Chua, M., Lim, L., Low, I., Lin, R., & Chan, R. (2011). *Lee Kuan Yew: Hard Truths to Keep Singapore Going* (pp. 32). Singapore: Straits Times Press.
36. Lee, K. Y. (2000). *From Third World to First* (pp. 66). Singapore : Times Media Pte Ltd.
37. Ibid., 69.
38. Ibid., 67.
39. Ang, C. G. (2016). Singapore's Conception of Security. In B. Desker, & C. G. Ang, *Perspectives on The Security of Singapore* (pp. 3-19). Singapore: World Scientific Publishing Co. Pte. Ltd.
40. Han, F. K., Ibrahim, Z., Chua, M., Lim, L., Low, I., Lin, R., & Chan, R. (2011). *Lee Kuan Yew: Hard Truths to Keep Singapore Going*. Singapore: Straits Times Press.
41. Rajaratnam, S. (1972, Feb 6). *Singapore: Global City (Text of address by Minister for Foreign Affairs S Rajaratnam to the Singapore Press Club*. Retrieved from National Archives of Singapore - Speeches and Press Releases: <http://www.nas.gov.sg/archivesonline/speeches/record-details/fd2918de-3270-11e4-859c-0050568939ad>
42. Menon, R. (2015, Aug 5). "An Economic History of Singapore: 1965-2065\*" - Keynote Address by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at the Singapore Economic Review Conference 2015. Retrieved from Monetary Authority of Singapore: <http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2015/An-Economic-History-of-Singapore.aspx>
43. Han, F. K., Ibrahim, Z., Chua, M., Lim, L., Low, I., Lin, R., & Chan, R. (2011). *Lee Kuan Yew: Hard Truths to Keep Singapore Going* (pp. 33-34). Singapore: Straits Times Press.
44. Heng, Y. K. (2012, Feb 6). Rajaratnam's Global City Vision for Singapore Vindicated 40 years on. *The Straits Times*, p. A17.  
Teo, J. (2017, Mar 8). *Speech by Senior MOS Josephine Teo for MOT at the Committee of Supply Debate*. Retrieved from Budget 2017: <https://www.gov.sg/microsites/budget2017/press-room/news/content/speech-by-senior-mos-josephine-teo-for-mot-at-the-committee-of-supply-debate>
45. Lim, S. G. (2015, Jan 15). *In Search of Purpose 2015: An Evening with Lim Siong Guan*. Retrieved from Central Singapore Community Development Council: <https://www.cdc.org.sg/centralsingapore/resources/in-search-of-purpose-talks>
46. Heng, Y. K. (2012, Feb 6). Rajaratnam's Global City Vision for Singapore Vindicated 40 years on. *The Straits Times*, p. A17.
47. Shanmugaratnam, T. (2009, Jan 22). *Budget Speech 2009*. Retrieved from Singapore Budget 2009: [http://www.singaporebudget.gov.sg/budget\\_2009/speech\\_ph/ph.html](http://www.singaporebudget.gov.sg/budget_2009/speech_ph/ph.html)
48. Heng, S. K. (2018, Feb 19). *Budget Speech*. Retrieved from Budget 2018: [http://www.singaporebudget.gov.sg/budget\\_2018/BudgetSpeech](http://www.singaporebudget.gov.sg/budget_2018/BudgetSpeech)
49. Lee, H. L. (2015, Nov 27). *Address to the 8th S. Rajaratnam Lecture*. Retrieved from Prime Minister's Office Singapore: <http://www.pmo.gov.sg/newsroom/pm-lee-hsien-loong-8th-s-rajaratnam-lecture-27-november-2015>

50. CNA. (2015, Jul 23). *Three biggest challenges Singapore will face up to SG100: Lee Hsien Loong*. Retrieved from Channel News Asia (CNA): <https://www.channelnewsasia.com/news/singapore/three-biggest-challenges-singapore-will-face-up-to-sg100-lee-hsi-8238336>
- Heng, S. K. (2018, Feb 19). *Budget Speech*. Retrieved from Budget 2018: [http://www.singaporebudget.gov.sg/budget\\_2018/BudgetSpeech](http://www.singaporebudget.gov.sg/budget_2018/BudgetSpeech)
- Lim, Y. L. (2016, Mar 29). *Four key challenges for Singapore in next 50 years*. Retrieved from The Straits Times: <http://www.straitstimes.com/singapore/four-key-challenges-for-singapore-in-next-50-years>
- Parameswaran, P. (2015, Jul 2). *Can Singapore Overcome its Future Challenges?* Retrieved from The Diplomat: <https://thediplomat.com/2015/07/can-singapore-overcome-its-future-challenges/>
51. Lee, M., & Yeo, S. J. (2015, Sep 3). *Vivian and Chee trade barbs over SDP policy ideas*. Retrieved from The Straits Times: <http://www.straitstimes.com/politics/vivian-and-chee-trade-barbs-over-sdp-policy-ideas>
52. Ong, W. (2011). The Need for Engagement in Singapore's Defence Policies. *S. Rajaratnam School of International Studies (RSIS) Commentaries*, No. 60/2011.
53. Gertz, B. (2017, Nov 16). *NSA: Cyber Attacks Are Becoming More Sophisticated, Aggressive, and Disruptive*. Retrieved from The Washington Free Beacon: <http://freebeacon.com/national-security/nsa-cyber-attacks-becoming-sophisticated-aggressive-disruptive/>
54. Wright, R. (2017, Jun 5). *How Different — and Dangerous — is Terrorism Today?* Retrieved from The New Yorker: <https://www.newyorker.com/news/news-desk/how-different-and-dangerous-is-terrorism-today>
55. Singh, B. (2017, Jul 17). *Southeast Asia Braces for the Post-Islamic State Era*. Retrieved from The Diplomat: <https://thediplomat.com/2017/07/southeast-asia-braces-for-the-post-islamic-state-era/>
56. Lim, K. (2017, Sep 27). *'Still some way to go' for terror preparedness among Singaporeans: Shanmugam*. Retrieved from Channel News Asia: <https://www.channelnewsasia.com/news/singapore/still-some-way-to-go-for-terror-preparedness-among-singaporeans-9256530>
57. Total Fertility Rate (TFR) in 2017 was at 1.16, which marks a continued downward trend: TFR 1.25 (2014), TFR 1.24 (2015), TFR 1.20 (2016). Retrieved from <https://singstat.gov.sg/statistics/latest-data#18>.
- Tan, E. (2017, Sep 29). *Quality immigration will remain Singapore's lifeblood*. Retrieved from Today: <https://www.todayonline.com/singapore/quality-immigration-will-remain-singapores-lifeblood>
58. Department of Statistics Singapore. (2018). *Latest Key Indicators*. Retrieved from Department of Statistics Singapore: <https://www.singstat.gov.sg/>
59. CENS. (2012). Centre of Excellence for National Security (CENS) Workshop: Visiting the Immigration Issue in Singapore (pp. 12). *Centre of Excellence for National Security, S. Rajaratnam School of International Studies*. Singapore.
60. Yeoh, B., & Lin, W. (2012, Apr 3). *Rapid Growth in Singapore's Immigrant Population Brings Policy Challenges*. Retrieved from Migration Policy Institute: <https://www.migrationpolicy.org/article/rapid-growth-singapores-immigrant-population-brings-policy-challenges>
61. Today. (2018, Apr 15). *The Big Read: Are S'poreans anti-foreigner? Not in the real world*. Retrieved from Today Online: <https://www.todayonline.com/singapore/big-read-are-singaporeans-anti-foreigner-not-in-real-world-0>
62. CENS. (2012). Centre of Excellence for National Security (CENS) Workshop: Visiting the Immigration Issue in Singapore (pp. 5). *Centre of Excellence for National Security, S. Rajaratnam School of International Studies*. Singapore.
63. Ng, D. (2018, Mar 9). *Why fake news is getting harder to spot (and the impact it could have)*. Retrieved from Channel News Asia: <https://www.channelnewsasia.com/news/cnainsider/fake-news-getting-harder-to-spot-singapore-select-committee-10027310>
64. Lee, H. L. (2015, Jun 30). *Ho Rih Hwa Leadership in Asia Public Lecture Series*. Retrieved from Prime Minister's Office: <http://www.pmo.gov.sg/newsroom/pm-lee-hsien-loong-ho-rih-hwa-leadership-asia-public-lecture-series>

65. Ibid.
66. Based on the 2018 Budget Address projections, healthcare has doubled from \$3.9 billion in FY2011, to an estimated \$10.2 billion in 2018.
67. Lee, H. L. (2015, Jun 30). *Ho Rih Hwa Leadership in Asia Public Lecture Series*. Retrieved from Prime Minister's Office: <http://www.pmo.gov.sg/newsroom/pm-lee-hsien-loong-ho-rih-hwa-leadership-asia-public-lecture-series>
68. Heng, S. K. (2018, Feb 19). *Budget Speech* (pp. 38-39). Retrieved from Budget 2018: [http://www.singaporebudget.gov.sg/budget\\_2018/BudgetSpeech](http://www.singaporebudget.gov.sg/budget_2018/BudgetSpeech)
69. Ibid., 23.
70. EDB. (2017, May 10). *Tackling challenges in integrating Industry 4.0 into manufacturing operations*. Retrieved from Economic Development Board Singapore: <https://www.edb.gov.sg/en/news-and-resources/insights/manufacturing/tackling-challenges-in-integrating-industry-4-0-into-manufacturi.html>  
Future Economy. (2016, Apr 7). *Industry 4.0 and Singapore manufacturing*. Retrieved from Future Economy Council: <https://www.gov.sg/microsites/future-economy/press-room/news/content/industry-4-0-and-singapore-manufacturing>
71. CEA. (2018, Mar 26). *Singapore EDB funds 300 companies to assess Industry 4.0 readiness*. Retrieved from Control Engineer Asia: <https://www.ceasiamag.com/2018/03/singapore-edb-funds-300-companies-ases-industry-4-0-readiness/>
72. Waslo, R., Lewis, T., Hajj, R., & Carton, R. (2017). *Industry 4.0 and cybersecurity: Managing Risk in an Age of Connected Production*. Deloitte University Press. Retrieved from Deloitte University Press



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# THE PERSISTENCE OF VIOLENCE IN THE CYBER AGE

By MAJ Jeffrey Ng Zhaohong

## ABSTRACT

According to the author, with the advance of technology, cyber space has become the new battleground for war. It has provided huge opportunities for many countries to further their political agendas without resorting to violent conflicts. In fact, similar to the threat of nuclear destruction, cyber attacks' threat of widespread devastation can deter and compel against violent escalations. Furthermore, cyber space's high cost-effectiveness and difficulty in attribution provide a viable non-violent avenue to achieve political gains. Besides manipulating rational calculations, cyber information operations can subvert people's passions and soften the psychological battlefield, thereby reducing the violence involved in achieving one's political goals. However, the author highlights that historical examples have shown that in a clash for survival and critical interests, man will exhaust all means, including physical violence and destruction, to exploit vulnerabilities in all dimensions to preserve his interests. He concludes that violence will continue to persist as part of the nature of war.

Keywords: *Cyber, Passion, Violence, Threat, Manipulate*

With the dawn of the cyber age, many established militaries and thinkers have pondered the implications of cyber operations for both the nature and character of war.<sup>1</sup> Clausewitz defined war as serving political goals, and as a 'paradoxical trinity' comprising violence, chance and rationality.<sup>2</sup> An elimination of any of the three elements would indicate a fundamental shift in the nature of war. On the other hand, the character of war can vary according to the interactive relationship between the three elements. Rationality, associated with political leadership, dictates the boundaries and direction for military strategies. The execution of these strategies then involve chance and probability. Violence and its accompanying passions influence the balance between chance and rationality according to the stakes involved—the higher the stakes, the more likely that passions will favor chance over rationality and push the character of war to violent extremes. Conversely, limited political aims may favor rationality over chance to minimise the use of violence. With cyber space touted as a war-fighting dimension, the time has come to contemplate if cyber operations have truly augured a revolution by eliminating violence from the trinity of war. While the character of war may become less violent as states exploit cyber space to

pursue political gains through the manipulation of rationality and passions, violence will continue to persist in clashes of high political stakes as effective cyber countermeasures and strong passions will ultimately force a resolution through physical violence.

Through its threat of widespread destruction and disruption, cyber operations are similar to nuclear weapons in manipulating rational cost-benefit-risk calculations and creating deterrence against violent conflicts. According to Schelling, the threat of large scale destruction is more effective than its actual use.<sup>3</sup> Schelling further explained that the mere possession of nuclear weapons, coupled with a credible reputation for using them, is sufficient to deter violent escalation of political competition.<sup>4</sup> In addition, the threat of mutual annihilation allows nuclear states to manipulate shared risks, using brinkmanship to compel each other to back down from his political position.<sup>5</sup> This was seen in the Cuban Missile Crisis when the Union of Soviet Socialist Republics (USSR) was compelled to de-escalate and withdraw its missiles from Cuba given that the anticipated cost of nuclear strikes on Moscow dwarfed the limited political gains in a tit-for-tat strategy against the United States' (US) deployment of ballistic missiles in Turkey and Italy.<sup>6</sup>



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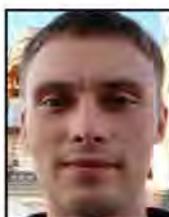
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Pavel Vyacheslavovich Yershov

### DETAILS

On July 13, 2018, a federal grand jury sitting in the District of Columbia returned an indictment against 12 Russian military intelligence officers for their alleged roles in interfering with the 2016 United States (U.S.) elections. The indictment charges 11 defendants, Boris Alekseyevich Antonov, Dmitriy Sergeyevech Badin, Nikolay Yuryevich Kozachek, Aleksey Viktorovich Lukashev, Artem Andreyevich Malyshev, Sergey Aleksandrovich Morgachev, Aleksandr Vladimirovich Osadchuk, Aleksey Aleksandrovich Potemkin, Ivan Sergeyevech Yermakov, Pavel Vyacheslavovich Yershov, and Viktor Borisovich Netyksho, with a computer hacking conspiracy involving gaining unauthorized access into the computers of U.S. persons and entities involved in the 2016 U.S. presidential election, stealing documents from those computers, and staging releases of the stolen documents to interfere with the 2016 U.S. presidential election. The indictment also charges these defendants with aggravated identity theft, false registration of a domain name, and conspiracy to commit money laundering. Two defendants, Aleksandr Vladimirovich Osadchuk and Anatoliy Sergeyevech Kovalev, are charged with a separate conspiracy to commit computer crimes, relating to hacking into the computers of U.S. persons and entities responsible for the administration of 2016 U.S. elections, such as state boards of elections, secretaries of state, and U.S. companies that supplied software and other technology related to the administration of U.S. elections. The United States District Court for the District of Columbia in Washington, D.C. issued a federal arrest warrant for each of these defendants upon the grand jury's return of the indictment.

**THESE INDIVIDUALS SHOULD BE CONSIDERED ARMED AND DANGEROUS, AN INTERNATIONAL FLIGHT RISK, AND AN ESCAPE RISK**

**If you have any information concerning this case, please contact your local FBI office, or the nearest American Embassy or Consulate.**

[www.fbi.gov](http://www.fbi.gov)

Federal Bureau of Investigation

*Russians hackers wanted by the Federal Bureau of Investigation (FBI) for interference during the 2016 US Presidential Elections.*

In a similar vein of manipulating rational cost-benefit calculations, cyber operations can deter violent escalations by its threat of widespread disruption while providing an attractive non-violent alternative for furthering one's goals. Similar to a nuclear threat, cyber operations can wreak large-scale disruption through coordinated and simultaneous targeting of critical

computer networks supporting key national infrastructure such as energy, water supply, electrical grid, communication nodes and financial institutions.<sup>7</sup> The ability to shut down normal functions of all instruments of power can exert the same deterrence effects as the threat of a nuclear attack. In addition, the magnitude and severity of attacks can be more rapidly

scaled up than traditional military capabilities. Hence, a demonstration of limited use, such as Russia's involvement in the Distributed Denial of Service (DDoS) attacks on Estonia and Georgia, is sufficient to build up the credibility and reputation needed to exert deterrent effects.<sup>8</sup> Similar to Brodie's advocacy of nuclear weapons as a highly cost-effective capability, cyber operations can yield great political pay-offs with little investment in resources.<sup>9</sup> This was demonstrated when Russian 'patriotic hackers' and 'hacktivists' ran primitive cyber attack codes on their home computers to attack Georgian websites, resulting in widespread denial-of-service in Georgia's public and private sectors, including Georgia's largest commercial bank.<sup>10</sup> Besides, difficulty in attribution provides insurance against violent retaliation due to the lack of legitimacy and timeliness for reprisals. Hence, cyber operations' threat of widespread damage provides deterrence against violent escalation, while its high cost-effectiveness and low risk of attribution provide an attractive avenue for rational actors to further their political goals without resorting to violence.

Besides manipulating a government's rational calculations, cyberspace, through its widespread usage and ease of access, provides opportunities for insidious undermining and subversion of public opinions to reduce moral resistance. In accordance with Clausewitz's recognition of 'the spirit and other moral

qualities' in influencing the outcome of war, military strategists have often contemplated undermining strategic leadership and the people's collective will to reduce moral resistance and facilitate swift victories.<sup>11</sup> For example, Fuller saw potential in the tanks' speed and mobility to strike directly and unexpectedly at the Army's leadership to 'render inoperative the command of the enemy's forces,' thereby reducing moral and physical resistance in subsequent battles through strategic paralysis.<sup>12</sup> Similarly, Douhet advocated capitalising on airpower's speed and reach to conduct strategic bombing on civilian population centres to break the public's will and cause them to 'rise up and demand an end to the war.'<sup>13</sup>

**The ability to shut down normal functions of all instruments of power can exert the same deterrence effects as the threat of a nuclear attack.**

The simultaneity, speed and penetration of cyber operations far exceed that of tanks and airpower. Besides, cyber information warfare can undermine leadership and the people's will without incurring high costs and violence, and hence provides an attractive



*Pro-Russian encampment outside the Trade Unions House, Ukraine, 6<sup>th</sup> April, 2014.*

avenue for state and non-state actors to insidiously manipulate its target audience's perceptions. For example, Russia conducted a comprehensive cyber information campaign to achieve the annexation of Crimea with minimal violence.<sup>14</sup> Through the use of fake social media posts and fake news sites, coupled with cyber attacks disrupting communications and government functions in Crimea, Russia successfully orchestrated a 'blizzard of denial, deception and disinformation' to paralyse the Ukrainian government while creating the perception of an indigenous Crimean grassroots movement to join the Russian Federation.<sup>15</sup> Hence, through its unprecedented speed, reach and parallel effects, cyber information operations can be more effective than tanks and airplanes in breaking its adversary's collective will while stoking its people's nationalistic feelings to bolster its moral spirits. By manipulating the people's passions, states can shape the psychological battlefield to their advantage and achieve political goals with much less violence and bloodshed.

Despite the allure of cyberspace as a beacon of hope for eliminating violence, clashes involving high stakes and strong passions will ultimately resort to violence for resolution. As Clausewitz explained, a war's outcome is transitory and the defeated will soon adapt and exploit vulnerabilities to restore the equilibrium.<sup>16</sup> Hence, ingenious development of effective

countermeasures and strategies will eventually erode the competitive edge afforded by technological advances. This is especially so when the consequences of losing are deemed unacceptable and strong passions demand resistance at all costs, as demonstrated in Japan's willingness to adopt kamikaze tactics and field manned torpedoes against the American aircraft carriers in a last ditch effort to prevent a homeland attack.<sup>17</sup> In World War I (WWI), the water-cooled machine guns were highly effective in overwhelming advancing armies, but were soon pounded by accurate indirect artillery fires.<sup>18</sup> At sea, German ocean-going submarines effectively challenged British naval surface dominance, but were countered with depth charges and sonar detection.<sup>19</sup> In the air, British's fast and agile interceptor monoplanes and radar interception techniques successfully thwarted Germany's bombing raids.<sup>20</sup> In addition, as witnessed in the Vietnam War, materially inferior forces such as the Viet Cong could adopt asymmetric strategies and exploit vulnerabilities to defeat the technologically superior US forces.<sup>21</sup>

**Ingenious development of effective countermeasures and strategies will eventually erode the competitive edge afforded by technological advances.**



Donald Trump tweets on twitter suggesting that he won the election. The tweets are marked as disputed.

**Cyber information operations can subvert the people's passions and soften the psychological battlefield, thereby reducing the violence involved in achieving one's political goals.**

Therefore, it is expected that states will pursue effective countermeasures and strategies to erode the advantages of cyber offensive capabilities. Recognising the strategic threat of cyber attacks, the US has stated its focus in accelerating cyber capability development to counter malicious activities and strengthen the cyber-security of key government networks through partnership with private sector and allies.<sup>22</sup> To defend against subversive social media posts and fake news, governments stepped up social awareness on the threat of malicious cyber misinformation through high visibility campaigns, such as the publicised grilling sessions of Facebook and Twitter for their failings in regulating the spread of mistruths.<sup>23</sup> In addition, in clashes concerning national survival and sacrosanct interests, cyber propaganda can quickly inflame nationalistic sentiments, leading to a stronger push for the employment of all instruments beyond cyberspace, including physical military capabilities. Hence, even in

the cyber age, as long as stakes are high and passions are stoked, violence will still erupt.

## **CONCLUSION**

Through its widespread use, cyberspace has become an integral dimension of most of the world's functions and this created huge opportunities for furthering political agendas without resorting to violent conflicts. Similar to the threat of nuclear destruction, cyber attacks' threat of widespread devastation can deter and compel against violent escalations. In addition, cyberspace's high cost-effectiveness and difficulty in attribution provide a viable non-violent avenue to achieve political gains. Besides manipulating rational calculations, cyber information operations can subvert the people's passions and soften the psychological battlefield, thereby reducing the violence involved in achieving one's political goals. However, historical examples show that in a clash for survival and critical interests, man will exhaust all means, including physical violence and destruction, to exploit vulnerabilities in all dimensions to preserve his interests. Realistically then, violence will continue to persist as part of the nature of war. Beyond academic discussion, taking a Hobbesian view on the persistence of violence compels the state and its people to continue their support for a credible military that is ready to win the nation's wars and secure the peace in both physical and cyber dimensions with the dawn of the cyber age.

## ENDNOTES

1. Thomas Rid, "Cyber War Will Not Take Place," *Journal of Strategic Studies* 35, no.1 (2012): 5-6, <http://dx.doi.org/10.1080/01402390.2011.608939>.
2. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 87-89.
3. Thomas C. Schelling, *Arms and Influence*, (New Haven, CT: Yale University, 2008), 10.
4. *Ibid.*, 36-38.
5. *Ibid.*, 99-105.
6. Schelling, *Arms and Influence*, 40-41.
7. Matthew R. Schwonek, "The Cyber Age and Russian Information Warfare" (lecture, Air Command and Staff College, Maxwell AFB, AL, 25 September, 2018), 10.
8. Thomas Rid, "Cyber War Will Not Take Place," 11-14.
9. Bernard Brodie, "The Weapon: War in the Atomic Age," in Bernard Brodie et al., eds., *The Absolute Weapon: Atomic Power and World Order* (Book draft, 1946), 33.
10. Thomas Rid, "Cyber War Will Not Take Place," 25.
11. Clausewitz, *On War*, 184.
12. John Frederick C. Fuller, "Strategic Paralysis as the Objective of Decisive Attack," in *On Future Warfare* (London: Sifton Praed, 1928), 93.
13. Giulio Douhet, *The Command of the Air* (Washington DC: U.S. Government Printing Office, 1983), 58.
14. Schwonek, "The Cyber Age and Russian Information Warfare," 18-19.
15. *Ibid.*
16. Clausewitz, *On War*, 79-80.
17. Lynn Vincent and Sara Vladic, *Indianapolis* (New York, NY: Simon & Schuster, 2018).
18. James D. Campbell, "World War I and the Evolution of Combined Arms Maneuver Warfare" (lecture, Air Command and Staff College, Maxwell AFB, AL, 28 August 2018), 25.
19. Michael Howard, *War in Euro History* (Oxford: Oxford University Press, 2009), 125. John T. LaSaine, "The Struggles for Mastery of the Sea, 1898-1918" (lecture, Air Command and Staff College, Maxwell AFB, AL, 7 September, 2018).
20. Howard, *War in Euro History*, 130.
21. Ivan Arreguin-Toft, "How the Weak Win Wars: A Theory of Asymmetric Conflict," *International Security*, Vol. 26, No. 1 (Summer 2001), 93-128.
22. Department of Defense, "Department of Defense Cyber Strategy 2018 Summary," Department of Defense, accessed 28 September 2018, <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.
23. Tim Mak, "Senate Committee vents about hijacking of Big Tech for Information War," NPR, accessed 1 October 2018, <https://www.npr.org/2018/09/05/644607908/facebook-twitter-heavyies-set-to-appear-at-senate-hearing-google-may-be-mia>.



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# HOW SINGAPORE AND THE SAF CAN GET READY FOR THE ERA OF SWARM UAVS

By CPT Daryn Koh Wei Ren

## ABSTRACT

The author believes that Swarm Unmanned Aerial Vehicles (UAVs) have the potential to pose a real threat when used for malicious purposes, citing examples to prove the capabilities of such technology. The author feels that Singapore may be susceptible to attacks from Swarm UAVs due to its small geographical size. He also highlights that swarm UAVs can continue with the mission even with the loss of a sizeable portion of members as it is possible for a large enough swarm to overwhelm a small country's air defence system. In this essay, the author proceeds to discuss Current Counter Swarm UAV Technologies as well as Current Measures in the Singapore Armed Forces. He also briefly discusses possible solutions to Swarm UAVs, namely, Detering Rogue Drone Operators and Disrupting Swarm UAVs. The author concludes that there is no one size fit all solution to the threat of swarm UAVs and highlights that continuous efforts and resources have to be committed in order to deal with such a threat.

Keywords: *Autonomously, Synergistic, Overwhelm, Disruption, Deterrence*

## INTRODUCTION

In January 2018, a group of 13 drones attacked Russia's main outposts in Syria, the Khmeimim air base and the naval base in Tartus.<sup>1</sup> In August that same year, 'two drones detonated explosives near Avenida Bolivar, Caracas, where Nicolas Maduro, the President of Venezuela, was addressing the Bolivarian National Guard.'<sup>2</sup> Though the amount of drones was not massive in both incidents, these events demonstrated the potential for more mass attacks on key installations and key personnel. Swarm capabilities were also demonstrated in 2017 when 300 drones assembled into an American Flag in Lady Gaga's Super Bowl halftime show, while Chinese company eHang claimed the record for the biggest swarm in a New Year show where 1,000 drones formed a map of China and the Chinese character '福' in Guangzhou.<sup>3</sup>

Due to the ability to share information and make autonomous decisions, swarm UAVs have the potential to revolutionise conflicts and the way threats are perceived in the future. This technology, coupled with their ability to overwhelm a target in large numbers and the ease of access due to a low cost of production,

presents a very real danger to key installations if used in the wrong hands. Swarm UAVs can fly around to gather intelligence, overrun tank battalions and might even sweep in to attack a warship.<sup>4</sup> Hence, it is critical that a study be conducted to determine the current and future capabilities of swarm UAVs, as well as the measures that Singapore and the SAF can take to mitigate this potential threat in both peacetime and in war.

## CHARACTERISTICS OF SWARM UAVs

Swarm UAVs come in various shapes and sizes and they mainly involve mini or micro class UAVs.<sup>5</sup> Mini UAVs have wingspans up to 3m and weigh up to 20kg, while micro UAVs are shorter than 15cm in any dimensions and weigh less than 500g.<sup>6</sup> Current examples of smaller UAVs include the Gremlins, micro drones designed to drop from planes to perform reconnaissance, currently being developed by the United States(US) Defence Advanced Research Projects Agency (DARPA).<sup>7</sup> Meanwhile, bigger UAVs such as the XQ-58 Valkyrie drone, measuring almost 9m in length, are able to carry precision-guided bombs and surveillance equipment.<sup>8</sup>

Swarm UAVs pose a serious threat due to their ability to co-ordinate autonomously, thereby increasing the possible range and complexities of mission. These missions can include swarming enemy sensors and spreading out over large areas for reconnaissance missions.<sup>9</sup> As swarm UAVs can communicate with one another and adjust to real time information, their decision-making process is significantly quicker than a group of individually controlled drones.<sup>10</sup> An example will be how camera and sensor equipped UAVs can share such information within the swarm, allowing the swarm to manoeuvre around obstacles and to strike targets effectively.<sup>11</sup> This presents a step up in capability as compared to traditional UAV operations, which require a pilot and conventional communication procedures. A test conducted by DARPA in 2018 showed how six live and 24 virtual drones were able to 'autonomously locate and engage both pre-planned and pop-up targets', even under enemy jamming conditions.<sup>12</sup> Furthermore, by utilising Artificial Intelligence (AI) technology, swarm UAVs will be able to self-organise and can potentially have a synergistic effect, allowing them to act as an integrated unit to strike as one.<sup>13</sup> This technology will enable the use of combined arms tactics. Some UAVs in the swarm can be armed with chemical or biological payloads while others carry conventional weapons, allowing much closer integration between these weapons than would be currently possible.<sup>14</sup>

**Swarm UAVs pose a serious threat due to their ability to co-ordinate autonomously, thereby increasing the possible range and complexities of mission.**

Swarm UAVs are also dangerous due to their ability to overwhelm an enemy in large numbers. The sheer numbers in a swarm provide a greater chance of mission success as the rest of the swarm can complete the mission even if one or a few members of the swarm is destroyed in an operation. The fact that three out of the 13 drones that attacked Russian bases in 2018 managed to breach the base perimeter showed how

swarm UAVs could overwhelm an adversary's defences and the potential damage that a co-ordinated swarm UAV attack could cause.<sup>15</sup>

As swarm UAVs tend to be low in cost, they are expendable and can be easily purchased by groups with malicious intent. Due to the low cost, adversaries may choose to use them for suicide missions to overwhelm a target. Defending against such threats will significantly be more difficult due to the high cost of kinetic weapons, as compared to the low cost incurred and the zero risk of fatality to the adversary. While the drones used by eHang in the New Year Show cost USD\$1,500, current surface to air missiles, such as the FIM-92 Stinger, cost USD\$38,000.<sup>16</sup> Furthermore, though the drones used in the attack on Russian bases were primitive and homemade, they required both kinetic and non-kinetic means in the form of electronic warfare units and Pantsir-S anti-aircraft missiles to take them down.<sup>17</sup> This cost disparity between kinetic measures and current swarm UAV technologies calls for greater research to be done in more cost-effective measures to deal with swarm UAVs.



*A RSAF soldier holding a Jammer Gun, which uses signals to jam the control signals of a drone.*

## **DANGERS OF SWARM UAVs TO SINGAPORE**

Swarm UAVs can pose a dangerous threat to Singapore. Considering how swarm UAVs can lose dozens of members and still continue with the mission, a large enough swarm could possibly overwhelm the conventional air defence system. Singapore is also particularly susceptible to swarm UAV attacks due to the ease of deployment in the country. Singapore is a

congested city with many high rise buildings, providing potential launching and hiding spots for malicious actors. As swarm UAVs can be deployed with a range of 50km, malicious actors can hide within built up areas, therefore posing a challenge for authorities to apprehend them.<sup>18</sup> Furthermore, as Singapore's critical infrastructure and airfields are located close to the populace, Singapore presents itself as an attractive target to potential adversaries.<sup>19</sup>

The interest of regional terrorist groups in swarm UAV technologies also poses a potential threat to Singapore. Southeast Asia has been dubbed as the second front for the Islamic State (ISIS). With ISIS using off-the-shelf drones since 2014, it is only a matter of time before swarm UAVs become part of their arsenal in the region.

It is hence clear that swarm UAVs have the potential to cause damage to Singapore's key installations. The threat of a small number of UAVs was already made clear when several drones intruded into restricted airspace around Singapore's Changi Airport and disrupted its operation for about 10 hours from 18<sup>th</sup> – 19<sup>th</sup> June, 2019.<sup>20</sup> Hence, the potential damage that a swarm of UAVs can cause to Changi Airport or any key installation would definitely be on a much larger scale. As Singapore's economy is heavily dependent on important infrastructure such as Changi Airport, Jurong Industrial Estate and the Central Business District, any mass attack on such key installations would have drastic impact on Singapore and affect confidence in Singapore's defence capabilities.

### CURRENT COUNTER SWARM UAV TECHNOLOGIES

In June 2019, the US revealed a 'high powered microwave (HPM) system, the Tactical High Power Microwave Operational Responder (THOR)' to protect its key installations against swarm UAVs.<sup>21</sup> As it is stored in a shipping container, it can be deployed almost anywhere and set up in a few hours, using 'short bursts of high-powered microwaves' to disable swarm UAVs.<sup>22</sup> While the US utilises THOR against short-range targets, it uses the 'Counter-Electric High-Power Microwave Extended-Range Air Base Air Defence (CHIMERA)' for swarm UAVs at medium to long ranges.<sup>23</sup> Both systems

utilise a microwave system, whose broad firing arc are able to take down multiple UAVs at once.<sup>24</sup> Furthermore, as these waves have no negative effect on humans or wildfire, these systems would be able to sweep the sky with microwave radiation, affecting everything in its path.<sup>25</sup>

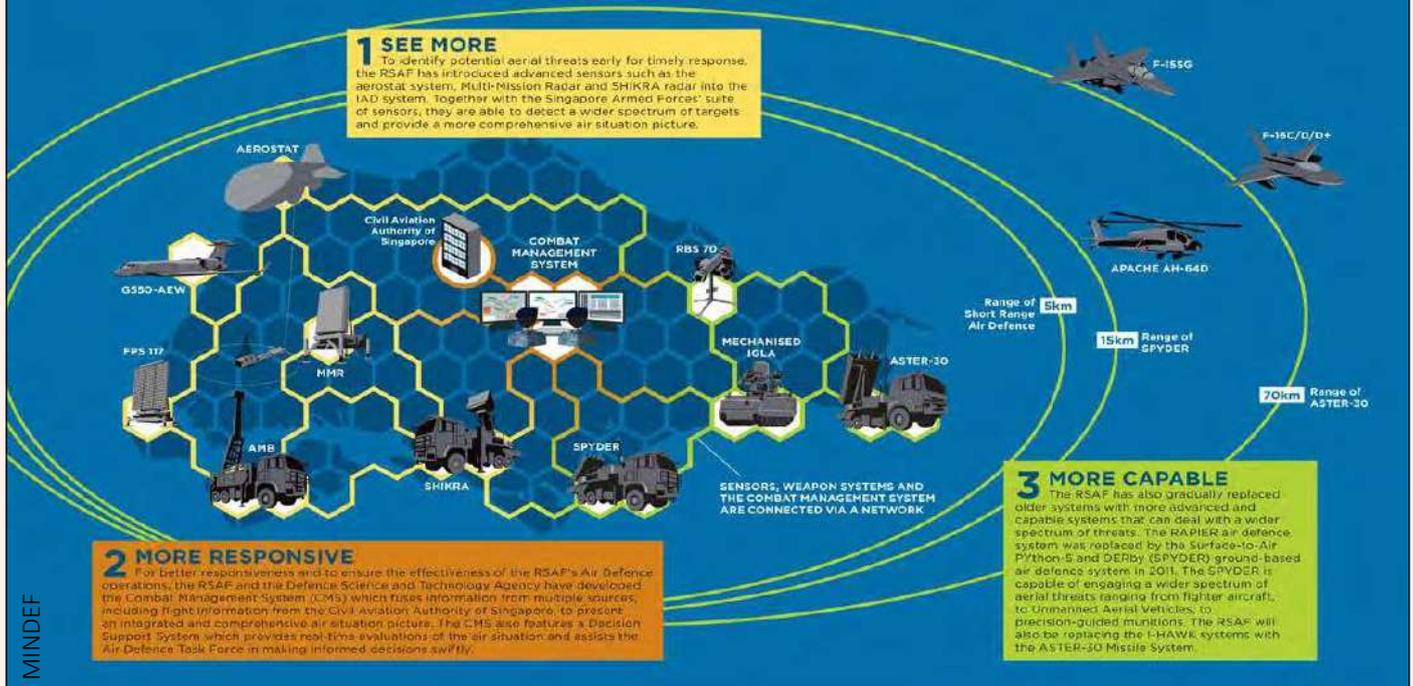
**Both the HDM and the THOR systems utilise a microwave system, whose broad firing arc are able to take down multiple UAVs at once. As these waves have no negative effect on humans or wildfire, these systems would be able to sweep the sky with microwave radiation, affecting everything in its path.**

Russia has recognised the threat posed by advancements into swarm technology, triggering them to invest in counter swarm UAV technologies. One concept undergoing testing is the 'Repellent' system, designed to 'detect and disrupt enemy Intelligence, Surveillance & Reconnaissance (ISR) UAVs and to suppress their communications by powerful obstruction or directional interference, as well as disabling their controls.'<sup>26</sup> The system comprises 'two surveillance systems and two jamming systems with sensors and emitters mounted on elevator masts to enable simultaneous engagements of multiple targets.'<sup>27</sup> This technology is envisioned to protect not only military installations, but also troops on the ground.<sup>28</sup> Additionally, Russia has other counter UAV assets, such as the LEER-2 system, an electronic warfare (EW) system mounted on Tiger Light armoured vehicles, which uses dedicated jamming systems to disable UAVs.<sup>29</sup>

The growing threat of Iranian interest in armed UAVs has also pushed Israel to develop swarm UAV countermeasures.<sup>30</sup> Israel Aerospace Industries (IAI) has developed a '3D radar and Electro-Optical sensors and Electronic Attack jamming system' to combat this

# Enhanced Island Air Defence

The Republic of Singapore Air Force (RSAF)'s enhanced Island Air Defence (IAD) system is a multi-layered networked island-wide system that brings together sensors, weapon systems, command & control elements and decision-making tools. The enhanced IAD is able to see more, be more responsive and is more capable in dealing with a wider spectrum of threats.



The RSAF Enhanced Island Air Defence Model.

threat.<sup>31</sup> These 3D radars can visually identify UAVs at a maximum range of 20km while the jamming system can cause the UAV to return to its point of origin or to shut down and make a crash landing.<sup>32</sup>

## POSSIBLE SOLUTIONS TO SWARM UAVs

Due to the versatility of swarm UAVs and its potential impact to multiple industries, it poses a problem from peace to war. Threats could range from a nuisance caused by hobbyists to targeted attacks by state actors or terrorist groups. Hence, mitigating measures should start from peace and involve a Whole of Government (WoG) approach. However, while the rule of law would act as an effective deterrence against hobbyists, stronger measures such as the use of both kinetic and non-kinetic means would be needed against organised attacks by terrorists and state actors.

In this essay, the author proposes a two prong approach, deterrence and disruption, to effectively deal with the threat of swarm UAVs. The use of deterrence will be aimed towards hobbyists and prevent would-be malicious drone operators from carrying out any disruptive activity using swarm UAV technologies. A WoG approach will be required for deterrence measures to be more effective. This concerted

government effort will show a united front against the misuse of swarm UAV technologies and send a strong deterrent message towards potential malicious actors. These measures, including the rule of law and education, will aim to dissuade hobbyists and the common man from utilising swarm UAVs. However, in the event of organised attacks or the failure of deterrence, disruption measures may be used to take down swarm UAVs to protect Singapore's key installation and personnel.

## Deter Rogue Drone Operators

The rule of law is an essential deterrence measure to prevent the possibility of a swarm UAV attack. The government, including the Ministry of Law and Ministry of Trade and Industry, could consider setting legislature on the import and sale of swarm UAV related technologies in Singapore. This will act as a first road block and prevent such technologies from reaching the hands of local actors and malicious groups within Singapore. Furthermore, stronger deterrents could be implemented for rogue drone users. The current sentence for first-time errant drone operators is a fine of up to \$20,000. Repeat offenders can be jailed for up to 15 months and fined up to \$40,000. In comparison,

the penalties are unlimited fines and a five-year sentence in the United Kingdom and a US\$250,000 fine and a three-year sentence in the US.<sup>33</sup>

Regional treaties and agreements controlling the import, trade and sale of swarm UAV related technologies in the region would also act as an additional layer of deterrence. This can be done through official forums such as the Association of Southeast Asia Nations (ASEAN) or by pursuing bilateral understanding and partnerships with regional countries. Having such agreements would show a strong regional resolve against swarm UAVs, thereby dissuading potential malicious actors from utilising such technologies. On the international front, Singapore can also work with other international organisations and key states at the forefront of counter swarm UAV technologies, such as the US, to establish international norms on the use of swarm UAVs.

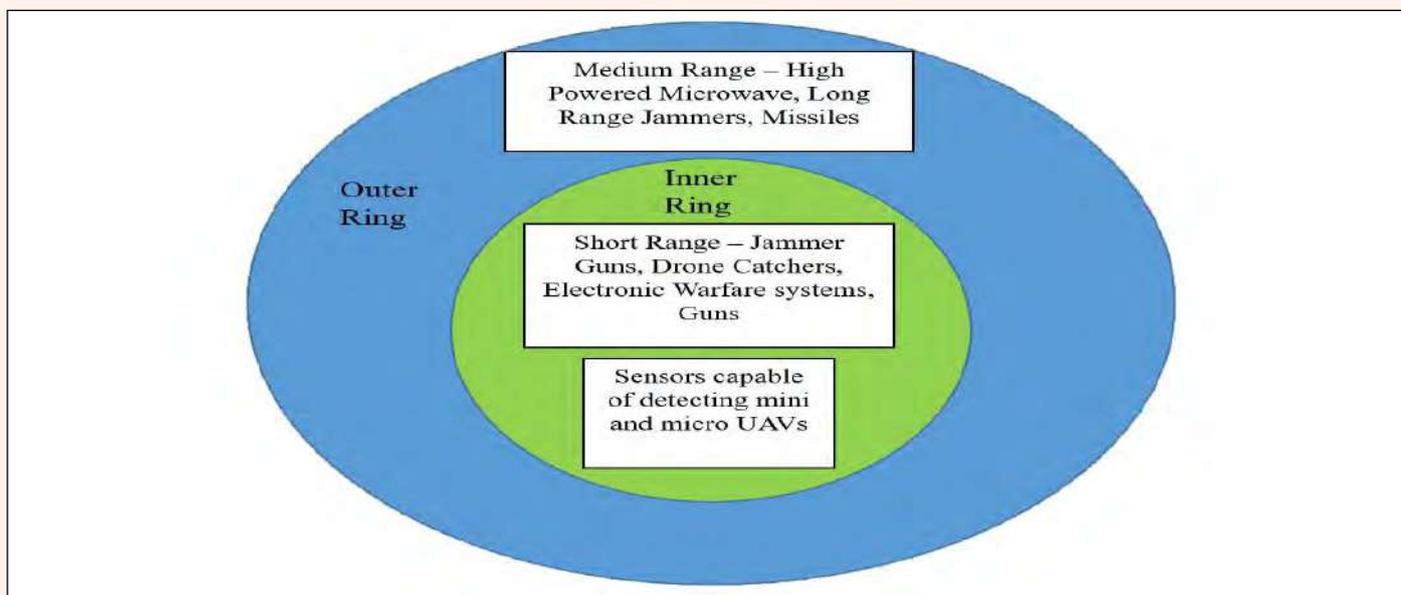
**Should deterrence fail, detection and disruption measures utilising both kinetic and non-kinetic measures would have to be used against swarm UAVs to prevent them from affecting key installations and to protect Singapore.**

Other than implementing the rule of law, education can also be employed as a form of deterrence. The Singapore government could hold workshops for drone enthusiasts, such as the Multirotor Association of Singapore, to educate them on the proper usage of drones in Singapore and the consequences for the misuse of such technologies. Pamphlets detailing drone regulations and offences in Singapore can also be placed in drone retail shops to ensure that relevant information is relayed to potential drone users.

### Disrupting Swarm UAVs

Should deterrence fail, detection and disruption measures utilising both kinetic and non-kinetic measures would have to be used against swarm UAVs to prevent them from affecting key installations and to protect Singapore. As there are different considerations under peacetime and wartime, these measures would differ in both scenarios.

Peacetime. There are a few challenges in taking down swarm UAVs in peace-time. Firstly, as swarm UAVs are versatile in their missions, they might affect multiple industries and thereby require effective intra-government co-ordination to detect and disrupt malicious swarm UAV operations. The Singapore government, like most, is mostly structured into ‘vertical silos’, with information not easily shared.<sup>34</sup> Hence, a change may be required for the government and institutions to be more networked, allowing a more



Proposed Counter Swarm UAV multi layered defence.

‘spontaneous horizontal flow of information.’<sup>35</sup> A suggestion would be for the National Security Co-ordination Centre (NSCC) to be the co-ordinating agency for relevant ministries, such as the Ministry of Home Affairs and the Ministry of Defence, to facilitate detection and disruption of swarm UAV attacks during peacetime. To better prepare for a potential attack, the NSCC could ensure proper delegation of tasks in the event of a swarm UAV attack and set up regular Tabletop Exercises (TTX) to run through potential situations.

Secondly, it may be difficult to have an immediate assessment of the operator’s intent upon the detection of swarm UAV operations. To prevent a potential mistake, shooting down swarm UAVs with kinetic projectiles would not be ideal and non-kinetic means would be the preferred measure against such threats in peacetime. While it is important to apprehend swarm UAV operators with malicious intent, the primary objective during peacetime would be the immediate disruption of swarm UAV activities near key installations. Investigations should be carried out after the threat is neutralised to apprehend rogue operators and to serve as a deterrence against future threats.

Thirdly, counter swarm UAV operations in peacetime should take populace and key installations into account. Kinetic means would hence not be ideal due to the possible collateral damage. A suggestion would be for Singapore to adapt Israel’s ‘detect and disrupt’ model, using 3D sensors and Electric Jamming equipment primarily to deal with swarm UAVs. While high-powered microwaves (HPM) are effective, their wide range could cause damage to essential industries, such as telecommunications. They should therefore only be used against autonomous swarm UAVs if jamming equipment fails against them.

As most of the counter swarm UAV technologies available are more suited for wartime purposes, the Singapore government could consider working with private companies to produce innovative solutions to the threat of swarm UAVs in peacetime.

Wartime The SAF would be the main co-ordinating agency in the event of war or organised swarm UAV attacks by terrorists and state actors. In

order to do this, the SAF may have to revise and improve its internal concepts of dealing with UAVs. Having a multi-layered defence system, like the current Enhanced Island Air Defence, would enable the SAF to effectively deal with swarm UAVs. Due to their numbers, swarm UAVs require multiple rings of defences and both kinetic and non-kinetic means to combat them. A high-powered microwave (HPM) system and missiles could be forward-deployed as the first line of defence (outer ring) while state of the art jammers, drone catchers and guns could be placed behind to deal with any surviving UAVs (inner ring).<sup>36</sup> These devices would have to be supported by sensors and radars tuned to detect small UAVs, akin to the ‘Repellent’ system in Russia and 3D radar and EO Sensors in Israel. A similar concept proved effective in the January 2018 mass UAV attack on Russian bases when electronic means were able to defeat six of the drones, while the remaining seven which broke through the perimeter were shot down by Pantsir-S1 Short Range Gun/Missile air defence systems.<sup>37</sup>

### Setting-Up of an entity

As swarm UAV technologies are evolving at a rapid rate, the SAF may have to modify its concept of operations to better deal with such a threat. While the SAF leadership has to study and research continuously on swarm UAV technologies before operationalising any platform or equipment to deal with swarm UAVs, a faster process could be implemented to deal with the rapidly evolving threat. Due to the array of complex operations autonomous swarm UAVs can undertake, the current method of simply arming existing units with new equipment may not be enough. Similar to how MINDEF set up a cyber-command to deal with upcoming cyber threats, a new entity could be set up to combat swarm UAVs and AI-related threats.<sup>38</sup> Instead of developing the associated counter swarm UAV Concept of Operations (CONOPS) and measures only after a thorough understanding of swarm UAV technologies, this entity could adopt an incremental model approach to tackle the threat progressively and continuously. Using this approach, this entity could swiftly determine and experiment with an initial CONOPS and continue to

evaluate, adapt or redevelop it as new threats appear. This entity could also be empowered with the latitude to experiment with technologies and force structure, thereby increasing the SAF's pace of innovation in counter swarm UAV technologies. Additionally, this entity could be empowered to bypass any bureaucratic red tape, allowing for a quicker response cycle and thereby enabling SAF to keep up with the rapidly evolving swarm UAV threat. A suggestion would be for this new entity to work with the Defence Science and Technology Agency (DSTA) and DSO National Laboratories to research and experiment on emerging technologies, such as the HPM utilised in the US.

Though restructuring communication processes and researching on counter swarm UAV technologies is a good start, these solutions just scratch the surface and

more efforts may have to be dedicated in order to keep up with the rapidly evolving swarm UAV technologies.

## CONCLUSION

The Japanese success at Pearl Harbour was contingent on catching the Americans totally off guard.<sup>39</sup> If Singapore wishes to prevent a similar situation from happening with regards to the potential threat from swarm UAVs, it may have to devote considerable resources to better warning systems, better fighting concepts, and producing both kinetic and non-kinetic means to deal with such threats. As there is no one size fit all solution to the threat of swarm UAVs, continuous efforts and resources may have to be committed in order to have a fighting chance against such a threat.

## BIBLIOGRAPHY

Cole, Sally. "Layered Counter-drone Approaches Are Essential for Deployed U.S. Forces." *Military Embedded Systems*. April 20, 2018. <http://mil-embedded.com/articles/layered-u-s-forces/>.

"Competition Document: Countering Drones - Finding and Neutralising Small UAS Threats." GOV.UK. <https://www.gov.uk/government/publications/countering-drones-finding-and-neutralising-small-uas-threats/competition-document-countering-drones-finding-and-neutralising-small-uas-threats>.

Chua, MAJ Jerry. "Unmanned Aerial Vehicles - A Clear and Present Danger, and What We Can Do about Them." *POINTER* 44, no. 4 (2018): 60-69.

"Drones of Mass Destruction: Drone Swarms and the Future of Nuclear, Chemical, and Biological Weapons." *War on the Rocks*. February 20, 2019. <https://warontherocks.com/2019/02/drones-of-mass-destruction-drone-swarms-and-the-future-of-nuclear-chemical-and-biological-weapons/>.

Hambling, David. "Future - The next Era of Drones Will Be Defined by 'swarms'." BBC. April 27, 2017. Accessed August 19, 2019. <http://www.bbc.com/future/story/20170425-were-entering-the-next-era-of-drones>.

"Israel Gets Ready to Counter UAV Swarm Attacks." *DefenceWeb*. March 15, 2018. <https://www.defenceweb.co.za/joint/science-a-defence-technology/israel-gets-ready-to-counter-uav-swarm-attacks/>.

Jun, Khoe Wei. "RSAF's Anti-drone Technologies in Action This Weekend in Jurong East." *The Straits Times*. May 30, 2018. <https://www.straitstimes.com/singapore/rsafs-anti-drone-technologies-in-action-this-weekend-in-jurong-east>.

Koettl, Christoph, and Barbara Marcolini. "A Closer Look at the Drone Attack on Maduro in Venezuela." *The New York Times*. August 10, 2018. <https://www.nytimes.com/2018/08/10/world/americas/venezuela-video-analysis.html>.

Liptak, Andrew. "The US Air Force Has a New Weapon Called THOR That Can Take out Swarms of Drones." *The Verge*. June 21, 2019. <https://www.theverge.com/2019/6/21/18701267/us-air-force-thor-new-weapon-drone-swarms>.

"MINDEF Adds Two Cyber Expert Schemes, Cyber Defence School." *PIONEER - MINDEF Adds Two Cyber Expert Schemes, Cyber Defence School*. February 21, 2019. [https://www.mindef.gov.sg/web/portal/pioneer/article/regular-article-detail/technology/2019-Q1/20feb19\\_news](https://www.mindef.gov.sg/web/portal/pioneer/article/regular-article-detail/technology/2019-Q1/20feb19_news).

Mizokami, Kyle. "The U.S. Army Wants To Microwave Drones in Midair." *Popular Mechanics*. August 13, 2019. <https://www.popularmechanics.com/military/research/a28678829/microwave-drones-midair/>.

Mokhtar, Faris. "The Big Read: Battered in the Middle East, Islamic State Eyes Southeast Asia as next Terrorism Hotspot." *CNA*. July 25, 2019. <https://www.channelnewsasia.com/news/asia/islamic-state-terrorism-extremism-eyes-southeast-asia-11199586>.

McMullan, Thomas. "How Swarming Drones Will Change Warfare." *BBC News*. March 16, 2019. <https://www.bbc.com/news/technology-47555588>.

"Russian Forces in Syria Repelled Massive Drone Attack on Hmeimim and Tartus." *Defense Update*. January 09, 2018. [https://defense-update.com/20180108\\_uav\\_attack.html](https://defense-update.com/20180108_uav_attack.html).

"SAF Looks to Artificial Intelligence to Gain Punch." *TODAYonline*. October 29, 2016. <https://www.todayonline.com/singapore/saf-looks-artificial-intelligence-gain-punch>.

Snead, Jason, John-Michael Seibler, and David Inserra. "Establishing a Legal Framework for Counter-Drone Technologies." *The Heritage Foundation*, no. 3305 (April 16, 2018): 1-20.

Tan, Teck Boon. "CO18138: Portable Drone Jammers: An Assessment." *S. Rajaratnam School of International Studies*, August 17, 2018. <https://www.rsis.edu.sg/rsis-publication/rsis/co18138-portable-drone-jammers-an-assessment/>.

"Technology That Counters Drone Swarms." *Lockheed Martin*. <https://www.lockheedmartin.com/en-us/news/features/2016/webt-laser-swarms-drones.html>.

"The Future-of-Government Approach Is Important, but Not Easy to Execute." TODAYonline, 5 Apr. 2017, [www.todayonline.com/singapore/future-government-approach-important-not-easy-execute](http://www.todayonline.com/singapore/future-government-approach-important-not-easy-execute).

"The Navy and Marine Corps Need to Prepare for the Swarm of the Future." War on the Rocks. May 24, 2018. <https://warontherocks.com/2018/03/the-navy-and-marine-corps-must-plan-for-the-swarm-of-the-future/>.

"The Perfect Can Wait: Good Solutions to the 'Drone Swarm' Problem." War on the Rocks. August 13, 2018. <https://warontherocks.com/2018/08/the-perfect-can-wait-good-solutions-to-the-drone-swarm-problem/>.

"The Rise of the Drone Swarm." UK Defence Journal. February 15, 2019. <https://ukdefencejournal.org.uk/the-rise-of-the-drone-swarm/>.

Trevithick, Joseph. "Army Buys Small Suicide Drones To Break Up Hostile Swarms And Potentially More." The Drive. July 17, 2018. <https://www.thedrive.com/the-war-zone/22223/army-buys-small-suicide-drones-to-break-up-hostile-swarms-and-potentially-more>.

Tucker, Patrick. "The US Military's Drone Swarm Strategy Just Passed a Key Test." Defense One. November 21, 2018. <https://www.defenseone.com/technology/2018/11/us-militarys-drone-swarm-strategy-just-passed-key-test/153007/>.

"What Can Singapore Do to Counter Rogue Drones and Airport Incursions?" TODAYonline. June 24, 2019. <https://www.todayonline.com/commentary/what-can-singapore-do-counter-rogue-drones-and-airport-incursions>.

Zhang, Tian-Jie. "Unmanned Aerial Vehicle Formation Inspired by Bird Flocking and Foraging Behavior." *International Journal of Automation and Computing* 15, no. 4 (April 18, 2018): 402-16.

## ENDNOTES

1. Trevithick, Joseph. "Army Buys Small Suicide Drones To Break Up Hostile Swarms And Potentially More." The Drive. July 17, 2018. <https://www.thedrive.com/the-war-zone/22223/army-buys-small-suicide-drones-to-break-up-hostile-swarms-and-potentially-more>.
2. Koettl, Christoph, and Barbara Marcolini. "A Closer Look at the Drone Attack on Maduro in Venezuela." The New York Times. August 10, 2018. <https://www.nytimes.com/2018/08/10/world/americas/venezuela-video-analysis.html>.
3. Hambling, David. "Future - The next Era of Drones Will Be Defined by 'swarms'." BBC. April 27, 2017. Accessed August 19, 2019. <http://www.bbc.com/future/story/20170425-were-entering-the-next-era-of-drones>.
4. Ibid.
5. Zhang. "Unmanned Aerial Vehicle Formation Inspired by Bird Flocking and Foraging Behavior."
6. Ibid.
7. McMullan, Thomas. "How Swarming Drones Will Change Warfare." BBC News. March 16, 2019. <https://www.bbc.com/news/technology-47555588>.
8. Ibid.
9. Ibid.
10. "Drones of Mass Destruction: Drone Swarms and the Future of Nuclear, Chemical, and Biological Weapons." War on the Rocks. February 20, 2019. <https://warontherocks.com/2019/02/drones-of-mass-destruction-drone-swarms-and-the-future-of-nuclear-chemical-and-biological-weapons/>.
11. Ibid.
12. Tucker, Patrick. "The US Military's Drone Swarm Strategy Just Passed a Key Test." Defense One. November 21, 2018. <https://www.defenseone.com/technology/2018/11/us-militarys-drone-swarm-strategy-just-passed-key-test/153007/>.
13. McMullan. "How Swarming Drones Will Change Warfare."
14. "Drones of Mass Destruction." February 20, 2019.

15. "Russian Forces in Syria Repelled Massive Drone Attack on Hmeimim and Tartus." Defense Update: January 09, 2018. [https://defense-update.com/20180108\\_uav\\_attack.html](https://defense-update.com/20180108_uav_attack.html).
16. Hambling. "Future - The next Era of Drones Will Be Defined by 'swarms'."
17. "Israel Gets Ready to Counter UAV Swarm Attacks." DefenceWeb. March 15, 2018. <https://www.defencewebsite.co.za/joint/science-a-defence-technology/israel-gets-ready-to-counter-uav-swarm-attacks/>.
18. Ibid.
19. Chua, MAJ Jerry. "Unmanned Aerial Vehicles - A Clear and Present Danger, and What We Can Do about Them." POINTER 44, no. 4 (2018): 60-69.
20. "What Can Singapore Do to Counter Rogue Drones and Airport Incursions?" TODAYonline. June 24, 2019. <https://www.todayonline.com/commentary/what-can-singapore-do-counter-rogue-drones-and-airport-incursions>.
21. Liptak, Andrew. "The US Air Force Has a New Weapon Called THOR That Can Take out Swarms of Drones." The Verge. June 21, 2019. <https://www.theverge.com/2019/6/21/18701267/us-air-force-thor-new-weapon-drone-swarms>.
22. Ibid.
23. Ibid.
24. Mizokami, Kyle. "The U.S. Army Wants To Microwave Drones in Midair." Popular Mechanics. August 13, 2019. <https://www.popularmechanics.com/military/research/a28678829/microwave-drones-midair/>.
25. Ibid.
26. "The Rise of the Drone Swarm." UK Defence Journal. February 15, 2019. <https://ukdefencejournal.org.uk/the-rise-of-the-drone-swarm/>.
27. "Russian Forces in Syria Repelled Massive Drone Attack on Hmeimim and Tartus."
28. "The Rise of the Drone Swarm."
29. "Russian Forces in Syria Repelled Massive Drone Attack on Hmeimim and Tartus."
30. "Israel Gets Ready to Counter UAV Swarm Attacks." DefenceWeb. March 15, 2018. <https://www.defencewebsite.co.za/joint/science-a-defence-technology/israel-gets-ready-to-counter-uav-swarm-attacks/>.
31. Ibid.
32. Ibid.
33. "What Can Singapore Do to Counter Rogue Drones and Airport Incursions?" TODAYonline, 24 June 2019, [www.todayonline.com/commentary/what-can-singapore-do-counter-rogue-drones-and-airport-incursions](http://www.todayonline.com/commentary/what-can-singapore-do-counter-rogue-drones-and-airport-incursions).
34. "The Future-of-Government Approach Is Important, but Not Easy to Execute." TODAYonline, 5 Apr. 2017, [www.todayonline.com/singapore/future-government-approach-important-not-easy-execute](http://www.todayonline.com/singapore/future-government-approach-important-not-easy-execute).
35. Ibid.
36. Cole. "Layered Counter-drone Approaches Are Essential for Deployed U.S. Forces."
37. "Russian Forces in Syria Repelled Massive Drone Attack on Hmeimim and Tartus."
38. "MINDEF Adds Two Cyber Expert Schemes, Cyber Defence School." PIONEER - MINDEF Adds Two Cyber Expert Schemes, Cyber Defence School. February 21, 2019. [https://www.mindef.gov.sg/web/portal/pioneer/article/regular-article-detail/technology/2019-Q1/20feb19\\_news](https://www.mindef.gov.sg/web/portal/pioneer/article/regular-article-detail/technology/2019-Q1/20feb19_news).
39. "The Perfect Can Wait: Good Solutions to the 'Drone Swarm' Problem." War on the Rocks. August 13, 2018. <https://warontherocks.com/2018/08/the-perfect-can-wait-good-solutions-to-the-drone-swarm-problem/>.



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# ARE THE GOALS OF BELLIGERENTS IN ‘NEW WARS’ REALLY DIFFERENT FROM THE GOALS OF EARLIER WARS?

By Ivan Ng Yan Chao

## ABSTRACT

‘New wars’ is a term advanced by British academic Mary Kaldor to characterise warfare in the post-Cold War era.<sup>1</sup> It had been claimed that in ‘New Wars’, the struggle is not about geopolitics but about identity politics instead. The intent of this essay is to analyse this claim and argue that while it is true that identity politics plays a greater role in New Wars compared to wars in the past, the claim is problematic for two reasons. Firstly, even in the case of New Wars, geopolitics remains an ever-present consideration and has not simply been supplanted by identity politics. Secondly, wars in the past were also arguably driven by identity politics, thus, identity politics is not unique to New Wars. This essay proceeds to first define and discuss the key terms discussed. It then considers how identity politics is a prominent feature in the goals of belligerents in New Wars today. Thereafter, two objections to the claim will be examined after which the author concludes that both identity politics and geopolitics are important components of New Wars, and indeed, Old Wars as well.

*Keywords: War, Globalisation, Territory, Identity, Politic*

## INTRODUCTION

Much academic ink has been spilt regarding the nature of ‘New Wars’ and whether they do indeed differ from wars in the past. A difference that has been claimed in the New Wars literature is that the goals of belligerents in ‘New Wars’ are no longer about geopolitics but are instead about identity politics.<sup>2</sup> This essay seeks to investigate this claim, and argues that while it is true that identity politics plays a greater role in New Wars compared to wars in the past, the claim is problematic for two reasons. Firstly, even in the case of New Wars, geopolitics remains an ever-present consideration and has not simply been supplanted by identity politics. Secondly, wars in the past were also arguably driven by identity politics, thus, identity politics is not unique to New Wars. This essay proceeds as follows: Section I will first define and discuss the key terms that would be used. Section II then considers how identity politics is a prominent feature in the goals of belligerents in New Wars today. In Section III, two objections to the claim will be examined, after which the essay will conclude that both identity politics and geopolitics are important components of New Wars, and indeed, Old Wars as well.

## DEFINITIONS AND CONCEPTS

### New Wars

The New Wars’ thesis is a way of approaching the ‘changing nature of conflict’.<sup>3</sup> The New Wars literature generally argues that violent conflicts today have undergone significant transformations which render them distinct from wars in the past, or ‘Old Wars’.<sup>4</sup> Old Wars are wars between states, fought by uniformed personnel, and whose outcomes depended on decisive battles.<sup>5</sup> The emergence of the modern Westphalian nation-state is closely intertwined with wars of this sort—as Charles Tilly famously argued, ‘war makes states and states make war’.<sup>6</sup> The New Wars thesis is a departure from such characteristics, and according to Newman, consists mainly of the following key arguments:

- Most wars today occur within a state, rather than between states
- New Wars occur in conditions of state failure and societal transformations as a result of globalisation
- Ethnicity and religion play a greater role than ideology in New Wars
- Civilian deaths are much higher in New Wars

- Civilians are targeted more often in New Wars
- The distinction between state and private combatants, and between combatants and civilians, is increasingly blurred in New Wars<sup>7</sup>

To this non-exhaustive list, one can also add the claim that this essay seeks to examine—which is that the goals of belligerents in ‘New Wars’ are different from ‘Old Wars’ because ‘New Wars’ are about identity politics rather than geopolitics. This is an argument that Kaldor, a key proponent of the New Wars thesis, makes.<sup>8</sup> The end of the Cold War is commonly used in the ‘New Wars’ literature as the temporal dividing line between Old Wars and New Wars.<sup>9</sup> For the purposes of this essay, the author adopted the definition of New Wars as propounded in the New Wars literature—that is to say, wars taking place after the end of the Cold War and possessing the above characteristics which make them different from ‘Old Wars’. Regardless of whether one is speaking of Old or New Wars, Kaldor emphasises that both these terms are ideal types—two different conceptualisations of war, not empirical realities.<sup>10</sup> Here, the author acknowledges that the very existence of New Wars is contested by some scholars. Serious questions have been raised as to whether wars can simply be divided so neatly into an Old Wars-New Wars dichotomy, about the arbitrariness of the characteristics of New Wars or whether New Wars are wars at all.<sup>11</sup> This essay will not go into these debates, and will instead assume that the New Wars thesis is valid and presents a way of thinking about wars that is qualitatively different from Old Wars.

An important question which arises from the New Wars’ thesis as is the question of *who* exactly the belligerents are in New Wars. While the state is still commonly involved, the difference according to Kaldor is that New Wars involve various combinations of networks of state and non-state actors.<sup>12</sup> In addition to the regular armed forces of the state, a whole host of different belligerent groups are involved such as private security contractors, mercenaries, jihadists, warlords and paramilitaries.<sup>13</sup> In this regard, the New Wars thesis has a significant degree of overlap, as far as belligerents are concerned, with theories of civil war, insurgency, terrorism and hybrid warfare.<sup>14</sup> By moving away from a narrower focus on state belligerents and considering

the array of non-state belligerents in New Wars, it also becomes clearer that the identity of the belligerents is increasingly nebulous. The belligerents in Old Wars are simply the members of regular armed forces of their respective states, facing each other in combat. In analysing New Wars, however, it can be extremely difficult to neatly distinguish between soldiers and criminals, or between combatants and civilians.<sup>15</sup>

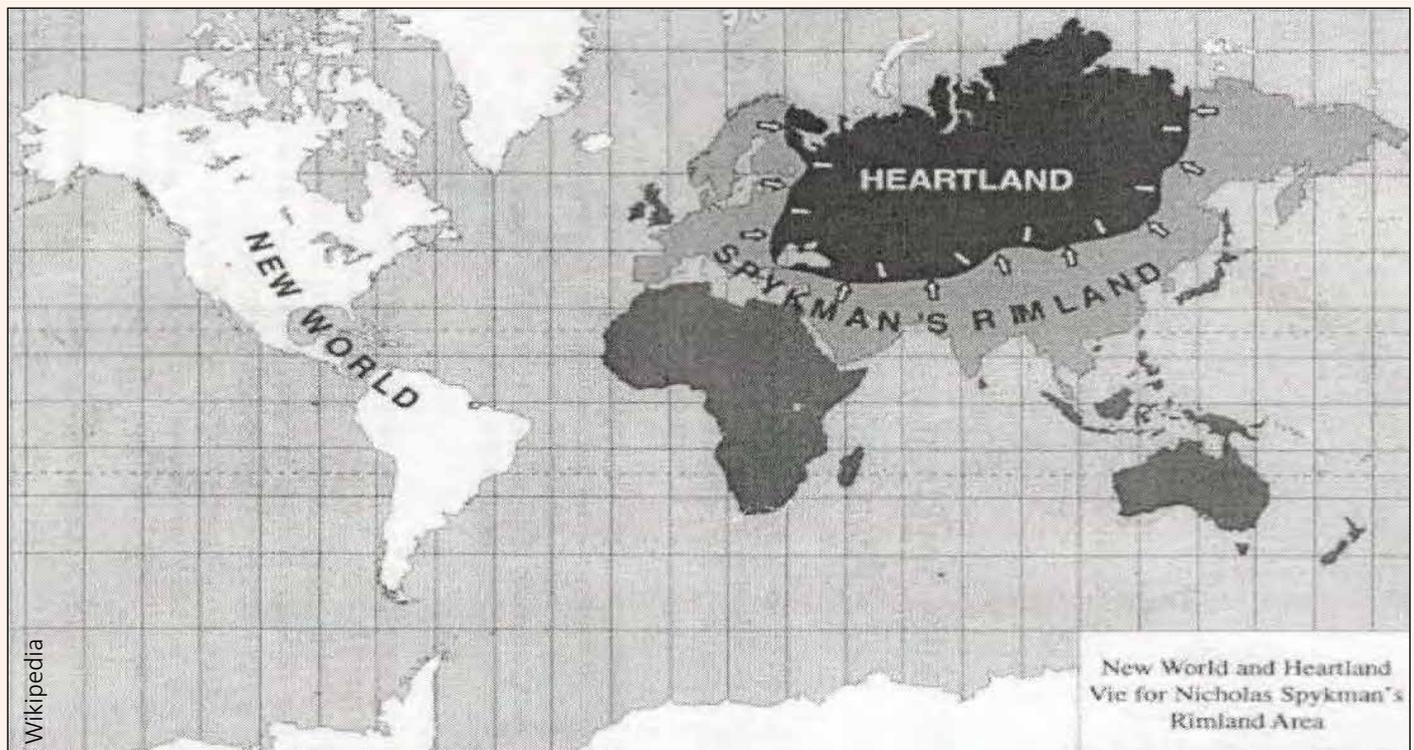
**Serious questions have been raised as to whether wars can simply be divided so neatly into an Old Wars-New Wars dichotomy, about the arbitrariness of the characteristics of New Wars or whether New Wars are wars at all.**

### Geopolitics

The term geopolitics is used in different senses depending on the context. As Deudney observes, the term has been so commonly used that it lacks meaning unless one is specified—‘[m]ost contemporary usages of the term geopolitics are casual synonyms for realist views of international strategic rivalry and interaction.’<sup>16</sup> A multitude of contemporary definitions exists.<sup>17</sup> For the purposes of this essay, the author adopted a definition provided by Colin Flint, a scholar of geopolitics, who defines geopolitics to be ‘the struggle over the control of geographical entities with an international and global dimension, and the use of such geographical entities for political advantage.’<sup>18</sup> Flint further explains that geopolitics is an ongoing process of defining the meaning of geographical entities—it is a politics of who does and does not ‘belong’ within a particular place.<sup>19</sup>

### Identity Politics

Identity politics is another term which has been used to describe a wide variety of situations. As Bernstein notes, identity politics can refer to things as different as ‘multiculturalism, the women’s movement, civil rights, lesbian and gay movements, separatist



World map with the concepts of Heartland and Rimland applied.

movements in Canada and Spain, and violent ethnic and nationalist conflict.<sup>20</sup> The final point, in particular, is most relevant to this essay—indeed, by the mid-1990s, scholars began to use the term identity politics to mean violent ethnic conflict and nationalism.<sup>21</sup> Distinctions are also drawn between collective identities such as those based on ethnicity and nation (which have a degree of permanence), and movement identities such as the environmentalist movement (which can be adopted and discarded with relative ease).<sup>22</sup> Thus, the term identity politics as used in this essay would refer to politics based on an identity construction of 'self' and 'other', especially where such identity constructions are of an ethnic or national nature, since ethnicity is one of the factors which is argued to play a greater role in New Wars.<sup>23</sup>

## IDENTITY POLITICS AND NEW WARS

How, then, does identity politics feature in New Wars? Kaldor argues that in identity politics, ethnic and religious groups seek to capture the state for the advancement of their own groups, instead of the public interest as a whole.<sup>24</sup> War provides an avenue through which identity politics can be constructed—the chief aim of war in New Wars is, according to Kaldor, to mobilise members of a group politically.<sup>25</sup> Many of the wars in the 1990s involved ethnic or national identity politics—especially the Yugoslav Wars, but also wars in

Burundi, Sierra Leone, Chechnya, Somalia, Afghanistan, Nigeria, Liberia, Congo and Angola, among others.<sup>26</sup> What is a common feature of all these wars is that the battle lines are drawn along ethnic, national or religious lines, as belligerent groups seek to assert their own group identity and protect their own group interests, through violent means. Unlike Old Wars, which are assumed to be pursued for rational political aims, New Wars driven by identity are assumed to be irrational.<sup>27</sup>

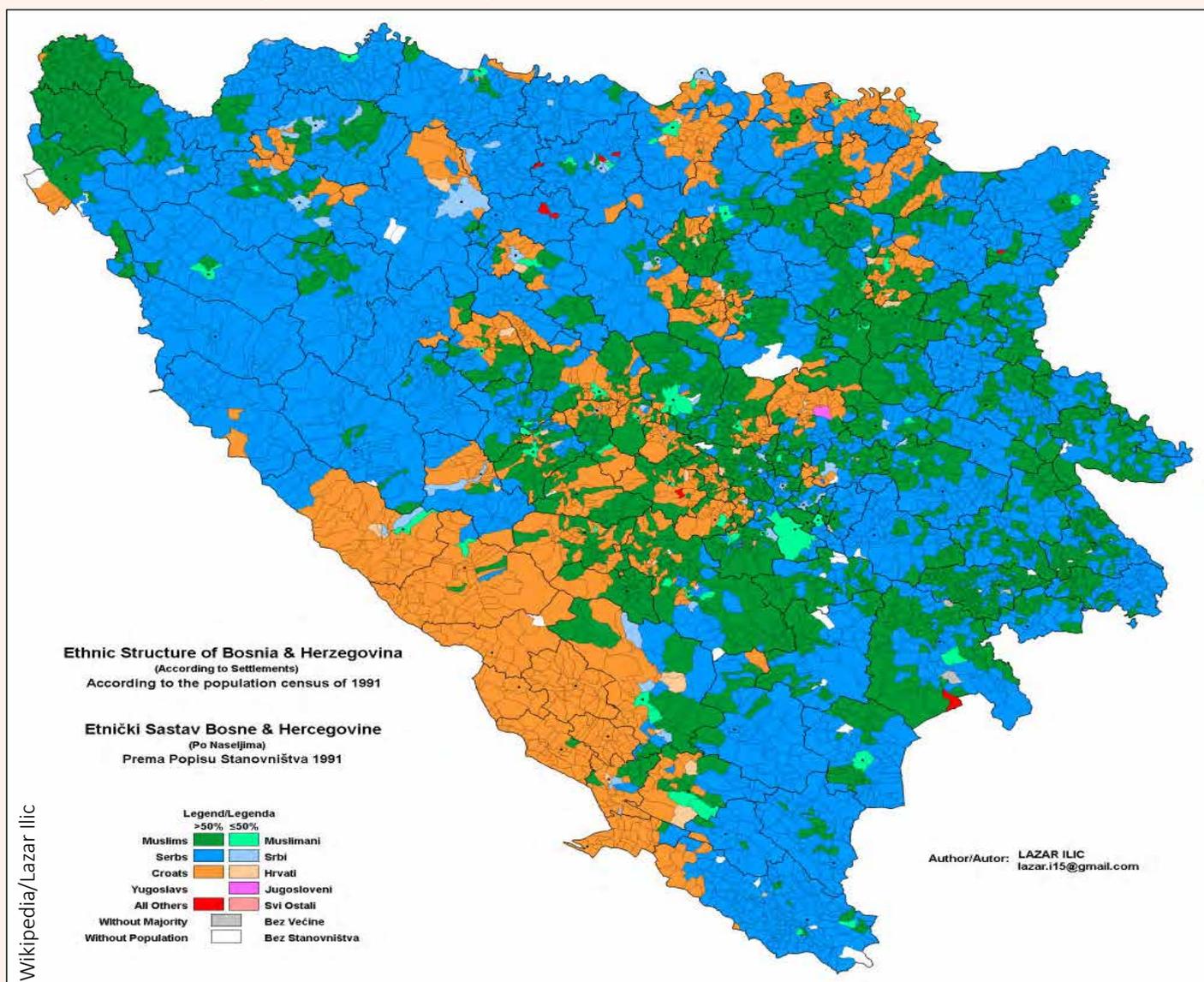
Kaldor cites the Bosnian War of 1992-1995 in her New Wars thesis as 'the paradigm of the new type of warfare.'<sup>28</sup> Unlike the Old Wars, which under the Clausewitzian paradigm are believed to be fought by states for geopolitical or ideological purposes with the ultimate goal of defeating the enemy, expanding territory and enhancing state power, the goals of the belligerents in the Bosnian War were different.<sup>29</sup> The Bosnian Serb leadership was clear on its goal of achieving 'an ethnically homogeneous, powerful Serb state', which operationally meant that all non-Serbs needed to be removed.<sup>30</sup> Non-Serbs were an 'other' against which a 'self'—a Serb identity—was juxtaposed.<sup>31</sup> Ethnic cleansing was thus conducted by the Bosnian Serbs as they sought to either expel non-Serbs from territories they controlled or simply kill them.<sup>32</sup> Identity politics was clearly at play as Serbs sought to create a Serb polity free of non-Serb 'others'.

The tremendous transformations in the global world order have been argued by some scholars to be a reason why identity politics rather than geopolitics has come to the fore in New Wars. The end of the Cold War and the onset of globalisation meant that the Westphalian nation-state, hitherto the most important political actor, was in decline.<sup>33</sup> The 'dense patterns of global interconnectedness' have made it difficult for the modern state to act in isolation without considering international ramifications and spillover effects.<sup>34</sup> As a result of the decline of the primacy of the state, Van Creveld argues that the Clausewitzian paradigm of war as a tool to achieve political ends has also become increasingly irrelevant.<sup>35</sup> The traditional geopolitical goals of states—expansion of territory, creating colonial empires or imperial aggrandisement are no longer seen as legitimate.<sup>36</sup> Old Wars—the use of war in the Clausewitzian sense as a 'continuation of politics'—are, as Malesevic observes, generally seen as illegitimate in

the modern milieu.<sup>37</sup>

The tremendous transformations in the global world order have been argued by some scholars to be a reason why identity politics rather than geopolitics has come to the fore in New Wars.

Simultaneously, the same globalising forces which have made inter-state war based on geopolitics increasingly obsolete have also led to identity politics becoming more prominent. Fleming argues that in the era of globalisation, ostracised groups which had hitherto been prevented from having their political grievances addressed would resort to violence to



Ethnic Map of Bosnia and Herzegovina in 1991.

express their identities.<sup>38</sup> Common grievances create a sense of group identity—sharpening distinction between insiders and outsiders—and over time, becomes politicised in the form of armed conflict.<sup>39</sup> Identity politics can also be explained via the grievance-opportunity dichotomy. Under grievance theory, as the level of perceived deprivation by a group increases, the risk of armed conflict also increases.<sup>40</sup> However, opportunity theory explains why armed conflicts break out as they do—it depends on changes in the political environment which affect the 'calculus of risk, cost and incentive'.<sup>41</sup> The global world order in which New Wars take place can thus be argued to have tilted this calculus in favour of engaging in armed conflict.

The vastly improved transport and communication linkages as a result of globalisation have facilitated the sale of arms in the black market, making it a lot easier for aggrieved groups to obtain much-needed weapons to engage in New Wars.<sup>42</sup> The uncertainties and fears brought about by globalisation opens the door to political entrepreneurs to capitalise on such insecurities by resorting to identity politics to increase political support.<sup>43</sup> There is also an economic element—as Fleming points out, belligerents invoking identity politics in New Wars may have strong reasons to continue hostilities so as to be able to take advantage of economic opportunities only a wartime economy offers.<sup>44</sup> Again, these economic opportunities would no doubt have been facilitated by the transnational linkages brought about by globalisation.

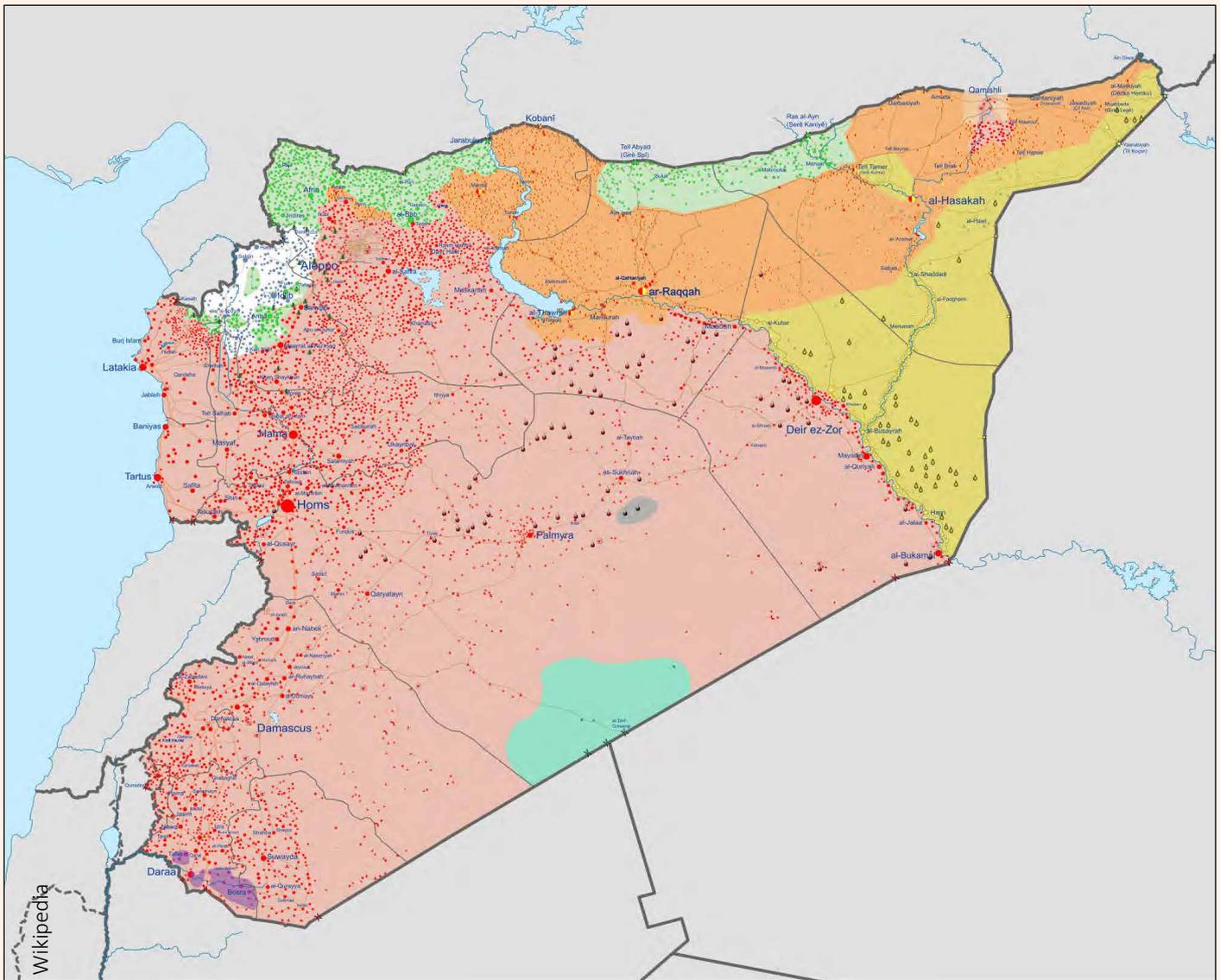
In summary, the New Wars' thesis, in relation to the goal of belligerents, is as follows. The end of the Cold War and the forces of globalisation have resulted in significant transformations to belligerents' goals in contemporary wars. Where belligerents in Old Wars engaged in war in a Clausewitzian sense—in the pursuit of rational political goals, the belligerents of New Wars are supposedly irrational. Geopolitics has declined in importance because unlike the world order in the days of Clausewitzian Old Wars, naked inter-state aggression in pursuit of traditional geopolitical goals is now generally seen as illegitimate. Therefore, geopolitics no longer has the once-central position in the goals of belligerents of New Wars. On the other hand, the post-Cold War, globalising world order has provided the structural conditions for an increase in identity politics,

especially along ethnic and religious lines, and this has resulted in New Wars when actors engage in armed conflict in pursuit of their identity politics goals.

## OPPOSING VIEWS

The claim that the goals of belligerents in New Wars are about identity politics as opposed to geopolitics, however, also means that firstly, belligerents in New Wars have no geopolitical goals, and secondly, that identity politics did not feature in the Old Wars at all. Both of these ideas are problematic. It would arguably be inaccurate to say that geopolitical goals do not exist in New Wars. Going back to Flint's definition of geopolitics as a competition over geographical entities and the politics of who does or does not belong within a given geographical entity, it is arguable that although identity politics is a prominent feature of New Wars, geopolitical goals have certainly not disappeared amongst belligerents. The author discusses Kaldor's example of the Bosnian War. The ethnic cleansing operations by the Bosnian Serbs had a distinctly territorial element to it—the intention was to remove all non-Serbs from Serb territory, so as to create a territory of Serb ethnic homogeneity.<sup>45</sup> Apart from driving non-Serbs out, the Bosnian Serb leadership also sought to bring as many Bosnian Serbs as possible within this territory.<sup>46</sup> Undeniably, this was a geopolitical goal—defining who belonged, and did not belong, to a geographical entity—in this case, the entity which later became the autonomous Republika Srpska of the Federation of Bosnia and Herzegovina.<sup>47</sup>

Conceptually, it has been argued that war and geopolitics go together, such that it would not be possible to analyse war without considering the geopolitical element. Tunjic, for example, argues that '[w]ar and geopolitics have always been, especially in certain circumstances, likened to Siamese twins or at least to inseparable lovers.'<sup>48</sup> Indeed, contrary to the New Wars thesis, Tunjic argues in the exact opposite direction—that since the end of the Cold War and the decline of the nation-state, we are actually seeing a return of geopolitics.<sup>49</sup> He argues that war inherently has territorial roots, as all social organisations engaging in politics require territory.<sup>50</sup> Territory is needed not only for sustenance at the most basic level, but also for



Syrian Civil War.

conquest—as Tunjic observes, it is only those who possess and control territory who are able to dominate others, which is what wars are about.<sup>51</sup> The civil war in Syria, arguably an example of a New War where the various ethnic and religious groups have been mobilised along sectarian lines, has seen Syria become fragmented into distinct geographical areas controlled by competing armed factions, highlighting the continued salience of geopolitics.<sup>52</sup> Deudney makes a similar argument when he notes that '[h]uman beings are fragile corporeal entities in continuous, intimate and inescapable intercourse with the material world, and therefore any realistic theory of security politics must incorporate some version of material factors'.<sup>53</sup> Even with the differences between New and Old Wars and a shift towards identity politics goals by belligerents, the need for belligerents in New Wars to control territory has not disappeared.

**Even with the differences between New and Old Wars and a shift towards identity politics goals by belligerents, the need for belligerents in New Wars to control territory has not disappeared.**

To say that the goals of belligerents in New Wars are not about geopolitics but identity politics also implies that identity politics was not a feature of Old Wars. This is arguably false as well—identity politics can be argued to have been ever-present in the Old Wars. As Colin Gray succinctly argues, '[t]here always has been intercommunal strife. It is a global phenomenon today,

but then it always has been. We should not exaggerate its incidence.<sup>54</sup> Newman, criticising the New Wars thesis, notes that conflicts and power struggles based on ethnic identity may have certain differences due to the effects of globalisation, but are, in and of themselves, 'not qualitatively peculiar to wars of the late 20<sup>th</sup> century.'<sup>55</sup> Tilly's dictum tells us that states and war have a mutually-reinforcing relationship, but the state is inextricably tied to the nation, which is an identity. The earliest European nation-states came into being 'on the basis of a relative congruity between bounded territory, functional tasks and a shared identity.'<sup>56</sup> Berdal argues that identity politics has long been a feature of wars given the vital role of wars in 'shaping and cementing identities'.<sup>57</sup> While identity politics may appear more prominently in the New Wars of today (and seem to be more 'irrational' as opposed to the Clausewitzian rationality of Old Wars), fundamentally, Old Wars arguably always involved identity politics because they were ultimately fought between different states which saw themselves as having different identities, however rational the goals of the belligerents might be.<sup>58</sup> In Hobsbawm's view, conflicts between 'us' and 'them' define the group identity of people and are 'a trait of the human condition and, in that sense, a universal one.'<sup>59</sup>

The author uses a prime example of an Old War—World War II, to illustrate. There is almost unanimous scholarly agreement that racial ideology dominated politics in Nazi Germany.<sup>60</sup> Nazi Germany was a state where 'everything was interpreted through racial lenses.'<sup>61</sup> Identity politics was thus thriving in Nazi Germany—Aryans were deemed by the state to be racially superior and sharply distinguished from inferior groups—mainly the Jews, Gypsies and Slavs.<sup>62</sup> Another central tenet of Nazi ideology was that of *lebensraum*, or living space.<sup>63</sup> In Hitler's view, the future of the

German people depended upon an expansionist foreign policy through military force.<sup>64</sup> Although there were certainly geopolitical reasons for such aggressive plans (to obtain resources for sustenance), identity politics loomed large.<sup>65</sup> Eastern Europe, and especially the Soviet Union, had the *lebensraum* Germany needed, but first, its Slavic Polish, Ukrainian and Russian populations had to be killed, deported or enslaved.<sup>66</sup> A race war would thus need to take place between the Germanic and Slavic peoples.<sup>67</sup> Polish historian Czeslaw Pilichowski thus argues that a main goal of Nazi Germany's wars in Eastern Europe was to 'gradually denationalise and destroy the Slavic peoples.'<sup>68</sup> As the German military advanced into the Soviet Union in 1941, Hitler declared that the Europe-Asia border was one which divided the Germanic and Slavic peoples.<sup>69</sup> This again highlighting the importance of identity politics even as the largest and bloodiest (Old War) military confrontations in history were taking place.<sup>70</sup>

## CONCLUSION

On one hand, it arguably must be acknowledged, as per the New Wars thesis, that the end of the Cold War and the far-reaching effects of globalisation have changed the nature of wars today, such that identity politics are often a central part of the goals of belligerents. Yet, it would be inaccurate to say that geopolitics does not feature in New Wars (even belligerents in New Wars still need control of geographical areas), or that identity politics is new to New Wars (clearly not, when Old Wars were fought on the basis of identity as well). Fleming offers a middle ground—positing that the New and Old Wars paradigms need not be mutually exclusive, and that scholars can use a combined approach.<sup>71</sup> New Wars are simultaneously about identity politics *and* geopolitics—although the identity politics aspect may appear more obvious today.

## ENDNOTES

1. Kaldor, Mary (2012). *New and Old Wars: Organized Violence in a Global Era*. Cambridge: Polity. Kaldor, Mary (2013).
2. "In Defence of New Wars", *Stability*, 2(1):4, 1-16 at 2
3. Newman, Edward (2004). "The 'New Wars' Debate: A Historical Perspective Is Needed", *Security Dialogue*, 35 (2):173-189.
4. Ibid.
5. Kaldor, Mary (2005). "Old Wars, Cold Wars, New Wars, and the War on Terror", *International Politics*, 42:491-498.
6. Ibid.
7. Newman, Edward (2004). "The 'New Wars' Debate: A Historical Perspective Is Needed", *Security Dialogue*, 35 (2):173-189.
8. Kaldor, Mary (2013). "In Defence of New Wars", *Stability*, 2(1):4, 1-16.
9. Ibid., 3.
10. Ibid.
11. Chojnacki, Sven (2006). "Anything new or more of the same? Wars and military interventions in the international system, 1946-2003", *Global Society*, 20(1):25-46.  
Kaldor, Mary (2013). "In Defence of New Wars", *Stability*, 2(1):4, 1-16.
12. Kaldor, Mary (2013). "In Defence of New Wars", *Stability*, 2(1):4, 2.
13. Ibid.
14. Kalyvas, Stathis N. (2011), "The Changing Character of Civil Wars, 1800-2009", in Strachan, Hew and Scheiers, Sibylle, *The Changing Character of War*, OUP Oxford, 2011  
Hoffman, Bruce (2011). "Who Fights? – A Comparative Demographic Depiction of Terrorists and Insurgents in the Twentieth and Twenty-First Centuries", in Strachan, Hew and Scheiers, Sibylle, *The Changing Character of War*, OUP Oxford, 2011  
Hoffman, Frank (2014). "On Not-So-New Warfare: Political Warfare vs Hybrid Threats", retrieved from <<https://warontherocks.com/2014/07/on-not-so-new-warfare-political-warfare-vs-hybrid-threats/>> (last accessed 22 October 2019)
15. Berdal, Mats (2011). "The 'New Wars' Thesis Revisited", in Strachan, Hew and Scheiers, Sibylle, *The Changing Character of War*, OUP Oxford, 2011, p. 126.  
Kaldor, Mary (2013). "In Defence of New Wars", *Stability*, 2(1):4, 1-16.
16. Deudney, Daniel (2000). "Geopolitics as Theory: Historical Security Materialism", *European Journal of International Relations*, 6(1):77-107.
17. Sloan, Geoffrey (2017). *Geopolitics, geography and strategic history*, Routledge, 2017, p. 1.
18. Flint, Colin (2006). *Introduction to Geopolitics*, Routledge, 2006, p. 36.
19. Ibid., 21.
20. Bernstein, Mary (2005). "Identity Politics", *Annual Review of Sociology*, 31:47-74 at 47
21. Ibid., 48.
22. Ibid., 58.
23. Laffan, Brigid (1996). "The Politics of Identity and Political Order in Europe", *Journal of Common Market Studies*, 34(1):81-102.

24. Kaldor, Mary (2013). "In Defence of New Wars", *Stability*, 2(1):4, 1-16.
25. Ibid.
26. Newman, Edward (2004). "The 'New Wars' Debate: A Historical Perspective Is Needed", *Security Dialogue*, 35 (2):173-189.
27. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.
28. Ibid., 219.
29. Malantowicz, Artur (2013). "Civil War in Syria and the 'New Wars' Debate", *Amsterdam Law Forum*, 5(3):52-60.
30. Ferrero, Mario (2017). "The Rationality of Serb Leaders in the Bosnian War", *Defence and Peace Economics*, 28(1):53-64.
31. Malesevic, Sinisa (2008). "The Sociology of New Wars? Assessing the Causes and Objectives of Contemporary Violent Conflicts", *International Political Sociology*, 2:97-112.
32. Malantowicz, Artur (2013). "Civil War in Syria and the 'New Wars' Debate", *Amsterdam Law Forum*, 5(3):52-60.
33. Antonsich, Marco (2009). "On territory, the nation-state and the crisis of the hyphen", *Progress in Human Geography*, 33(6):789-806.
34. Held, David and McGrew, Anthony (2007). *Globalization Theory*, Vol. 4. Cambridge: Polity, 2007, p. 1.
35. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.
36. Malesevic, Sinisa (2008). "The Sociology of New Wars? Assessing the Causes and Objectives of Contemporary Violent Conflicts", *International Political Sociology*, 2:97-112.
37. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.  
Malesevic, Sinisa (2008). "The Sociology of New Wars? Assessing the Causes and Objectives of Contemporary Violent Conflicts", *International Political Sociology*, 2:97-112.
38. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.
39. Taydas, Zeynep, Jason Enia and Patrick James (2011). "Why do civil wars occur? Another look at the theoretical dichotomy of opportunity versus grievance", *Review of International Studies*, 37:2627-2650.
40. Ibid.
41. Ibid., 2634.
42. Ahmed, Nafiu (2016). "The Effect of Globalization: Terrorism and International Crime", *IOSR Journal of Business and Management*, 18(11):43-49.
43. Malantowicz, Artur (2013). "Civil War in Syria and the 'New Wars' Debate", *Amsterdam Law Forum*, 5(3):52-60.
44. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.
45. Ferrero, Mario (2017). "The Rationality of Serb Leaders in the Bosnian War", *Defence and Peace Economics*, 28(1):53-64.
46. Ibid.
47. Ibid.
48. Tunjic, Filip (1999). "War and geopolitics – really together again?", *The Journal of Slavic Military Studies*, 12

(2):89-109.

49. Ibid., 91.
50. Ibid., 95.
51. Ibid.
52. Malantowicz, Artur (2013). "Civil War in Syria and the 'New Wars' Debate", *Amsterdam Law Forum*, 5(3):52-60.
- Chughtai, Alia (2019). "Syria's war: Who controls what?", *Al-Jazeera*, 13 March 2019 <<https://www.aljazeera.com/indepth/interactive/2015/05/syria-country-divided-150529144229467.html>> (last accessed 8 September 2019)
53. Deudney, Daniel (2000). "Geopolitics as Theory: Historical Security Materialism", *European Journal of International Relations*, 6(1):77-107.
54. Gray, Colin S. (2005). "How Has War Changed Since the End of the Cold War?", *Parameters*, 35(1):14-26.
55. Newman, Edward (2004). "The 'New Wars' Debate: A Historical Perspective Is Needed", *Security Dialogue*, 35(2):173-189.
56. Laffan, Brigid (1996). "The Politics of Identity and Political Order in Europe", *Journal of Common Market Studies*, 34(1):81-102.
57. Berdal, Mats (2011). "The 'New Wars' Thesis Revisited", in Strachan, Hew and Scheiers, Sibylle, *The Changing Character of War*, OUP Oxford, 2011, p. 117.
58. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.
59. Kecmanovic, Dusan (2013). *The Mass Psychology of Ethnonationalism*, Springer Science & Business Media, p. 39.
60. Stone, Dan (2016). "Nazi race ideologues", *Patterns of Prejudice*, 50(4-5):445-457.
61. Ibid., 446.
62. Connelly, John (1999). "Nazis and Slavs: From Racial Theory to Racist Practice", *Central European History*, 32(1):1-33.
63. Letsiner, Michael (2015). "The Nazi Genocide: Eugenics, Ideology and Implementation, 1933-1945", Master's Thesis, ProQuest Dissertations and Theses database (UMI No. 1591552), p. 65.
64. Ibid.
65. Ibid
66. Ibid., 66.
67. Connelly, John (1999). "Nazis and Slavs: From Racial Theory to Racist Practice", *Central European History*, 32(1):1-33.
68. Ibid., 3.
69. Ibid., 14.
70. Ibid.
71. Fleming, Colin M. (2009). "New or Old Wars? Debating a Clausewitzian Future", *Journal of Strategic Studies*, 32(2):213-241.



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# THE IMPORTANCE OF CONTEXT FOR MILITARY HISTORY AND EDUCATION

By Ian Li

## ABSTRACT

According to the author, military history as a field has significant benefits to military education, but, it should be properly contextualised. He feels that for there to be any meaningful interpretation, accounts must be critically analysed to understand the perspectives in which they have been written and the assumptions that inherently underlie them, particularly those that arise from the particular piece being written for the specific purpose of nation-building or education. Ideally, a healthy variety of perspectives are used in conjunction with one another so that the reader is presented with a complete picture of the event with which to then form his own interpretations and conclusions.

Keywords: *Propaganda, accuracy, interpretation, Perspective, Understanding*

## INTRODUCTION

The field of military history is not new, but it has not always enjoyed widespread recognition in academia.<sup>1</sup> Military history after all did not originate in academia, and still continues to be produced by authors that fall outside traditional academic circles. One of the main reasons for this is that apart from being merely a record of historical events, military history has traditionally taken on other non-academic applications. For example, the British military historian Sir Michael E. Howard in a 1961 lecture highlighted the appropriation of military history by political elites for propaganda purposes, thus becoming a tool of national myth-making.<sup>2</sup> In this context, the historical accuracy of the record is less important than the message it is supposed to convey. Military history must therefore be understood in its context and this essay looks at how certain factors affect the interpretation and understanding of military history, particularly for the purpose of military education.

## MILITARY HISTORY AS NATIONAL MYTH-MAKING

The use of military history in national myth-making is not an uncommon occurrence, and is often used to supplement efforts at nation-building. The Israeli academic, Yael 'Yuli' Tamir highlighted the connection between national myth-making and nation-

building, arguing that the truth-content of historical claims in the context of national-building is secondary to their functional role of creating a desired national identity.<sup>3</sup> To be sure, this is equally true of other historical fields, but the evocative nature of past military glories, imagined or otherwise, and their ability to galvanise the population adds to the seductive allure that military history holds for aspiring nationalists. It is little surprise then that many of the hastily-formed states that emerged in the wake of decolonisation, while bearing little internal coherence, fell back upon military history to drive nation-building.

For example, Tan Sri Dol Ramlı's history of the Malay Regiment which was published in 1965 played up the Regiment's achievements during the Malayan campaign in World War II (WWII), alluding to an inherent *Malay* martial tradition while also embracing the Regiment's colonial roots.<sup>4</sup> These decisions were taken in the context of the time. In 1965, the Federation of Malaysia was still relatively young, formed only two years earlier under the auspices of the British.<sup>5</sup> It was also the same year that the Chinese-majority Singapore seceded from the Federation under less than amicable circumstances.<sup>6</sup> The Regiment with its heroic past and its subsequent involvement in combating the predominantly Chinese-led communist insurgency during the Malayan Emergency therefore became a convenient symbol of Malay unity, and was embraced

as such by the ruling United Malays Nationalist Organisation (UMNO), whose vision of Malaysia was as a multicultural society, but one anchored nonetheless by the majority Malay community.<sup>7</sup> At the same time, the Regiment and the martial theme it embodied became a highly symbolic expression of Malay empowerment that was so desperately needed at the time for the seemingly embattled Malay community, economically overshadowed as they were by the Chinese minority.<sup>8</sup> Therefore, the Regiment's war exploits became not only a national source of pride, but were also representative of the struggles of the Malay race.<sup>9</sup>

### Truth-content of historical claims in the context of national-building is secondary to their functional role of creating a desired national identity.

Nonetheless, against the backdrop of the Cold War, the fledgling Malaysian state was still dependent on British military assistance to defend it against the predations of its hostile communist neighbours, particularly Indonesia.<sup>10</sup> Similarly, Britain feared that the collapse of Malaysia would have a domino-like effect throughout the rest of Southeast Asia.<sup>11</sup> The Regiment's historical connection with the British was therefore useful in promoting this mutually-beneficial partnership. Furthermore, the newly independent Malaysia was a modern construct brought together only as a result of British colonial rule. With its disparate mix of communities, it was inherently rife with cultural and ethnic tensions.<sup>12</sup> The idea of a unified Malaysia was therefore very much the imagined community as alluded to by Benedict Anderson.<sup>13</sup> Given the importance of creating narratives to bind together a nation, in particular through the appropriation of an illustrious tradition, whether correctly or otherwise, the Regiment's legacy was too valuable a propaganda asset not to seize upon for the purpose of nation-building.<sup>14</sup>

The difficulty herein is therefore how to separate reality from myth, a process complicated by the fact that many a time, even the myths themselves contain

an element of truth. Official documents, for example, may be intentionally embellished in order to present a more palatable narrative or omit information that is assumed to be common knowledge for the intended audience, often officials and politicians.<sup>15</sup> For many, the myth has also become so ingrained in the collective memory that it becomes mentally jarring when it is exposed.<sup>16</sup> For example, would the message of Malay empowerment as embodied by the Regiment be as potent if one was to draw emphasis to its ultimate failure at halting the Japanese advance—and if not, what impact would it then have on the Malay psyche?<sup>17</sup> There is also the question of the extent to which the myth should be debunked. After all, the myth serves a practical function to certain audiences. For the soldier, the idealised depiction of war is able to sustain him when thrown into the crucible of battle, guiding him in the way he *should* at least behave even when he is confronted by its horrors.<sup>18</sup> Howard termed this particular application of military history as 'nursery history', but this was not meant in a disparaging way.<sup>19</sup> Rather, it was a practical form of application borne out of necessity.



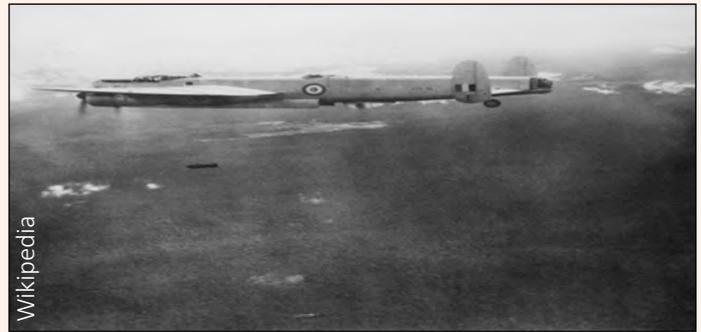
*Workers on a rubber plantation in Malaya travel to work under the protection of Special Constables, whose function was to guard them throughout the working day against attack by communist forces, 1950.*

## MILITARY HISTORY AS AN EDUCATIONAL TOOL

Another common application of military history is as an educational tool for military professional.<sup>20</sup> Here, its objective is to provide explanations for strategic decisions and movements in order to educate future planners. As a result, such forms of military history are

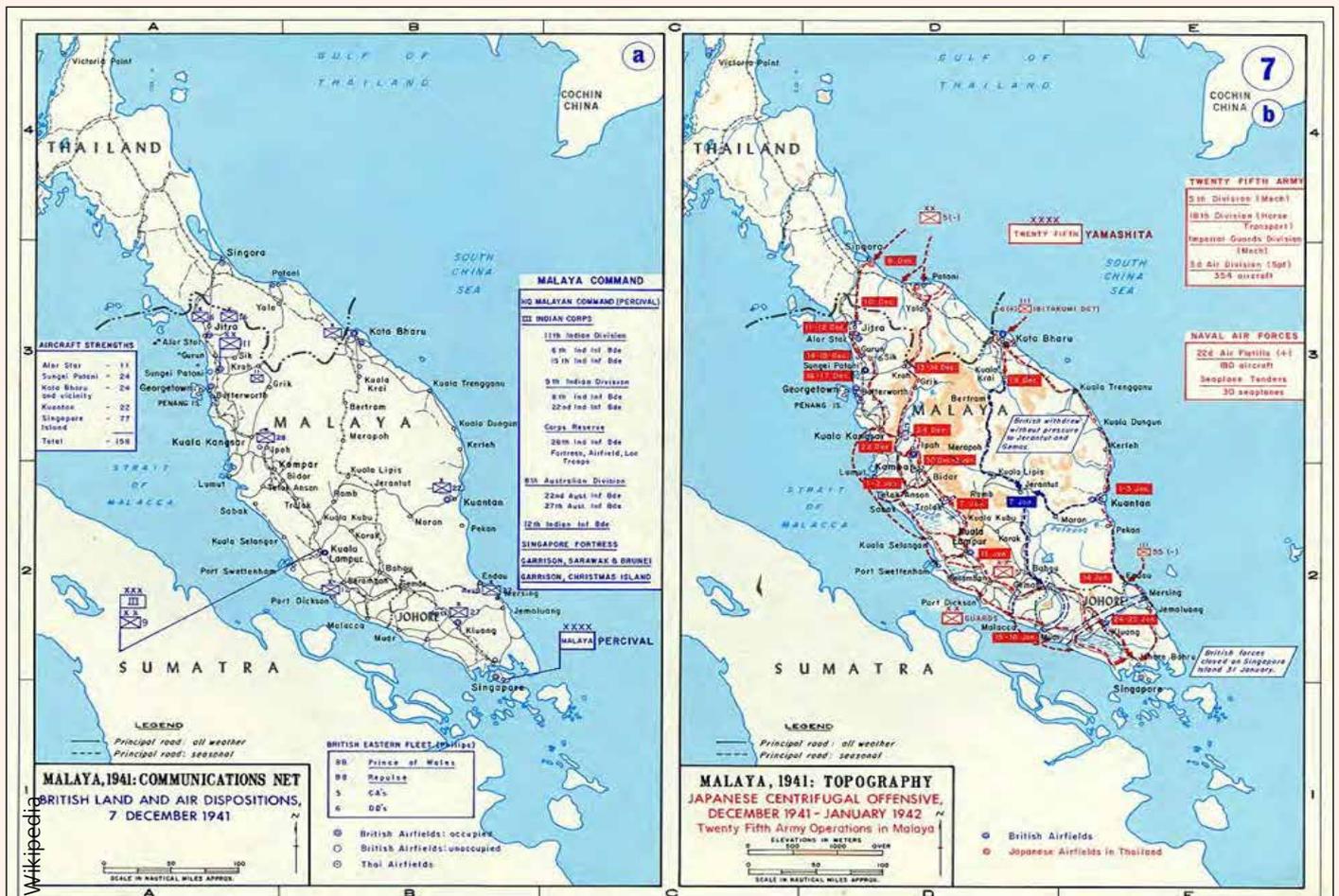
typically academic in nature and written in a top-down style from the perspective of the Staff College mind, focusing on command decisions at the strategic level and with the combat unit as the lowest common denominator for analysis.<sup>21</sup> There are a number of implications for this.

First, in order to come up with broad explanations for what are in reality complex scenarios, military history written for educational purposes often glosses over the impact of battlefield confusion, particularly at the tactical and operational levels.<sup>22</sup> As highlighted by Clausewitz in his treatise on war, ‘everything in war is very simple, but the simplest thing is difficult.’<sup>23</sup> These are due to the countless uncertainties and complexities that are inherently part and parcel of waging war under chaotic field conditions. This ‘friction’ then is what distinguishes real war from war on paper.<sup>24</sup> The charge against educational military history is therefore its over-simplification into basic or simple truths which are far from representation of complex realities.<sup>25</sup>



Australian Avro Lincoln bomber dropping 500lb bombs on communist rebels in the Malayan jungle (c. 1950)

Second, this top-down version of military history ignores the agency of one of the main actors in any conflict—the boots on the ground. By focusing on high-level strategic decision-making, war is reduced to an account of the actions of faceless blocs of men, commanded by generals like pieces on a chessboard.<sup>26</sup> This failure to capture the myriad of individual experiences that accompany each conflict adds to the charge of unrealism levelled against this form of military history. The value of an army’s fighting quality becomes solely attributed to the proficiency of its leaders, ignoring the contributions of its other no less significant components.<sup>27</sup> In the accounts of ground



Map of the Malayan campaign.



*Australian anti-tank gunners firing on Japanese tanks at the Muar-Parit Sulong Road.*

operations, less attention is given to individual experiences apart from describing the critical actions taken by commanders at a tactical level. There is therefore an emotional distance from the events being described, making it hard to connect with them at a personal level.

Of course, in reality military education does not focus exclusively on top-down histories, and personal accounts are represented in one form or the other. However, for a complete picture to be presented, more ground-level perspectives could be weaved to work in conjunction with strategic-level analyses, and such personal ‘face of battle’ accounts, including those provided by combat veterans, are readily available.<sup>28</sup> Such accounts allow the reader to better appreciate the unnerving chaos that is experienced in battle. Caution must however be exercised in the selection of such sources. ‘Face of battle’ accounts, particularly those based on oral histories, are ultimately *personal* accounts and their representativeness of the broader population cannot be assumed.<sup>29</sup> Furthermore, an individual’s personal experience can only be but a drop in the ocean of the collective narrative.<sup>30</sup>

Neither are these accounts immune to the individual’s personal bias or lapses in memory, whether intentional or otherwise.<sup>31</sup> For example, Colonel Masanobu Tsuji’s own first-hand account of the Malayan campaign, which provides a valuable glimpse into the campaign from a rare Japanese point-of-view, is nonetheless skewed in Japan’s favour.<sup>32</sup> He portrays the Japanese intentions behind the capture of Singapore

as part of a campaign to liberate Asia from Western colonisation; one which he then suggests helped to subsequently bring about independence in many former colonies.<sup>33</sup> This claim is contentious at best, especially in light of the substantive record of Japanese war crimes committed not only against military personnel during the war, but also civilians.<sup>34</sup> The difficulty in validating individual accounts exacerbates this problem.<sup>35</sup>

**In the accounts of ground operations, less attention is given to individual experiences apart from describing the critical actions taken by commanders at a tactical level. There is therefore an emotional distance from the events being described, making it hard to connect with them at a personal level.**

It is also tempting to assume that a soldier’s personal account is the most authoritative point of reference. Often, a retired military professional ‘uses the credibility of both his military experience and his advertisable rank’ to lend greater authority to his version of historical events.<sup>36</sup> Also, by virtue of ‘being there’, his witness account claims a superior level of authenticity, relegating the accounts of other authors who lack that first-hand experience to the status of mere pretenders.<sup>37</sup> Yet, in addition to the problems with personal accounts as highlighted above, the soldier is highly susceptible to professional myopia, often using his occupational expertise to over-compensate for a lack of academic rigour.<sup>38</sup> Personal accounts, when deprived of their cultural and social context, offer only a one-dimensional portrayal of events.

Furthermore, there is a growing understanding that the study of military history cannot just be confined to war itself—war and its causal factors are deeply

intertwined with social factors and affected by structures and constraints imposed by the society its armed forces are embedded in.<sup>39</sup> A deeper study of all the extra-military factors that govern the relationship between the armed forces and society is therefore needed to fully understand how and why war is waged.<sup>40</sup> David Edgerton's *Warfare State* for example examines the socio-political factors that drove Britain's military planning from 1920 to 1970 rather than provide a 'blood and guts' account of the conflicts it was involved in.<sup>41</sup>

Ultimately, there must be a compromise between both approaches.<sup>42</sup> The historical account conceptualised in academic terms must be tempered by the soldier's professional insight in order to be useful for education.<sup>43</sup> At the same time, the soldier's personal account must be contextualised using an academic perspective for any meaningful application to be derived. When this is achieved, the history then serves to broaden the professional scope of the military professional, informing military innovation in peacetime and adaptation in war.<sup>44</sup> Besides, for all its problems, history remains the best alternative to actually experiencing war for the military professional to hone his trade.<sup>45</sup> The caveat though is that military history must be *studied* rather than merely read in order for the military professional to reap its full benefits.<sup>46</sup>

### THE ISSUE WITH PERSPECTIVE

One of the significant challenges that affects the understanding of military history is the critique of Eurocentrism.<sup>47</sup> This occurs at two levels. Conceptually, many of the definitions and frameworks that define the field are Western in origin.<sup>48</sup> For example, the writings of Clausewitz continue to dominate modern strategic thought, and the inevitable outcome is that military history becomes overly interpreted using Western lenses.<sup>49</sup> This is especially pertinent given how influential Clausewitz is within Western military academies, in turn colouring the perspectives of military professionals and how they interpret military history. As a result, other civilizational and cultural perspectives are ignored, presenting an incomplete version of how war is understood and defined.<sup>50</sup>

In the Western tradition, there is a tendency to interpret war in the context of the international state system, assigning it a legal and political character. It is for this reason that Western countries have at times taken pains to avoid the term war when engaged in controversial conflicts.<sup>51</sup> This raises questions over how conflicts which are not interstate in nature, such as civil wars and insurgencies, or which involve non-state actors, such as the Islamic State or Private Military Companies (PMCs), should be interpreted.

**'Face of battle' accounts, particularly those based on oral histories, are ultimately *personal* accounts and their representativeness of the broader population cannot be assumed.**

In terms of emphasis, historical accounts tend to lean toward Western perspectives, portraying Western militaries as the active, often protagonist-like, lead actors. Where the 'non-West' is depicted, it is as faceless opponents of these Western combatants, supporting actors whose military cultures and motivations are entirely glossed over and whose warfighting capabilities are downplayed or given scant attention to.<sup>52</sup> National histories are equally guilty of this, such as Lionel Wigmore's commissioned work on Australia's involvement in WWII during the initial phase of Japan's advance into Southeast Asia.<sup>53</sup> A possible reason for this is the challenge an author faces in interpreting or even being able to read sources in the language of the other culture.<sup>54</sup> Of course, another more cynical explanation is that presenting a more balanced narrative does not coincide with the objectives of an intentional exercise in national myth-making.

These distinctions are however not helpful since war has a universal quality that transcends cultures and civilisations. Clausewitz, for example, suggests that the nature of war does not change.<sup>55</sup> Rather, it is war's characteristics which adapt to the limiting conditions and peculiar preconceptions of each age.<sup>56</sup> The strategic

theorist Colin Gray summarises this idea well when he says that there is 'only a single general theory of war, because war—past, present, and future—is but a single species of subject.'<sup>57</sup> By ignoring the greater range of perspectives that exists outside of Eurocentric ones, one is presented with a far more limited and unrealistic interpretation of military history, leading to the drawing of erroneous, inaccurate or oversimplified conclusions. This in turn misinforms the reader who might develop a coloured portrait of events. For the military professional who relies on military history for education, the result of such misinformation can have catastrophic results were it to be translated into the planning or execution of strategy.

## CONCLUSION

In conclusion, military history as a field has significant benefits to military education, but must be properly contextualised. For there to be any meaningful interpretation, accounts must be critically analysed to understand the perspectives in which they have been written and the assumptions that inherently underlie them, particularly those that arise from the particular piece being written for the specific purpose of nation-building or education. Ideally, a healthy variety of perspectives are used in conjunction with each other so that the military professional is presented with a complete picture of the event with which to then form his own interpretations and conclusions.

## ENDNOTES

1. Edward M. Coffman, *The Embattled Past: Reflections on Military History* (Kentucky: The University Press of Kentucky, 2014), 1-2.
2. Michael Howard, "The Use and Abuse of Military History," *Parameters, Journal of the US Army War College* 11, no. 1 (1981): 9.
3. Yael Tamir, "Review: The Enigma of Nationalism," *World Politics* 47, no. 3 (1995): 438-440.
4. Dol Ramli, "History of the Malay Regiment 1933-1942," *Journal of the Malaysian Branch of the Royal Asiatic Society* 38 Pt. 1, no. 207 (1965).
5. Barbara Watson Andaya and Leonard Y. Andaya, *A History of Malaysia, Second Edition*, (Honolulu: University of Hawai'i Press, 2001), 160.
6. Albert Lau, *A Moment of Anguish: Singapore in Malaysia and the Politics of Disengagement* (Singapore: Times Academic Press, 1998), 279-281.
7. Kevin Blackburn and Karl Hack, *War Memory and the Making of Modern Malaysia and Singapore*, (Singapore: NUS Press, 2012), 227-229.
8. *Ibid.*, 212.
9. *Ibid.*, 216.
10. A. J. Stockwell, "Malaysia: The making of a neo-colony?," *The Journal of Imperial and Commonwealth History* 26, no. 2 (1998): 143.
11. Thomas Kaplan, "Britain's Asian Cold War: Malaya," in *Britain and First Cold War*, ed. Anne Deighton, (New York: Palgrave Macmillan, 1990), 215-216.
12. A. B. Shamsul, "A History of an Identity, an identity of a History: The Idea and Practice of 'Malayness' in Malaysia Reconsidered," *The Journal of Southeast Asian Studies* 32, no. 3 (2001): 358.
13. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, Revised Edition, (London and New York: Verso, 2006), 1-7.
14. Tamir, "Review," 438.
15. Coffman, *The Embattled Past*, 145-146.
16. Howard, "The Use and Abuse of Military History," 11.
17. Karl Hack and Kevin Blackburn, *Did Singapore Have to Fall?: Churchill and the impregnable fortress*, (London and New York: RoutledgeCurzon, 2004), 78.
18. Howard, "The Use and Abuse of Military History," 10.
19. *Ibid.*
20. Stephen Morillo and Michael F. Pavkovic, *What is Military History?*, 2<sup>nd</sup> Edition, (Cambridge: Polity Press, 2013), 6.
21. Jeremy Black, *Rethinking Military History*, (Oxfordshire: Routledge, 2004), 36.
22. *Ibid.*
23. Carl Von Clausewitz, *On War*, eds. and trans. Michael Howard and Peter Paret, (Princeton: Princeton University Press, 1989), 119.
24. *Ibid.*
25. Williamson Murray, "Thoughts on military history and the profession of arms," in *The past as prologue: The importance of history to the military profession*, eds. Williamson Murray and Richard Hart Sinnreich, (New York: Cambridge University Press, 2006), 82-85.
26. Black, *Rethinking Military History*, 36.

27. Ibid.
28. Black, *Rethinking Military History*, 36.
29. Black, *Rethinking Military History*, 44.
30. Ibid., 47-48.
31. Morillo and Pavkovic, *What is Military History?*, 54.
32. Masanobu Tsuji, *Japan's Greatest Victory: Britain's Worst Defeat*, ed. H. V. Howe, trans. Margaret E. Lake, (Boston: Da Capo Press, 1997). The book was first published in slightly different form in Japan in 1952 as *Shonan: The Hinge of Fate* and in Australia in 1960 as *Singapore: The Japanese Version*. Colonel Tsuji was himself the Chief of Operations and Planning Staff, 25<sup>th</sup> Japanese Army, Malaya and was involved in the planning of the invasion of Malaya.
33. Ibid., 13-14.
34. Edward Frederick Langley Russell, *The Knights of Bushido: A History of Japanese War Crimes During World War II*, (New York: Skyhorse Publishing, Inc., 2008).
35. Black, *Rethinking Military History*, 46.
36. Morillo and Pavkovic, *What is Military History?*, 6-7.
37. Ibid., 54-55; Coffman, *The Embattled Past*, 135-136.
38. Murray, "Thoughts on military history and the profession of arms," 82; Richard Hart Sinnreich, "Awkward partners: military history and American military education", in *The past as prologue: The importance of history to the military profession*, eds. Williamson Murray and Richard Hart Sinnreich, (New York: Cambridge University Press, 2006), 65-66.
39. Morillo and Pavkovic, *What is Military History?*, 46-49.
40. Ibid., 64-74; Black, *Rethinking Military History*, 49-50.
41. David Edgerton, *Warfare State: Britain, 1920-1970*, (Cambridge: Cambridge University Press, 2006).
42. Howard, "The Use and Abuse of Military History," 11.
43. Murray, "Thoughts on military history and the profession of arms," 84.
44. Williamson Murray and Richard Hart Sinnreich, "Introduction," in *The past as prologue: The importance of history to the military profession*, eds. Williamson Murray and Richard Hart Sinnreich, (New York: Cambridge University Press, 2006), 8.
45. Howard, "The Use and Abuse of Military History," 13.
46. Ibid., 14; Murray and Sinnreich, "Introduction," 9.
47. Black, *Rethinking Military History*, 66.
48. Jeremy Black, "Rethinking Military History," *The RUSI Journal* 150, no. 3 (2005): 62.
49. Colin S. Gray, "Clausewitz, history, and the future of the strategic world," in *The past as prologue: The importance of history to the military profession*, eds. Williamson Murray and Richard Hart Sinnreich, (New York: Cambridge University Press, 2006), 111-113.
50. Jan Angstrom and J. J. Widen, *Contemporary Military Theory: The dynamics of war*, (London and New York: Routledge, 2015), 14-17.
51. Ibid., 13.
52. Black, *Rethinking Military History*, 67.
53. Lionel Wigmore, *Australia in the War of 1939-1945; Series One – Army; Volume IV – The Japanese Thrust*, ed. Gavin Long, (Adelaide: The Griffin Press, 1957).
54. Black, *Rethinking Military History*, 68.

55. Clausewitz, *On War*, 75-89.
56. *Ibid*, 593.
57. Colin S. Gray, "War – Continuity in Change, and Change in Continuity," *Parameters* 40, Summer 201 (2010): 7.



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Chan and Lew, "The Challenge of Systematic Leadership Development in the SAF," 39 – 50.

Ibid., 39 – 50.

Mark J. Valencia, "Regional Maritime Regime Building: Prospects in Northeast and Southeast Asia," *Ocean Development and International Law* 31 (2000): 241.

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Michael I. Handel, "Introduction," in *Clausewitz and Modern Strategy*, ed. Michael I. Handel, (London: Frank Cass, 1986), 3.

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