

POINTER

The Journal of the Singapore Armed Forces

Features

Redefining the Indirect Approach, Defining SOF Power, and the Global Networking of SOF
by Scott Morrison

The Threat of Jihad Terrorism
by ME5 Neo Junjie

Ensuring a Capable SAF in a Resource-Constrained Environment
by MAJ Eric Ng Weng On

Deterrence Through Various Confidence and Security Building Measures
by MAJ (NS) Lim Chin Peng

Defense in the Cyber Domain
by ME4 (NS) Weng Zaishan

What Would Sun Zi Say of Our SAF?
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The Y Factor: Managing the New Generation of Soldiers
by CPT Jireh Ang Jianrui



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Editorial

The final issue of *POINTER* for 2013 is a very special one for us. We are extremely pleased and honored to feature “Redefining the Indirect Approach, Defining SOF Power and the Global Networking of SOF” by Scott Morrison. This article represents the first publication collaboration with *PRISM*, an American security studies journal. *PRISM* is published by the United States National Defense University (NDU) Press for the Center for Complex Operations (CCO). With this collaboration, we hope to enhance professional sharing and learning with NDU. One of our articles, “A Swift and Decisive Victory: The Strategic Implications of What Victory Means” by CPT Chong Shi Hao is slated to be published in *PRISM*'s Dec 13 issue as part of this collaboration.¹

Scott Morrison's article defines Special Operations power as well as details its power, impact and effects. This essay explains and redefines the interrelation between Special Operations and the Indirect Approach to give a better understanding of the utility of SOF power. For the near future, the global networking of SOF through an SOF network of networks is of utmost importance as it will increase the utility and position of SOF power to complement Land, Sea and Air power.

The world has suffered great devastation and carnage from natural disasters like the recent catastrophe caused by Typhoon Haiyan in the Philippines and terrorist attacks like the Boston Marathon bomb blasts. All these serve to drive home the importance of Singapore being independent and not taking its growth and prosperity for granted. In line with this, we have lined up four articles, covering topics from terrorism and cyber security to SAF's focus on prudent resource usage and strengthening its confidence and security building measures, for your reading and reflection.

In “The Threat of Jihad Terrorism,” ME5 Neo Junjie examines the threat posed by Jihad terrorism on a global scale, the persistence of Jihad terrorism and distinguishes between perception and reality in contemporary and Jihad terrorism. ME5 Neo also suggests the importance of incorporating quantitative analysis in the assessment of the terrorism threat. He concludes that the fight against terrorism will need to encompass effective political, economic, diplomatic and military policies targeting the root causes of Jihad terrorism in order to have a positive effect.

ME4 (NS) Weng Zaishan's article on “Defence in the Cyber Domain” covers the impact of information and communications technology (ICT). In the article, ME4 (NS) Weng stresses that the proliferation of ICT in our everyday lives is becoming increasingly apparent. As such, there are new challenges revolving around cyber security. He explores the framework in which our SAF should function and collaborate with others in other to better maintain our cyber network and infrastructure. ME4 (NS) Weng also highlights the various changes required for our operations to actively achieve a high level of cyber security.

“Deterrence Through Various Confidence and Security Building Measures” is written by MAJ (NS) Lim Chin Peng. In this article, MAJ (NS) Lim stresses that while the theory of deterrence is largely sound and rational, it must be differentiated from the *application* of deterrence and it must be reinforced with various Confidence and Security-Building Measures (CSBM), which are non-military instruments of security. According to MAJ (NS) Lim, internationally, CSBMs seek to enhance transparency between states, hence providing increased trust and confidence. Domestically, they also work to strengthen national commitment to defense. He emphasizes that these measures are key to complementing the overall approach of military deterrence and sustaining peace in the region.

MAJ Eric Ng Weng On's article on "Ensuring a Capable SAF in a Resource-Constrained Environment" examines the importance of the prudent use of resources by the SAF, i.e. money, people and space, to sustain its Third Generation transformation while maintaining a high level of operational readiness. MAJ Lim states that the SAF has been undergoing various transformations and improvements over the past decades, resulting in a more robust, efficient and potent organisation. However, he emphasizes that it is vital that the SAF remains prudent and sharp regarding the utilization and allocation of resources in order to maintain high proficiency in its duties, amidst Singapore's increasingly complex and challenging security environment. In his view, creating sufficient capacity within the SAF to handle both conventional and unconventional threats will ensure its effectiveness and relevance in the long term.

The article "What would Sun Zi Say of Our SAF" by MAJ Charles Phua Chao Rong assesses the SAF under Sun Zi's principles of warfare. "What would Sun Zi Say" is a commonly used concept to describe how military strategist Sun Zi would perceive a certain organization, event, war or method of operation. According to MAJ Phua, Sun Zi's principles may be applicable to some of SAF's principles such as our defense policy of deterrence and diplomacy, our mission of swift and decisive victory and the trajectory of Third Generation SAF transformation. MAJ Phua explains that there are many aspects of Sun Zi's teachings that are relevant to our SAF at the strategic, operational and tactical levels. This would increase Singapore's conceptual "strategic depth" which would in turn give us an advantage over our adversary.

Finally, in "The Y Factor: Managing the New Generation of Soldiers", CPT Jireh Ang Jianru takes a critical look at the Generation Y workforce in the SAF.

According to CPT Ang, the biggest factor dividing our society is not gender, race or income but generation. Distinct differences among baby boomers, Generation X and Generation Y, due to their unique formative environments, significantly impact various aspects of management. In his article, CPT Jireh aims to address the issue of Generation Y in the SAF workforce by dissecting the tri-generation workforce, identifying areas in management that have transformed them, while contextualizing measures to embrace Generation Y in the SAF.

We are also pleased to announce that the Chief of Defence Force Essay Competition 2013/2014 is now open for participation. We would like to invite all our readers to take part in the competition. Details can be found on the *POINTER* website at <http://www.mindef.gov.sg/safti/pointer>.

POINTER would like to bid farewell to three key members of the *POINTER* Editorial Board. We wish to thank COL Chng Boon Kai, COL Tay Chee Bin and Mr Wong Chee Wai for their full support. *POINTER* has benefitted from their insightful observations on a wide variety of military subjects. *POINTER* would also like to extend its warmest welcome to new members, COL Benedict Ang, COL Lim Siong Tiong and MAJ Charles Phua Chao Rong.

We also bid a fond farewell to CPL Ruben Pang as he leaves to pursue a career in the arts. His positive attitude and sterling work ethic has been a great asset to this office. We thank him for everything he has done and wish him the very best in his future endeavors.

Finally, we would like to wish all our readers a Merry Christmas and a Happy New Year! Happy Holidays!

The *POINTER* Editorial Team

1. CPT Chong Shi Hao's article was first published in *POINTER* 39, no. 3 (2013).

Redefining the Indirect Approach, Defining SOF Power, and the Global Networking of SOF

by Scott Morrison

Abstract:

Air, maritime and land power are commonly understood concepts for military professionals and theorists alike, however, the concept of Special Operations Forces (SOF) power is less well understood. Regardless, SOF power plays an integral role in the defense strategies of many militaries. A firm understanding of the nature and strengths of SOF power is thus essential. This article explains SOF power, its uses and implications, and the significance of the “indirect approach.” This article also explores the global networking of SOF to deal with current and future security threats.

Keywords: Counterinsurgency; Indirect and Direct Approaches; Network Warfare; Special Operations Forces

INTRODUCTION

Most military professionals and historians are familiar with the theories and concepts of air, maritime, and land power, but there has been little in the way of theory or concepts as to what Special Operations power means and its strategic utility alongside those of the air, maritime, and land domains. Yet Special Operations Forces (SOF) must play a central role in several of the primary missions of the United States (US) Armed Forces as projected in the defense strategy *Sustaining US Global Leadership: Priorities for 21st Century Defense*, such as countering terrorism, irregular warfare, and countering weapons of mass destruction. The importance of Special Operations to this new strategy was underscored in the accompanying remarks made by former Secretary of Defense Leon Panetta during the 5 January 2012 unveiling of the new defense strategy where he mentioned specifically, “as we reduce the overall defense budget, we will protect, and in some cases increase, our investments in special operations forces.”

Therefore, understanding the role of SOF power and how it fits within strategy is an essential prerequisite to successfully implementing the US defense strategy.

RECALIBRATING THE CURRENT SOF INTERPRETATION OF THE DIRECT AND INDIRECT APPROACHES

Within the US Special Operations community there has been a considerable amount of theoretical discussion, attempting to more clearly characterize the “indirect approach” as it relates to the “direct approach” in a Special Operations context. The familiar understanding in US SOF circles generally associates the direct approach with direct action (DA), and the indirect approach with foreign internal defense (FID) or security force assistance (SFA). In some quarters, current interpretations of these two approaches represent what is nearly a cultural schism within Special Operations, due to the very different focus and skill sets associated with them. In order to understand SOF power, one first needs a recalibrated view of the direct and indirect approach frames of reference from a broader strategic vantage point.

SOF alone are not a panacea or substitute, but they provide significant complementary capabilities to those of the air, land, and maritime domains.

An informative start point for exploring these topics to better define and understand the strategic utility and value of SOF power is to revert back to first principles and reconsider the roots and origins of the indirect approach. Former British soldier, historian, and military theorist Sir Basil Henry Liddell Hart is historically credited with defining the indirect approach in his work *Strategy of the Indirect Approach*, where he asserted: "... throughout the ages decisive results in war have only been reached when the approach has been indirect. In strategy the longest way round is apt to be the shortest way home."¹ Hart's indirect approach focused on targeting the balance or equilibrium of an adversary, noting that "while the strength of an enemy country lies outwardly in its numbers and resources, these are fundamentally dependent upon stability or equilibrium of control, morale, and supply."² The central premise of the indirect approach is to orient upon, target, and upset an adversary's equilibrium or balance to set up and enable follow-on decisive blows to be landed. Hart goes on to explain with an athletic metaphor that a direct approach without the preparatory shaping of an indirect approach is often a blunt and raw methodology that typically results in an adverse outcome; "in war as in wrestling the attempt to throw the opponent without loosening his foothold and balance can only result in self-exhaustion increasing in disproportionate ratio to the effective strain put upon him. Victory by such a method can only be possible through an immense margin of superior strength in some form, and, even so, tends to lose decisiveness."³ From his historical analysis of the indirect approach vice the direct approach, Hart

became convinced that, "More and more clearly the fact emerged that a direct approach to one's mental object, or physical objective, along the 'line of natural expectation' for the opponent, has ever tended to, and usually produced negative results."⁴ While the context of Hart's theory stemmed from observations of state on state conflict, the indirect approach is arguably more applicable in the complex operating environment of the 21st century where non-state threats and internal conflicts dominate the security landscape.

THE INDIRECT APPROACH AND SOF POWER

In some circles a degree of cynicism is expressed when Special Operations are explained as small unit tactical actions performed by specially organized, trained, and equipped forces aimed at achieving strategic and operational effects. SOF alone are not a panacea or substitute, but they provide significant complementary capabilities to those of the air, land, and maritime domains. In fact, a great deal of what allows SOF to perform in a special manner are the enabling capabilities, in many cases leveraged from outside of SOF, such as "mobility, aerial sensors, field medics, remote logistics, engineering planners, construction, intelligence, regional specialists, interpreters/translators, communications, dog teams, close air support specialists, security forces, and others that permit SOF operators to focus more directly on their missions."⁵ What SOF do however, is bring together a potent and unique mix of capabilities to the defense portfolio that enables pursuit of this indirect approach with an effect or outcome that is grossly disproportionate to the investment in resources. The SOF core activities identified by the US Special Operations Command are: Direct Action, Special Reconnaissance, Unconventional Warfare, Foreign Internal Defense, Civil Affairs Operations, Counterterrorism, Psychological Operations, Information Operations, Counter-proliferation of Weapons of Mass Destruction, Security Force

Assistance, Counterinsurgency Operations, and Activities Specified by the President or the Secretary of Defense (SECDEF).⁶ Collectively, these core activities provide a toolbox for pursuing the strategic indirect approach. SOF power is the ability to apply the precise effects of these collective capabilities at carefully calibrated points of the adversary's balance or equilibrium described by Hart, whether that opponent is a state, non-state, or irregular actor in the form of an insurgent challenging an incumbent allied government. These capabilities might include the surgical application of force through offensive action, more methodical long-term efforts that support and influence others through training, advice and assistance, or, as in most instances, a combination of both. A strategy of support and influence seeks to achieve a positional advantage, exercised primarily via local indigenous forces to undermine the foundation and environment that enables the equilibrium or balance of an adversary. These local forces, empowered with indigenous knowledge and information, and enabled with advice and assistance, are capable of eroding an adversary's balance over time. These longer-term support and influence efforts, complemented by carefully calibrated, high tempo offensive action driven by high fidelity intelligence, combine to achieve, through a strategic indirect approach, what John Arquilla and David Ronfeldt described as "swarming" to disrupt command and control, deny sanctuary, interdict lines of communication, gather information and provide strategic anticipation to inform follow-on actions and decisions.⁷ The tools of the current interpretation of the direct approach as it is known today, primarily offensive operations in the form of high tempo precision raids, are in fact integral components of a broader application of the strategic indirect approach. Obtaining clarity on this topic is critically important, as the value and utility of SOF power operating in this strategic indirect manner

are particularly relevant to the threats and challenges faced in the 21st century security environment.

FACING NEFARIOUS NETWORKED ACTORS AND TODAY'S PARADIGM FOR CONFLICT

It is no secret that the technological impact on telecommunications and modern transportation has made the world more interconnected. It has revolutionized how we look at commerce and business through a global lens of interdependence. Likewise, the global international security landscape is inherently more complicated due to the same interconnected nature found in today's world of interdependent financial markets and commerce. The nature of today's threats and challenges is characterized by a complex network of nefarious state and non-state actors ranging from insurgents and terrorists to traffickers, financial institutions, and drug cartels who collaborate wittingly and unwittingly through relationships of opportunity, convenience, dependence, shared ideology, like causes, common enemies, financial gain and brotherhood. For example, Iran by many accounts has become extremely adept at leveraging a diverse global network of nefarious entities. The balance or equilibrium, referred to by Hart, of this loosely affiliated network is similarly complex, amorphous, and dynamic. We have seen this in over more than a decade of conflict against the network of Al Qaeda.

Arquilla and Ronfeldt are not frequently credited for their concept, articulated as early as 1996, that "it takes a network to fight networks." Today this phrase is unfortunately bantered about and attributed to others, with little of the contextual substance and detailed understanding that made their observation so profound and prophetic. In the aftermath of September 2001 in a follow-on piece entitled "The Advent of Netwar (Revisited)," the authors brought the issue into sharper focus:

It takes networks to fight networks. Governments that want to defend against netwar may have to adopt organizational designs and strategies like those of their adversaries. This does not mean mirroring the adversary, but rather learning to draw on the same design principles that he has already learned about the rise of network forms in the information age. These principles depend to some extent on technological innovation, but mainly on a willingness to innovate organizationally and doctrinally, perhaps especially by building new mechanisms for interagency and multijurisdictional cooperation.⁸

This concept of requiring more dynamic configurations to enable combating networked nefarious actors bears relation to another key work by the same authors written for RAND in 1997 entitled, "A New Epoch and Spectrum of Conflict," that metaphorically describes the paradigm shift required to fight these "netwars" of the future. In this work, the traditional western game of chess is juxtaposed as the frame of reference representing the past against the Chinese game of Go to describe the nature of the strategic paradigm shift to the future.

Thus Go, in contrast to chess, is more about distributing one's pieces than about massing them. It is more about proactive insertion and presence than about maneuver. It is more about deciding where to stand than whether to advance or retreat. It is more about developing web-like links among nearby stationary pieces than about moving specialized pieces in combined operations. It is more about creating networks of pieces than about protecting hierarchies of pieces. It is more about fighting to create secure territories than about fighting to the death of one's pieces. Further, there is often a blurring of offense and defense—a single move may both attack and defend simultaneously. Finally, the use of massed concentrations is to be

avoided, especially in the early phases of a game, as they may represent a misuse of time and later be susceptible to implosive attacks. This is quite different from chess, which is generally linear, and in which offense and defense are usually easily distinguished, and massing is a virtue. Future conflicts will likely resemble the game of Go more than the game of chess.⁹

The work of these two authors will prove over time to be as consequential to understanding warfare in the 21st century as the thoughts of Clausewitz were to the 20th century martial art.

The centrally important role of networks to counter nefarious networks of the 21st century has not been lost upon the US Government after a decade plus of war against the Al Qaeda network. Across innumerable US national security policy documents, the inexorable fact of life that the United States cannot go it alone and must work with other international actors in a comprehensive whole of government manner to achieve common security interests resonates with unmistakable clarity. Former Secretary of Defense Panetta emphasized the importance of this in a speech at the US Institute of Peace in June of 2012 where he said, "In the 21st century, we must build partnerships that enable us to better meet a wider range of challenges. To that end, I see us building networks that leverage our unique capabilities—and the unique strengths of our allies and partners that share common interests—to confront the critical challenges of the future." He reiterated this theme in a briefing at the Pentagon in October while speaking about the ongoing implementation of the new US defense strategy against the backdrop of fiscal challenges when he mentioned that, "one important way that we are going to do this is to strengthen our network of defense Alliances around the globe."

THE NETWORKING OF SOF POWER

With the formidable array of SOF fielded by the United States, some might question the utility and need for closer networking of US SOF with allied and partner SOF around the world. As former Under Secretary of Defense for Policy Ms. Michelle Flournoy once insightfully remarked, allies and partners of the United States are more than “nice to have” or “window dressing,” but are instead essential for achieving our security interests in today’s world. The ultimate strategic utility of SOF power is applying a classic reinterpretation of Sir Basil Henry Liddell Hart’s indirect approach to leverage SOF as a force multiplier and economy of force instrument to upset an adversary’s equilibrium and balance through proactive and preventative insertion, presence, and action in coordination with a multinational collaborative network of SOF networks.

This global networking of SOF through an SOF network of networks will exponentially increase the utility of SOF power and position it appropriately to complement air, maritime, and land power in the 21st century.

A robust and focused effort to build a global SOF network of networks supports the US defense strategy in three major ways. The first is that this global networking of SOF builds relationships that engender trust and confidence among different national SOF elements, enabling more effective, efficient, and coherent multinational employment and collaboration among SOF. The central importance of relationships cannot be overemphasized; in fact this is the center of gravity relative to a multinational SOF network. This is especially important to SOF as they are in most

nations a close-knit insular community stemming from their sensitive strategic and operational work that is inherently classified; often of a low visibility, clandestine, or covert nature; and quite often depends on a high degree of operational security for success and force protection. As a result, collaboration among multinational SOF depends first and foremost upon trust and confidence that underpins relationships between commanders, staffs, and SOF operators. However, without undergirding and codifying these relationships in a habitual, enduring, and substantive manner, working collaboratively alongside allies’ and partners’ SOF will never rise above a baseline threshold of effectiveness. What is required to build these relationships is more than transactional episodic interactions. Transactional relationships, or those forged under the duress of hurried timelines are less effective, as they lack the critical foundation that leads to trust and confidence. The quality of these relationships is proportional to the value and output of the relationships. Substantive and enduring relationships that yield results require an investment of time, energy, and resources. These relationships entail understanding the culture and ethos of the different SOF elements, as well as organizational and individual capabilities, limitations, idiosyncrasies, and terminology. Concepts that engender and foster these enduring relationships among the global network of multinational SOF support the “system of defense Alliances and security partnerships” described by the Secretary of Defense as “one of America’s greatest national security assets.” Secretary Panetta went on to point out that “no other nation in the world really has this asset,” and that “these relationships are sound investments in an era of fiscal challenges and they really do pay dividends.”¹⁰ His assertion on the efficacy of these networks in response to the associated investment reaffirms the findings of seminal studies of network effectiveness by Professors Keith Provan, Brinton Milward,¹¹ and Alex Turrini and others,¹² over

the last decade that indicate network leadership and associated resource munificence are some of the key characteristics required to build effective networks.¹³

The second way this SOF network of networks is supportive of the US defense strategy is by building allied and partner SOF national capabilities for both self-defense and their contribution to future coalition operations. Without the appropriate capability, capacity, and interoperability, allied and partner SOF will not be postured to work effectively alongside US SOF, and therefore will have diminished utility in burden sharing. Secretary of Defense Panetta highlighted the importance of this in remarks at the Pentagon stating, "Indeed, I think it is fair to say that a vital pillar of the new defense strategy that we released this year is the important work of developing and deepening ties to other nations; developing their capabilities and building new Alliances and partnerships to build stability and security. This is one of the keys to the Defense force we are trying to build for the 21st century."

The third and no less critical way in which US leadership of a SOF network of networks supports the US defense strategy is by providing US SOF with peacetime and contingency access. Access not only in a classic sense in terms of infrastructure such as airfields, ports and training opportunities, but more importantly access to information, knowledge, understanding, perspective and legitimacy that are essential ingredients to operating successfully in the complex operational environment of the 21st century. As the 2008 US defense strategy described, "allies often possess capabilities, skills, and knowledge we cannot duplicate."¹⁴ It is for this reason that the global SOF network of networks enables a shared comprehensive understanding of today's challenges, threats, and issues that provides a broad and in depth appreciation for the nature of the problem as a point of departure for designing and implementing collaborative solutions.

CONCLUSION

We recognize that the nature of the nefarious networked adversary is dynamic and complex, requiring an adaptive, agile, and collaborative response. Arquilla and Ronfeldt postulated that applying the networks to fight networks paradigm would require "a willingness to innovate organizationally and doctrinally, perhaps especially by building new mechanisms for interagency and multijurisdictional cooperation." The wars in Iraq, Afghanistan, and the broader "global war on terror" stimulated more collaborative "out of the box" interagency networked collaboration to include that of a multinational nature in some cases, but there is a need to evolve and push the innovation further to enable the application of appropriate lethal and nonlethal authorities, capacities, and capabilities against adversary networks in the most effective, efficient and coherent manner. This innovative principle is well understood by the Commander of US Special Operations Command, Admiral William H. McRaven, who is pursuing multiple efforts along these lines to stimulate and implement precepts originally put forward by Arquilla and Ronfeldt on how to counter the phenomenon of "netwar." The first of these initiatives is to engender and invigorate a multinational collaborative SOF network of networks around the world, and the other is to focus on and enhance a networked US SOF relationship across the US interagency community.

The modern version of the indirect approach is where networks of like-minded actors on today's game board of international security achieve strategic presence through proactive and preventative insertion and activity to undermine the balance and equilibrium of the adversarial networked actors. While networking as described by the Secretary of Defense is not uniquely applicable to SOF, in some cases US SOF alongside allied and partner SOF, are already serving as the vanguard for precisely the type of organizational,

doctrinal, and mechanistic innovation and cooperation described by Arquilla and Ronfeldt over a decade and a half ago. SOF is ideally suited to lead these innovative efforts and serve as an enabler and catalyst to engender greater multinational and interagency collaboration through a comprehensive approach. This global networking of SOF through an SOF network of networks will exponentially increase the utility of SOF power and position it appropriately to complement air, maritime, and land power in the 21st century. 🌐

ENDNOTES

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Scott Morrison is a US Government Civilian who serves as the Director of the Commander's Action Group (CAG) at the NATO Special Operations Headquarters (NSHQ), Supreme Headquarters Allied Powers Europe (SHAPE) (Belgium).

The Threat of Jihad Terrorism

by ME5 Neo Junjie

Abstract:

This essay seeks to explain the persistence of Jihad terrorism, explore the threat posed by it and distinguish between perception and reality in debate on the subject. The importance of incorporating quantitative analysis in the assessment of the terrorism threat is also highlighted. It concludes that the fight against terrorism will need to encompass effective political, economic, diplomatic and military policies targeting the root causes of Jihad terrorism in order to have a positive effect.

Keywords: Global War Against Terror; Insurgency; Jihad Terrorism; Religious Extremism

INTRODUCTION

Political scientist Samuel P. Huntington's 1993 article, "The Clash of Civilizations" suggested that fault lines between civilizations would form the battle lines of the future. His article also predicted a future where the "great divisions among human kind and the dominating source of conflict would (will) be cultural."¹ He divided the world's cultures into seven civilizations, Western, Latin American, Confucian, Japanese, Islamic, Hindu and Slavic-Orthodox.² Two of these identified civilizations stood out: Western and Islamic. The terrorist attacks on Western nations by Muslim extremists in recent years made Huntington's predictions appear prophetic and fueled the belief that religious terrorism, specifically Jihad terrorism, was the great menace to global security.

Ethnic and religious violence have been part of the human condition since antiquity. This combination has been well documented in the literatures of ancient Greece, Rome and India. To make a fair assessment of the threat that Jihad terrorism poses to today's security landscape, it is necessary to understand religious terrorism as Jihad terrorism is fueled by religious motives. Hence, this essay aims to discover



The late Samuel Huntington at the World Economic Forum 2004.

the following: first, the reasons for the persistence of Jihad terrorism; second, an assessment of the threat to global security posed by Jihad terrorism; last, the difference between perception and reality in contemporary and Jihad terrorism.

DEFINING JIHAD TERRORISM

Before assessing the threat posed by Jihad terrorism, it is essential to define and understand this widely politicized and misinterpreted term. Terrorism expert Bruce Hoffman defined terrorism as "the



11 September 2001 attacks on New York City, one of the most prominent acts by Osama bin Laden's Al-Qaeda terrorist group.

deliberate creation and exploitation of fear through violence against civilians in the pursuit of political objectives.”³ It is thus understood that spreading fear is the ultimate goal of terrorists. Religious terrorism is the form of terrorism that draws on extreme interpretations of religious holy texts for rationale and motivation. A religious extremist who participates in a terrorist act is often an individual who believes in a religion and tries to live and act according to his literal interpretation of the holy book without adhering to the moral codes of his religion. In addition, such an individual often adheres to the ritual rather than the tenets of his faith.⁴

Jihad terrorism is a type of international terrorism that draws on extreme interpretations of Islamic beliefs for motivation.⁵ It does not draw relation to any particular national conflict. It is also not accurate to equate Jihad terrorism to Islamic terrorism because they can have different motivations. The best known

exemplar of Jihad terrorism, Osama bin Laden's Al-Qaeda, has aspirations to reestablish a global Islamic Caliphate. In contrast, the Palestinian group Hamas is an Islamic group of terrorists motivated by issues of political power in Palestine.⁶

PERSISTENCE OF JIHAD TERRORISM

Multiple facets seem to have driven the persistence of Jihad terrorism, which in turn drives its conflict with the rest of the world.

Jihad terrorism is the most extreme manifestation of a peaceful phenomenon known as political Islam. Specifically, Jihad terrorism has derived its energy from the friction between the Western and Muslim world. This friction between the two civilizations has played a major role in Jihad terrorism.⁷ Notions such as lack of respect for the Islamic religion, cultural imperialism of the West and oppression of Muslims have fueled Jihad terrorism to varying extents. Jihad is essentially a defensive doctrine, fought against

the perceived aggressors and wayward Muslims, and sanctioned by leading Muslim theologians.⁸ Violence is often justified as a means of last resort to prevent extinction of the identity of the Islamic world against the forces of secularism and modernization. An example of a widely perceived attempt of aggression against the Islamic world is the United States (US) war in Iraq. The war in Iraq has given a substantial boost to the global Jihad movement and is described by the US intelligence community as a *cause célèbre* for Jihadis.⁹

The threat of secularization has also been widely regarded as a catalyst for fueling religious terrorism. Intrusion of secular values into the extremist world and the presence of secular foreign interference provoke self-defensive hostility and aggressiveness.¹⁰ These defensive sentiments against the perceived foreign evils, combined with the emergence of militant clerics, often result in a violent struggle against foreign influences, most often the Western nation states. The ideology of the militant clerics form the theological justification, which has enabled their followers to legitimize their violent acts of terrorism in the name of religious duty.¹¹

Jihad terrorism is the most extreme manifestation of a peaceful phenomenon known as political Islam.

Another popular explanation for Jihad terrorism involves the social and economic conditions in much of the Muslim world. Many world leaders and prominent thinkers have attempted to draw connections between poor economic conditions and lack of education and the outbreak of terrorism. James Wolfensohn, former president of World Bank, remarked, "the war on terrorism would (will) not be won until we have come to grips with the problem of poverty and thus the sources of discontent."¹² While poor social and economic conditions have been a popular explanation for Jihad terrorism, there has also been plenty of

commentary aimed at debunking this explanation. Counter examples, as witnessed in recent years, have shown that economic hardship is often not the driving force behind terrorism. For example, the hijackers involved in the 9/11 terrorist attacks were not socially nor financially compromised. The most prominent Jihadist of our time, Osama Bin Laden, was known to be wealthy. This suggests that poverty and poor social conditions are not the root causes for the persistence of Jihad terrorism. It is important to distinguish between abject poverty and the lack of opportunities for economic and social advancement. Although poverty does not provide a direct cause for terrorism, it remains an important ideological justification for terrorist groups to identify themselves as victims of the modern globalization process driven by wealthy western nation states.¹³

Finally, the age of globalization has also contributed to the persistence of international Jihad terrorism. Through the exploitation of new technologies, previously localized fundamentalist extremist movements can be transformed into global ones. The use of technological advances such as the internet and satellite communications can introduce fundamentalist extremism into the home of every disgruntled believer.¹⁵

PERCEPTION AND REALITY OF TERRORISM

The main focus of terrorism is not the act of terror itself. The immediate victims of an act of terror are not as significant as the broader message conveyed to the general public. Fear has always been a weapon deployed by terrorists in a specific and complex manner to achieve their ultimate objectives.¹⁶ According to the Voice of the People 2006 survey, as much as 92 percent of Americans regard terrorism as a serious threat to the US. The survey furthermore indicated that the public in countries on other continents were as fearful as the Americans of the threat posed by terrorism.¹⁷ Meril James, Secretary General of Gallup International

referenced the survey results and commented that terrorism was a paradox because as much as terrorism divided the world, it also united the world in fear of it.¹⁸ It is difficult to justify the fear, attention and resources devoted towards terrorism when the risk of getting killed in an act of terror is lower than that of being killed in a traffic accident.

Many terrorism analyses lack long-term perspective and neglect the fact that terrorism has existed since antiquity and is not a new phenomenon. Terrorism is often portrayed as a new phenomenon, its prevalence and lethality overstated. The contemporary perception of terrorism does not match reality. Hasty generalizations and disproportionate assessments of the threat posed by terrorism inflate its actual strength. It is essential to incorporate quantitative analysis in assessing the threat of terrorism—simply describing the phenomenon of terrorism using statistical analysis is insufficient. Statistics related to terrorism are often slippery enough to be manipulated to support and demonstrate political objectives. From the perspective of assessing the phenomenon of terrorism, absolute numbers is often less significant as compared to relative trends established from the number of terrorist incidents.

While awareness of terrorism as a security challenge has increased in recent years, the number of incidents maybe decreasing. Quantitative analysis of the number of terrorist attacks and fatalities has in fact reflected a downward trend between 2004 and 2006, as summarized in Table 1. The data on the number of attacks and fatalities were obtained from the Terrorism Knowledge Base (TKB) of the National Memorial Institute for the Prevention of Terrorism (MIPT)—the TKB incorporates all existing RAND data.¹⁹ The data reveals that the number of international terrorist attacks has decreased by as much as 25% and the number of

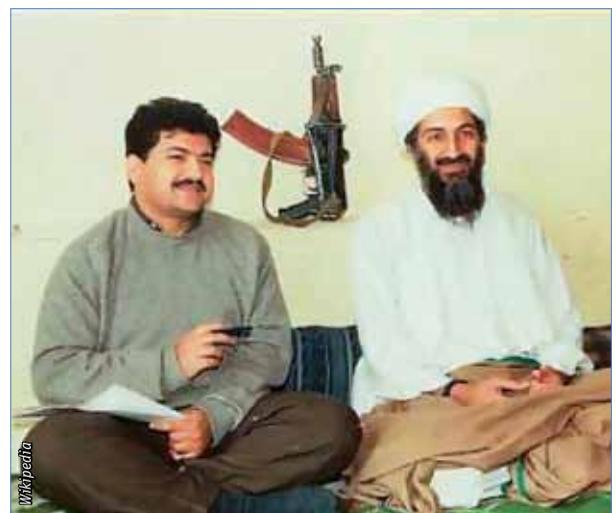
casualties by more than 50% between 2004 and 2006. The perception that international terrorism represents a major existential threat to today's human civilization has not been soundly supported by reality.

International Terrorism	2006	2005	2004
Number of Incidents	233	309	395
Number of Fatalities	294	551	732

Table 1: International terrorism, number of incidents and fatalities (2004-2006).²⁰

Similarly, statistics do not lend claim to Western officials and opinion makers who often refer to Jihad terrorism as a deadly threat to western civilizations and values. In 2006, the data (see Table 2) reflected that citizens in Muslim countries bore by far the largest share of terrorist attacks in the name of Islam. Iraq alone represented almost 60% of the total number of victims of terrorist attacks.

Incorporating quantitative analysis of the statistics related to international terrorism activities produces a conclusion that is contrary to widespread popular belief: contemporary terrorism and Jihad terrorism have declined as international threats. A key part of this is the dismantlement of the Al-Qaeda network. The once disciplined and centralized Al-Qaeda structure has been shattered



Pakistani journalist Hamid Mir interviewing Osama bin Laden.

International Terrorism	2006	2005	2004	2003	2002
Fatalities, of which:	294	551	732	470	970
In Middle East,	168	416	403	327	375
Of which: in Iraq	160	342	350	172	NA
In South Asia	81	53	72	30	102
In South East Asia/Oceania	NA	0	12	42	217
In North America	NA	0	NA	NA	3
In Western Europe	0	0	192*	1	0

*Attacks in Madrid, March 2004

Table 2: International terrorism, number of fatalities by region (2002-2006).²²

but not exterminated by America's war on terror. The shattered terrorism structure is akin to a broken thermometer whose mercury has been shattered into a multitude of small blobs, all highly toxic, but not specifically related to one another.²¹ Jihad terrorism has been transformed into a grassroots phenomenon; home-grown and self-radicalizing terrorism groups, operating without a centralized command but unified by a common worldview.

ASSESSMENT OF THREAT IN THE POST AL-QAEDA ERA

Almost a decade after 9/11, it was clear that Osama bin Laden and his followers have failed to achieve some of their original strategic objectives. There has been no Islamic revolution in Muslim-majority countries and the notion of a global Caliphate has not been widely embraced by Muslim-majority nation states. Much to the contrary, opinion surveys show that the support for universal values of freedom and democracy among Muslims remains strong.²³ Nation states across the world have also strengthened their capacity and capability to combat and counter terrorism.

However, the war waged against Al-Qaeda and its legacy has not been completely won. Al-Qaeda's operations have only been diminished by America's war on terror. Jihad terrorism remains the pre-eminent

terrorist threat of our time. Many others emulate Al-Qaeda's suicide operations globally. Al-Qaeda survived America's war on Afghanistan by reconstituting their operations in Waziristan and regions bordering Afghanistan. Its strategic focus remains unchanged—to inflict maximum harm on United States and its allies.²⁴ Many countries today, including the US, remain at high risk of terrorist attacks. In Europe for example, France has managed to thwart at least three Islamic terror plots in recent years. These plots included initiatives to bomb Paris Metro and Orly Airport.²⁵

The most potent instrument of Al-Qaeda was its ideological capacity, which US and its allies have struggled to counter effectively.²⁶ It managed to utilize the age of globalization, making use of the media to its advantage. Bin Laden succeeded in broadcasting his message of Jihad via the media, enabling transnational terrorism and inspiring individuals and terrorism networks in several continents. Today, the principal threat posed by Jihad terrorism does not come from Al-Qaeda but from terror organizations which Al-Qaeda has inspired.

The casualties directly caused by Jihad terrorism only constitutes to a small proportion of the threat. It has created a climate of suspicion and fear, and fostered divisions between Muslims and non-Muslims.

The most potent instrument of Al-Qaeda was its ideological capacity, which US and its allies have struggled to counter effectively.

Governments also tread on thin ice in a war against terrorism and risk compromising the liberties and rights which they proclaim to uphold.²⁷

The strength of today's Jihad movement is likely obscured by the very counter-terrorism efforts put in place by governments in response, making it difficult to assess the strength of the movement. The future trend of Jihad terrorism would be difficult to predict because the events extraneous to terrorism itself will certainly play a huge role in depicting the course of Jihad terrorism. The future path of Jihad terrorism would be strongly influenced by the political situation in Middle East.²⁸ The policies of the Western nation states, particularly the US, will affect the roots of Jihad terrorism directly, thus shaping the attitude of the followers of Jihad terrorism towards Western nation states.

CONCLUSION

Terrorism is a timeless tactic used by many groups since antiquity for different objectives. There can be no definite and accurate prediction of the overall trend of Jihad terrorism. The current wave of Jihad and Islamist terrorism can be traced back to around 1979, when the Iranian revolution and Soviet Union invasion of Afghanistan led to Jihad movement in Afghanistan.²⁹ As such, the Jihad movement should be considered to have been ongoing for the last three decades. Jihad terrorism became a main concern for the Western nation states in the last decade, particularly after the 9/11 attacks in 2001. It is fair to assume that the Jihad terrorism phenomenon has yet to run its course.

In the effort against international terrorism, it is important to avoid the popular tendency to equate Jihad terrorism with terrorism in general. To rely solely upon intelligence, military and security measures to devise counter efforts against terrorism would likely prove to be futile. The West needs to discourage the knee-jerk response to the Muslim world and the

labeling of any Muslim act as "fundamentalist."³⁰ The generalized and intense contempt in the Western media of Islam pushes many Muslims into an anti-Western stance. The fight against terrorism will need to encompass political, economical diplomatic and effective foreign military policies targeting at the roots and rationale of Jihad terrorism in order to have a positive effect on the fight against Jihad terrorism.

In conclusion, terrorism will never be fully eradicated. Jihad terrorism is not a large-scale threat and it will likely never become one. It is more appropriate to characterize Jihad terrorism as a political and intelligence challenge rather than as a military threat. It is also important to conclude that the West is not the prime and sole victim of terrorism in the name of Islam. Many expect the phenomenon of religious terrorism, specifically Jihad terrorism, to last for a considerable number of years more, possibly a generation. It is critical to carefully examine the nature and causes of Jihad terrorism and assess the lessons and what needs to be done to win the war against it. 🌐

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Ensuring a Capable SAF in a Resource-Constrained Environment

by MAJ Eric Ng Weng On

Abstract:

Our Singapore Armed Forces (SAF) has been undergoing various transformations and improvements over the past decades, resulting in a more robust, efficient and potent organization. However, it is vital that the SAF remains prudent and sharp regarding the utilization and allocation of resources in order to maintain high proficiency in its duties. It is thus important to understand Singapore's increasingly complex and challenging security environment. Creating sufficient capacity within the SAF to handle both conventional and unconventional threats will ensure its effectiveness and relevance in the long term.

Keywords: Conventional and Unconventional Warfare; Operations Other than War; Organizational Capacity; Organizational Resource Management

INTRODUCTION

The first spiral of the Singapore Armed Force's (SAF) Third Generation transformation has resulted in a more integrated and capable SAF. With the adoption of new organizational structures and the employment of new operating concepts and systems, the SAF has become leaner and more potent. Even as the SAF has made significant achievements in the last five years of transformation, the competitive edge we have established could be gradually whittled away if we rest on our laurels. Moving forward, the SAF needs to sustain its operational and capability development efforts by leveraging on the successes of the first spiral, in order to remain relevant and effective.

However, new challenges have emerged. With Singapore's fertility rate hitting a record low of 1.16, the SAF's human resources will inevitably be affected. In facing these challenges, it is essential that the SAF uses its resources, namely money, people, space (i.e. land, airspace and sea) and time, prudently and effectively to sustain its Third Generation transformation while maintaining a high

level of operational readiness. It is also important to understand Singapore's security environment well, in order to identify high payoff areas to invest finite resources in. An increasingly diverse threat spectrum requires innovative solutions in creating the necessary capacity for the SAF to execute its full spectrum of operations. To achieve this, this article argues that the SAF will need to fundamentally relook its mindset towards training and education.

SINGAPORE'S SECURITY ENVIRONMENT AND IMPLICATIONS FOR THE SAF

Anderberg points out that all nations face two types of threat: conventional and unconventional.¹ This remains true for Singapore. As a small nation state, Singapore is extremely vulnerable. While countries like Denmark are involved in tight alliances that stipulate that all countries in the alliance are obligated to come to the aid of any country that is attacked and calls for help (i.e. North Atlantic Treaty Organization, or NATO), Singapore is not involved in such an alliance. Ultimately, we must recognize also that it is only Singaporeans who can defend Singapore. It was not so long ago that Singapore was left to face the Japanese

on our own during the Second World War. It is for this reason that the SAF must continue to be capable of mounting conventional operations even as the need to respond to unconventional threats increases. Nevertheless, the SAF's success has led some to assert that Singapore is not vulnerable but is potentially, the aggressor instead.² So, how vulnerable is Singapore to conventional threats today? The following section will attempt to answer this question by examining Singapore's regional security environment.

In facing these challenges, it is essential that the SAF uses its resources, namely money, people, space and time, prudently and effectively to sustain its Third Generation transformation while maintaining a high level of operational readiness.

REALITY OF CONVENTIONAL THREATS TO SINGAPORE'S NATIONAL SECURITY

Barry Buzan coined the term "security complex" to describe the ASEAN's unique environment. Intra-ASEAN conflicts and geopolitical disputes do exist and Singapore must not take its security for granted.

Notwithstanding diplomatic relations, the balance of power in the region is measured by economic prosperity and political stability; both of which are implicitly secured by military might. While it is essential for Singapore to continue in her diplomatic efforts, should diplomacy fail, we must be in possession of an alternative method of resolution. To this end, Singapore must maintain a credible and capable SAF, in order to back its diplomatic efforts in protecting its national interests and for Singapore to stand shoulder-to-shoulder with its peers in ASEAN. This imperative is also recognized by Minister Mentor Lee Kuan Yew in a recent interview by the *Straits Times*,



Fokker-50 Maritime Patrol Aircraft deployed by the Republic of Singapore Air Force.

who remarked that, “we need a sturdy, strong and capable SAF, not only to defend Singapore but return blow for blow when necessary.”³

GROWING EMERGENCE OF UNCONVENTIONAL THREATS

In the current, post 9/11 world, the threat spectrum faced by Singapore has widened, creating a more challenging security environment. It is therefore no longer sufficient for the SAF to focus solely on conventional capabilities. This section will discuss two key security challenges identified by DPM Teo Chee Hean at the Community of Supply Debate in March 2010: Terrorism and Maritime Security. It will also elaborate on the security challenges brought about by natural disasters in the region.

Terrorism

The most important security threat facing Southeast Asia is the prospect of a thriving franchise of Islamist militancy, which will lead to security problems and violence associated with terrorism.⁴ While the internal threats from Islamists have abated, the threats from Islamists who operate in the deep hinterlands of the surrounding countries still exist.⁵ To address the need for specialized solutions to defend the island state, the Island Defense Task Force was raised with the primary mission of protecting key installations island-wide.⁶ These local security operations are a slice of the operations across the peace-to-war continuum which underscore the SAF’s contributions.

Maritime Security

Since 90 percent of Singapore’s trade is maritime, the security of our regional waters is paramount for our continued economic growth. However, despite coordinated patrols by the respective navies in the region, piracy, illegal trafficking and the intrusion of illegal immigrants have been on the rise, threatening safe passage through the critical sea lanes around Singapore.⁷ Extra-regional threats also pose a security

challenge to Singapore.⁸ Much of the shipping that transits through our ports also passes through the Gulf of Aden, one of the world’s major shipping lanes connecting Asia and Europe.⁹ Piracy in the Gulf of Aden has therefore threatened the interests of Singapore and the international community. Since April 2009, Singapore has remained committed to the security of the Gulf of Aden and the SAF has regularly contributed to the Combined Task Force 151, with assets ranging from a Landing Ship Tank to a Fokker-50 Maritime Patrol Aircraft. Professionally trained to operate both within the region and far away from the Singapore coast, the SAF has and will continue to contribute to the maritime security of the region and beyond.

In the current, post 9/11 world, the threat spectrum faced by Singapore has widened, creating a more challenging security environment.

Natural Disasters

While Singapore has been largely sheltered from any major natural disasters, our neighboring ASEAN countries have not been so fortunate. The 2004 Boxing Day Tsunami and the 2006 Central Java Earthquake are but two examples of disasters that have struck the region in recent history. The devastation caused by natural disasters can debilitate a country’s economy or disrupt socio-political stability in a region, as seen in the 2010 Haiti Earthquake. It is thus in both Singapore’s and ASEAN’s interests that swift aid and assistance are given to any regional country struck by a natural disaster. To this end, the SAF remains as the only organization in Singapore that has the clout, mass, existing organizational structure, resources, technology and operational procedures to cope with the demanding requirements of Humanitarian and Disaster Relief (HADR) missions. Hence, the SAF must continue to be prepared to respond to HADR missions in the future when such situations arise.



MG Ng Chee Meng (now LG and the SAF's Chief of Defence Force) welcoming troops back from Singapore's earthquake relief to Christchurch, New Zealand.

OUR RESOURCE ENVIRONMENT – A GROWING CHALLENGE

There are currently no signs that the threats that exist in Singapore's security environment, both conventional and unconventional, will abate in the near future. In fact, demands on the SAF to respond to such threats are likely to increase, which will invariably place additional stress on available resources. The Singapore government has consistently contributed at between 4% and 6% of its GDP to its defense budget in recent history, regardless of the existing economic conditions. This has allowed the steady build-up of the SAF's capabilities. While this allowed the SAF to become "by far the most advanced military force in Southeast Asia," it is untenable to spend inordinate amounts of resources to sustain

this advantage.¹⁰ Rather, Lui proposed that *Lean Production* (through innovation), *Automation* and *Manpower Savings* (through better utilization) are three solutions that will reduce the armed forces' reliance on resources.¹¹

Moreover, money is not the only limiting resource. Singapore's total fertility rate has been diminishing for the last decade, hitting the a record low of 1.16 in 2010.¹² The pool from which the SAF can recruit from has continued to shrink. As the educational profile of Singapore's workforce improves, the HR landscape has also become much more competitive. While the SAF has introduced new career schemes and enhanced existing ones to address this issue, the seemingly inevitable shrinkage of our human resource may be of concern.¹³

The SAF's success lies not only on its state-of-the-art technology, but its ability to convert the new platforms and systems it acquires into operational capabilities as well. This is no easy task. Operators often require intensive training to gain the necessary skills and expertise to operate new platforms well and, more importantly, operations will need to be adapted to the local environment. Two critical resources are required to do this: space and time. Considering that both conventional and unconventional threats will need to be addressed, how can the SAF train its soldiers, sailors and airmen to conduct the expanding spectrum of operations from peace to war, with limited space and time?

It can be argued that conventional military operations and OOTW, for unconventional threats, are extensions of one another. Conventional military operations represent the high end of the spectrum of capabilities possessed by any military. The skills required for OOTW are largely the same skills required for conventional operations, albeit with appropriately tempered doctrine and judgment to meet the scope of the mission. Nevertheless, there remain capabilities required for OOTW which are not achieved through conventional military training. These include, but are not limited to, policing operations, supporting civil law enforcement agencies and arms control.¹⁴ Loo argued that the most important element required for OOTW is mindset change amongst our soldiers, which is difficult to achieve through conventional military training. To this end, Loo suggested that specialized training for OOTW may be required.¹⁵

CREATING CAPACITY WITHOUT COMPROMISING OPERATIONAL EFFECTIVENESS

It is undeniable that our strategic environment is becoming increasingly more challenging. Considering Singapore's broadened threat environment, growing unconventional capabilities at the expense of

conventional military capabilities, or vice versa, is not an option. It is essential that the SAF remains prudent and continues to balance its operational requirements with available resources. However, with the resource constraints set to become more acute in the future, the SAF will also need to derive innovative solutions to increase its resource space and, in so doing, guarantee its operational effectiveness in the future.

It is essential that the SAF remains prudent and continues to balance its operational requirements with available resources.

The recommendations set forth in this section suggest a comprehensive transformation to create the needed resource space for the SAF to execute its full spectrum of operations. They are aimed at creating capacity when prioritizing between conventional operations and unconventional OOTW missions. As the SAF changes, it must continually innovate process improvements that can be realized quickly even as it seeks to put in place its long-term plan. Fundamentally, the SAF will need to relook its mindset to training, education and character development.

Optimization and Improving Resource Management

Making Full Use of Limited Training Time. Time is the single most important commodity for the SAF, whose Order of Battle (ORBAT) is largely made up of conscripts. To imbue and ingrain its soldiers with the prerequisite knowledge on ethics, leadership, task competencies and type competencies, the SAF invariably forces them to sit through lengthy PowerPoint slideshows.¹⁶ The desire for scientific surety means that military institutions are compelled to commit precious time that could instead be used for training scenarios to prepare them for operational deployments.

Doty and Sowden propose that the military establishment can better save the soldier's time by embedding ethical and character education in "all training venues, all educational experiences, everything."¹⁷ This will ameliorate the demands on

the trainees' limited time as more and more lessons become incidental and integrated as a package. Such a paradigm shift will allow the military establishment to be more productive and efficient, resulting in much fewer resources required in the long run. Through simple process and pedagogical improvements, we will be able to create the capacity for our soldiers to learn more within any given time.

Repackaging Training. For the skills that are explicitly applicable to unconventional operations, there is delineation between skills that can be bundled and imparted as a complete package, and skills that require internalization over prolonged periods. The former refer to distinct and tangible knowledge or action sets, as seen in law enforcement, convoy escort, or road checkpoint operations. Such knowledge can be imparted in one setting and the physical skills can be practiced and executed through standard procedures. It can be formulated into a training package that is easily fitted into soldiers' and units' training cycles.

The latter refer to skills and knowledge that are intangible and difficult to master. These are the cognitive and adaptive skills soldiers require in theatre (e.g. civil-military interactions, dealing with media, analytical skills, adaptive and flexible responses to rapidly changing environments). These skills are more difficult to develop as soldiers need to be immersed in a conducive and challenging environment over time and trained to acquire the necessary behavior and attain high standards of self control, consciousness, and communicative skills.¹⁸ Soldiers can no longer only be trained in reactionary drills, which may dull or suppress their abilities to analyze situations and responses. Other crucial attributes such as cross-cultural awareness can also be nurtured in our soldiers through culture immersion programs, regular volunteer work and school projects.¹⁹

Interagency Cooperation. Exercise Northstar VII in July 2009 demonstrated that OOTW is an expanding spectrum of operations which requires a vast array of competencies that the SAF can no longer sustain alone.²⁰ The effectiveness of interagency coordination for unconventional operations must be stressed and enhanced. Instead of the SAF developing and maintaining all OOTW competencies, the skill sets that are not core to SAF's conventional warfare capabilities may be supplemented by other agencies. For example, in an anti-piracy mission, the naval platform may be from the Republic of Singapore Navy (RSN) while the task force required to perform boarding of ships may be from the Singapore Police Coast Guard. In this way, the scope of unconventional capabilities for the SAF can be rationalized and the SAF can continue to embark on developing conventional warfare capabilities while being able to support unconventional operations. The present issues of jurisdictional rights and authority in joint, unconventional operations can also be avoided.

Such multiagency operations would require close interagency coordination. The current setup of the National Security Coordination Secretariat must be expanded to deliver the enhanced inter-agency coordination. New doctrines will need to be developed amongst participating agencies to achieve quick and seamless response to OOTW. In the SAF, there is already a joint setup that coordinates efforts from the three services, which is the ideal candidate to be part of the inter-agency coordination.

Leaping Ahead

Unconventional Usage of Resources. Making better use of our available resources is an essential part of the recommendation for the SAF to meet the full spectrum of operations required of it. Existing assets must be used in innovative and unconventional ways. For a start the SAF must be more innovative in the use of its conscript population, which is dwindling



Crew aboard the RSS Intrepid, which was deployed to the Gulf of Aden in Operation Blue Sapphire 2012.

in absolute number. Less combat fit resources could be reallocated to frontline operational roles within urban areas instead of being relegated to administrative functions. This can be easily achieved without contravening safety and operational regulations or aggravating their health conditions. Examples in which these people can be deployed include the protection of military/civilian key installations and even drivers of combat vehicles.

Extending Careers and Encouraging Deep Specialization. There are encouraging signs emerging with the introduction of the new service schemes like the Military Domain Expert Scheme, Enhanced Officer and Enhanced Warrant Officer Schemes. These schemes' allowance for career extension and flexibility for deep specialization will allow its personnel to anchor specific domain expertise either in operations, training and logistics even as they advance in their careers. This will allow the SAF to build deep competency in new and existing areas in partnership with its largely National Service (NS) ORBAT. The increasing

push towards outsourcing of certain functions such as vehicle platform training and equipment lessons will free up a large number of its active ORBAT to be involved in new growth areas without compromising operational effectiveness.

Consideration of Defense Science Organizations.

The involvement of defense science organizations in Singapore has been to find weapons and systems to achieve battlefield deliverables. Copley proposes that the defense science organizations should in fact be involved in helping to derive long-term grand strategy threats to national security and to ascertain alternate strategies to achieve national goals. Being at the frontiers of science, they will be able to assist in determining the future technological capabilities and conceptual approaches that will be pursued by the state's potential aggressors. It will allow the SAF to gain the information edge and thus able to react quickly towards the prevention and deterrence of kinetic military operations in the longer term. This

will reduce the financial costs and risk of conflict to the nation.²¹

Fundamental Rethinking of Evaluation and Benchmarking. One possible way of optimizing our training resources is to reduce the evaluation requirements for units which have participated in an OOTW mission. This article has earlier shown that OOTW and conventional military operations are extensions of one another. Therefore, in the conduct of an OOTW mission, the unit(s) involved will be exercising a portion of their capabilities required in conventional operations. While it is essential to uphold the training standards in our combat units to ensure high levels of operational proficiency and readiness, it will be more pragmatic to reduce the evaluation requirements for a unit that has participated in an OOTW mission for that year. The capabilities that were exercised during the OOTW mission can be waived to avoid repetition.

CONCLUSION

Our strategic environment is becoming increasingly complex and challenging. The spectrum of threats that Singapore faces is widening, and in particular, non-conventional threats have grown in significance in recent years. To safeguard Singapore's interests, the SAF can no longer focus on conventional military operations alone. Its people will need to develop skill sets that will better enable them to execute non-conventional, OOTW missions. That said, Singapore is still vulnerable to conventional threats. Without a credible SAF with strong, conventional military capabilities, Singapore will be in a perilous situation and it will be difficult to guarantee Singapore's success in the future.

To avoid this, the SAF will need to develop capabilities to handle both conventional and unconventional threats. Although unconventional threats have become more widespread, it would be

detrimental to focus on unconventional capabilities alone. The SAF will therefore need to focus on developing high-end conventional capabilities since these can be readily scaled down, adaptable and directly compatible for non-conventional, OOTW operations.

This article also acknowledged that there are specific capabilities that need to be raised to support OOTW. Moreover, with resource constraints set to grow as we progress into the future, it would be an even greater challenge to imbue our people with OOTW-specific skill sets. The most daunting challenge for the SAF in the near and distant future would be the options it must prefigure to continue to create capacity. This article has presented several options. Some are low-hanging fruits while others will demand a fundamental shift in mindsets. Creating sufficient capacity within the SAF to handle both conventional and unconventional threats will ensure its effectiveness and relevance in the long term. 🌐

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Deterrence Through Various Confidence and Security Building Measures

by MAJ (NS) Lim Chin Peng

Abstract:

Deterrence is one of the core principles and goals of our SAF, but must be differentiated from the application of deterrence and must be reinforced with various Confidence and Security Building Measures (CSBM), which are non-military instruments of security. Internationally, CSBMs seek to enhance transparency between states, hence providing increased trust and confidence. Domestically, they also work to strengthen national commitment towards defense. These measures are paramount to complementing the overall approach of military deterrence and sustaining peace in the region.

Keywords: Confidence and Security Building; Multilateral Cooperation; Rational Deterrence Theory; Regional Security

INTRODUCTION

"You cannot simultaneously prevent and prepare for war."

– Albert Einstein

The implications for the military on deterrence as a strategic end-state must be intertwined with non-military instruments for a comprehensive approach to defense. While the theory of deterrence is largely sound and rational, it must be differentiated from the application of deterrence where a host of problems can lead to the unwinding of the very deterrence it is meant to instill.

Deterrence must be suitably reinforced with various Confidence and Security Building Measures (CSBM) to ameliorate the implications of this security dilemma and preserve the sustained peace within the region. This is especially pertinent given the historical baggage and perceived vulnerabilities associated with the complexities and undercurrents within the Southeast Asian region.

DETERRENCE

Deterrence can be defined as the "persuasion of one's opponent that the costs and/or risks of a given course of action he might take outweigh its benefits."¹ The epitome of deterrence was demonstrated during the height of the Cold War, where the effects of nuclear weapons were so pronounced that any failure in deterrence would have brought about "mutually assured destruction." Today, deterrence continues to play center-stage in many nations' defense policies, holding the fragile peace in many bilateral tensions such as Taiwan-China or Pakistan-India.

Rational Deterrence Theory

With its theoretical underpinnings based on game theory, classical or rational deterrence theory believes that unilateral military build-up breeds a sense of fear that would cause the potential adversaries to restrain their hostile actions. It hinges on the fundamental assumption of rationality, and assumes that a potential aggressor is rational and will compare the expected

costs and benefits of alternative courses of action before making an optimal choice.² The following three factors can influence the efficacy of deterrence:

Paramount to the entire discussion of deterrence is the qualitative and quantitative **strength of the military**. Beyond the capabilities of weapon systems, and the proficiency and willpower of the soldiers, the planning competencies and leadership of the military leaders and the logistical demands to support the operation are equally important in determining the overall effectiveness of the military.

National credibility refers to the perception of the state's commitment to use force when required to. A strategy based on deterrence can only work if the threat of military retaliation is backed by actual political will to use force.

Should this credibility be questionable, the effect of deterrence can be severely compromised as the perceived cost of waging war against an ineffective adversary drops.³

Effective communications will allow for greater transparency and understanding of intent, and reduce the chances of miscalculation. To this end, the famous hotline established between the United States and Soviet Union during the Cold War was meant to prevent accidentally sending the world into oblivion.⁴ Also, the same transparency can translate to a better understanding of each other's military capabilities. As such, regular bilateral and multilateral exercises can facilitate a "show of force" to enhance the effect of deterrence.

As such, based on the theory and factors discussed, deterrence is strongest when: (1) a state has the capability to impose great costs on a potential adversary; (2) a state is committed to respond to an attack by imposing such costs; and (3) a state's commitments are clearly communicated.⁵

SUCCESS OF DETERRENCE

"... successful deterrence, marked by nothing much happening, is unlikely to get the pulse running."

– Lawrence Freedman⁶

Absolute success in the theory of deterrence would be the outright avoidance of aggression altogether. According to John J. Mearsheimer, military deterrence was clearly demonstrated during the start of World War II. Despite declaring war on Germany for invading Poland in September 1939, Britain and France took no action for nearly a year as they were deterred by the superiority of the German military. Similarly, deterrence may have prevented conflicts from breaking out in Southeast Asia. The increased force modernization in Southeast Asia over the past decades has made the

While the theory of deterrence is largely sound and rational, it must be differentiated from the application of deterrence where a host of problems can lead to the unwinding of the very deterrence it is meant to instill.

military consequences of outright war extremely inhibitive. Coupled with the political and social costs of war, and the complexities of regional dynamics, weighing the decision to go to war

has become a challenging proposition. Indeed, in addition to the prolific literature that has validated the conceptual underpinnings of deterrence, the apparent lack of conflicts within the region provides the best circumstantial evidence that force modernization and the maintenance of militaries have contributed to the efficacy of deterrence.

UNDERMINING DETERRENCE

Despite the apparent efficacy of the deterrence theory in Southeast Asia, deterrence is beset by a host of practical problems. The rational deterrence theory is premised on the rational and deliberated response of states and leaders. However when that assumption or the contextual basis differs, the deterrence effect can quickly go wayward. In addition, difficulty in

communicating the deterrence intent accurately can lead to severe misinterpretation and miscalculation by the recipient.

Perceived Vulnerability

Deterrence requires the principal state to manipulate the cost-benefit considerations of the potential adversary so that the perceived opportunity narrows and aggression is deterred. While the principal state works on developing his military capabilities to increase the cost side of the ledger, such military actions might instead stir feelings of vulnerability and intensify the pressure on the challenger to respond aggressively, to the detriment of the situation.

Absolute success in the theory of deterrence would be the outright avoidance of aggression altogether.

When such perceptions of vulnerability and fear are coupled with an unfavorable strategic environment, the perceptual biases can lead to flawed behavioral responses from the recipient state. In 1914, acts of strengthening military and defensive postures by the French and Russians alarmed the Germans. As a result, German leaders, overrated the hostile intent of their adversaries and eventually concluded that preventive war was inevitable. Deterrence had failed.

If the sense of vulnerability is intense enough, strengthening the deterrence message might actually be construed as a direct threat and will result in a perceived need to carry out an act of brinkmanship. In such cases, the accuracy of the threat is inconsequential; the perceived acuteness of the threat can lead to irrational choices and flawed decisions due to imperfect information. For example, the United States and other Western powers imposed embargoes to check Japan's expansionary ambitions in 1941 but these became the catalyst that led to outright war as Japan feared being deprived of resources.

Beyond perceptions of vulnerability leading to flawed assessments and decisions, acts of deterrence intended for self-defense can also lead to conflict escalation. Such pressures on the challenger can result in conflict spirals where the potential adversary sees the strong actions taken by the principal state as threats. This may oblige it to respond by strengthening its own capabilities or even taking actions that the initial deterrent threat was intended to prevent.⁷ This security dilemma manifested itself in the escalating tensions that led up to the Cold War and the Cuban Missile Crisis.

Responsible increases in military spending must be supported by a corresponding economic growth. As the security dilemma could pressure governments to irresponsibly increase their military spending, it could threaten to derail the society as the wide disparity in economic advancements among the Southeast Asian states would not be able to sustain a prolonged regional arms escalation. After all, the former Soviet Union collapsed largely because of its military buildup being undertaken at the expense of domestic development.⁸

Domestic Tensions and Historical Baggage

"Policymakers who risk or actually start wars pay more attention to their own strategic and domestic political interests than they do to the interests and military capabilities of their adversaries."

– Richard Ned Lebow⁹

As highlighted by Lebow, challengers will frequently focus on their own needs and do not consider, or distort if they need to, the interests and capabilities of their adversaries, the principal states.¹⁰ As such, insensitivity to signals will ultimately lead to the failure of deterrence. In Egypt from 1969-1973, domestic tensions were mounting and political leaders strongly believed that a vindication of the humiliation of the Six-day War could reverse their political fortunes. As such, while they contemplated the use of force on Israel, their deliberation process was largely inner-

directed and focused and oblivious to the military superiority of the Israelis.

Malaysia and Indonesia have tended to redirect frustrations over domestic issues at Singapore and this externalization has often been met with public support and improved election results in the former states.¹¹ Being made the bogeyman of the region can accentuate the sense of insecurity and vulnerability in Singapore and may further fuel the need to sharpen its military and strengthen the deterrence message. This can then drive the security dilemma to a new dimension.

Miscommunication and Misconceptions

Even in the absence of underlying paranoia and perceived vulnerabilities, the difficulty in communicating intent can also lead to the failure of deterrence. Strategies of deterrence generally assume that everyone understands the meaning of barking dogs, barbed wire and “no trespassing” signs. However, given different fundamental beliefs and contextual framing, opportunities for miscalculation and misjudgment can quickly multiply.¹²

MAINTAINING A MILITARY FOR DETERRENCE

The effects of military development has interestingly strengthened the concept of deterrence and yet introduced uncertainties that can potentially undermine it. On balance, the dearth of conflicts within the region has substantiated the efficacy of deterrence.

However, the regional security dilemma still threatens to bring about serious repercussions that, though highly improbable, can have catastrophic consequences. What else can be done to accentuate the desirables of deterrence and reduce the negativities associated with the security dilemma?

CONFIDENCE AND SECURITY BUILDING MEASURES

While the concept of deterrence has been employed by the various Southeast Asian states with varying degrees of success, more can be done to prevent deterrence from fraying and undermining the relative peace and tranquility the region has enjoyed for the past few decades. As such, CSBM, in the form of increased international engagements, should be employed in tandem with deterrence to provide a comprehensive approach to defense.

International Engagement

Increased interaction between states through multilateral forums, dialogues and meetings provide avenues for leaders of states to come together to resolve differences and exploit opportunities for mutual benefit. Such processes allow for greater trust and understanding to be built between these states and also give leaders greater awareness of the concerns and limitations of its neighbors. As identified earlier, deterrence tends to break down in circumstances when perceived vulnerability overwhelms rationality or when miscommunication occurs. As such, these engagement platforms help to increase the transparency and communications between the various stakeholders and in turn reduce the chances of conflict between states. As the world undergoes a period of unprecedented growth and development, issues such as unequal progress between states and competition for limited resources can give rise to disagreements, jealousy or even fracture lines across societies. These require mediation and increased cooperation, and dialogue can reconcile these differences.

Role of ASEAN in International Engagement

Southeast Asia comprises many small states when considered in terms of geography, economic power, or international standing. Even Indonesia, the world's

most populous Muslim country with a total population of 240 million, pales in comparison with regional powerhouses such as India or China. As such, in order to enhance the bargaining power of the region, leaders of the various Southeast Asian countries agreed to form the Association of Southeast Asian countries (ASEAN) in 1967 to bolster the collective voice of this region in the international arena.

For the value proposition of ASEAN to be realized and the international community to take ASEAN seriously, ASEAN needs to project itself as a stable, mature and united body made up of aligned and cooperative members. This provides the impetus for ASEAN members to work together, to resolve differences and to provide a stable, peaceful and conducive environment for trade and development to prosper. This downplays the security dilemma and paranoia between states as they collectively work towards a common vision.

Indeed, it is important to note that given the diverse backgrounds and historical baggage amongst the regional members, it can be difficult for them to

find commonalities and amicably seek optimal solutions. In fact, when ASEAN was founded, these inherent differences were acknowledged and imprinted in the founding principles where a non-interference policy between members was adopted. As such, ASEAN members have actively sought to explore commonalities such as economic growth, social progress and cultural advancement as the key developmental thrusts for members to collectively pursue while it also provides a convenient platform to settle differences and disputes in a peaceful manner.

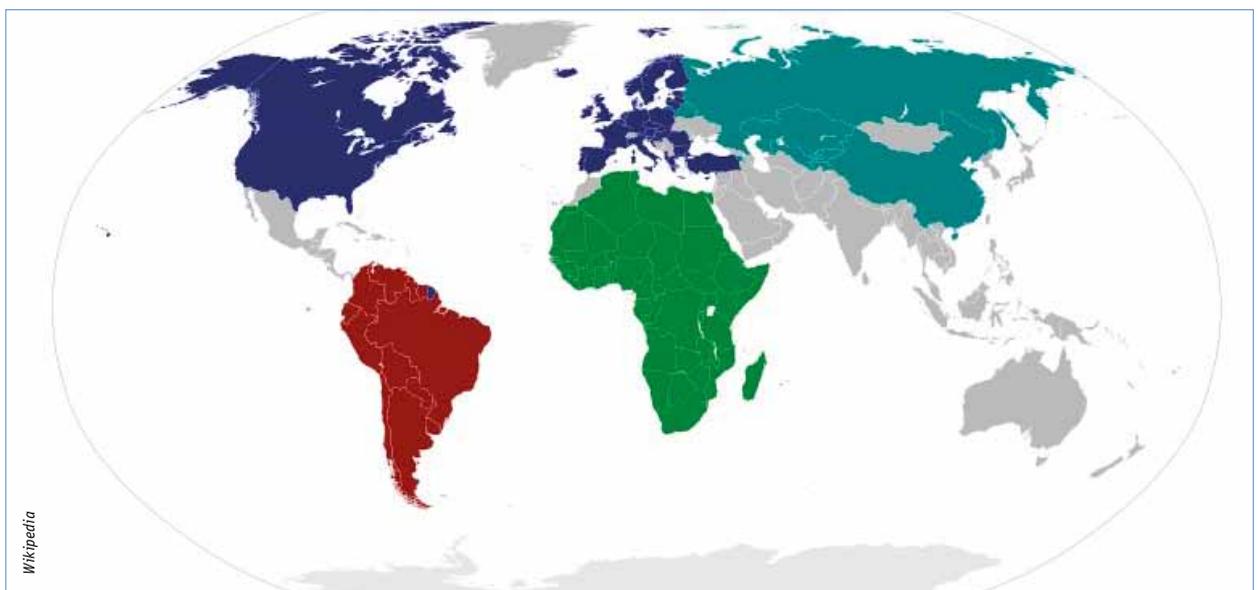
Strategies of deterrence generally assume that everyone understands the meaning of barking dogs, barbed wire and “no trespassing” signs.

As such, ASEAN to date has proved relatively successful as an effective and convenient entity for greater engagements between ASEAN members and the international

community. Beyond the construct of ASEAN, members have also taken an outward looking perspective to engage their international counterparts and cooperate on multilateral agendas and issues.

ASEAN Regional Forum (ARF)

The ARF provides a platform to undertake positive measures and commitment to sustain the momentum of regional political and security



Current major military alliances around the world.



Minister for Defence Dr Ng Eng Hen meeting with Bruneian Deputy Minister of Defence Yang Mulia Dato Paduka Haji Mustappa bin Haji Sirat at the 12th Shangri-La Dialogue.

co-operations within Southeast Asia and in the wider Asia-Pacific region. Since its inauguration in 1994, the ARF has evolved from a forum for confidence-building and preventive diplomacy into a mechanism for resolving conflicts and problems in the region over the longer term.¹³

Since the 9/11 terrorist attack, transnational terrorist threats have emerged as a significant threat. The 2003 Bali bombings and the Jakarta hotel bombings have brought acts of terrorism to the region's doorstep and this reality should be leveraged on to encourage ASEAN members to cooperate. Such closer security cooperation also diverts attention away from conventional security tensions between nations towards collective action by nations against amorphous terrorist entities. Such close defense ties provide opportunities for leaders across the entire hierarchy

to touch base with their various counterparts and this decreases the risk of miscommunication, increases trust and transparency, and ultimately enhances the effects of deterrence.

Accelerated Multilateral Cooperation

As ASEAN matures and grows confident operating as a united entity, it has stepped up efforts to engage regional superpowers such as Japan, China and involve them in their regular meetings. The ASEAN Defence Ministers Meeting-Plus (ADMM-Plus) is a good example. The ADMM-Plus which was inaugurated in 2010 comprise the Defence Ministers of the ten ASEAN countries and eight PLUS countries (i.e. Australia, China, Japan, India, republic of Korea, New Zealand, Russia and the United States). It is a valuable platform that helps to promote dialogue and cooperation among the regional and extra-regional countries.

Shangri-La Dialogue (SLD)

Inaugurated in Singapore in 2002, this annual meeting of defense ministers involves not only ASEAN members but also many regional and global powers, including the G8 members, India, China, Pakistan and South Korea. Aimed at building confidence and fostering practical security cooperation, it is regarded as the premier security conference which seeks to engender a sense of community amongst defense professionals within the regional states and global stakeholders. SLD has also been credited for the conception of a number of multilateral initiatives. The spate of piracy incidents along the Malacca Straits in 2006-2008 spurred Malaysia, Indonesia and Singapore, through the auspices of SLD, to launch the Eyes-in-the-Sky initiative, which has proven effective in reducing such attacks.

Multilateral Military Exercises

Beyond the political sphere, military exercises between two or more armed forces within the region can help to enhance mutual understanding of military competencies. Examples such as EX COPE TIGER and Five Powers Defense Agreement exercises enable military leaders to evaluate their counterparts' capabilities in addition to strengthening the links with them. They also help to advance the security agenda from one of confidence building to that of preventive diplomacy and conflict resolution.

Critical Role of CSBM

Countries are like individuals—they will feel more confident and secure if they have access to information about the various security issues that confront them and their neighbors.¹⁴ The importance of transparency and openness by sharing information on economic and military intentions and capabilities will mitigate the tension within the region and facilitate the search for mechanisms to manage conflicts. They also provide an opportunity to promote confidence and mutual trust



Brunei Darussalam's Deputy Minister of Defence, Dato Paduka Haji Mustappa bin Haji Sirat, the Guest-of-Honour at the Appreciation Night of the ASEAN Defence Minister's Meeting Plus (ADMM-Plus) Humanitarian Assistance and Disaster Relief and Military Medicine Exercise (HADR & MM EX) 2013.

among countries, providing the key to preserving regional peace, stability and security among ASEAN members. Given the historical differences within the region, the need for trust building and openness cannot be over-emphasized.

BUILDING COHESIVE SOCIETIES

Cohesive societies can reinforce the notion of deterrence in two ways. Firstly, a cohesive society minimizes the risks of excessive domestic strife leading to politically motivated conflicts. Secondly, a populace committed to the defense of their nation offers a strong deterrent without the risk of creating a security dilemma.

Concept of Total Defense¹⁵

Singapore adopted Total Defense in 1984 after adapting the experiences of similarly small countries such as Sweden and Switzerland. There were two key

reasons for the move. Firstly, as a young nation with limited resources, Singapore needed to involve every citizen in the overall defense concept. Secondly, as transgressions are no longer limited to the confines of the battlefield, Singapore needed to be prepared for new dimensions such as psychological attacks, piracy and economic sabotage. Given the multiracial and multi-religious profile of the Singapore citizenry, its social fabric must be strong enough to withstand any form of attack.

Through Total Defense, every slice of society is involved in the defense of five main pillars: (1) *Psychological Defense* seeks to strengthen the people's will and commitment towards the nation's future; (2) *Social Defense* seeks to strengthen social cohesion, promote racial and religious harmony, and the construction of a gracious and inclusive society; (3) *Economic Defense* ensures Singapore's continued relevance and economic competitiveness in the globalised world; (4) *Civil Defense* provides protection against civil disasters, and (5) *Military Defense* harnesses the strength of every able-bodied male in the country to form a strong armed forces capable of undertaking a wide spectrum of operations to deter aggression and to protect the country.

Through this comprehensive approach to national defense, the entire nation is mobilized to not only protect against external acts of aggression, but domestic tensions through the articulation of a moderate and inclusive society. A strong and united populace committed to its future offers the best form of deterrence without the negativities associated with the arms dynamic.

CONCLUSION

Militaries have provided the mechanism for self-defense and deterred the potential outbreak of conflict within the Southeast Asian region. While enhancing military capabilities have strengthened the deterrence notion, it has also struck at the perceived vulnerabilities of states and the ensuing security dilemma threatens to upset the delicate balance within the region. Although

the relative peace enjoyed substantiates the validity that maintenance of militaries offer a net positive deterrent effect, the deterrence theory has significant shortcomings that must be addressed.

The various CSBM enhance the transparency and openness through increased channels of communication and will promote trust and confidence between states. Domestically, efforts to strengthen the national commitment towards defense are also extremely desirable forms of deterrence.

In conclusion, while military deterrence is effective, non-military instruments of security must be explored to complement the overall approach to achieving sustained peace in the region. 🌐

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Defense in the Cyber Domain

by ME4 (NS) Weng Zaishan

Abstract:

The proliferation of information and communications technology (ICT) in our everyday lives is becoming increasingly apparent. As such, there are new challenges revolving around cyber security. This article discusses the framework in which the Singapore Armed Forces (SAF) should function and collaborate with others in order to better maintain our cyber network and infrastructure. It also highlights the various changes required for our operations to actively achieve a high level of cyber security.

Keywords: Information and Communications Technology; Cyber Security; Cyber Warfare; Diplomacy and Deterrence

INTRODUCTION

The proliferation of information and communications technology (ICT) can be seen in every aspect of our daily lives. As of 2010, mobile networks are accessible to 90% of the world's population and internet users will surpass the two billion mark.¹ In Singapore, 81% of households had access to the internet by 2009.² The development of ICT has brought the world closer with increased connectedness and collaboration. However, the increase in efficiency and connectivity has created unprecedented interdependency that opens up opportunities for exploitation and sabotage by adversaries. At the national level, the security of these information and communication systems is viewed as a critical aspect of our economic resilience and the creation of a secure, trusted and strategic investment environment.³

With the exploitation of information technologies by the Revolution in Military Affairs (RMA), the network centric warfare of tomorrow sees our competitive advantage greatly determined by the reliability and

effectiveness of the information and communication systems in coordinating operations and ensuring a successful campaign. The increasing dependency of military operations and society on information and communication systems has led to new challenges that entail exploiting and defending the cyber domain.

CYBER DOMAIN

Today, cyberspace has been widely considered the fifth domain of warfare after Land, Sea, Air and Space.⁴ A common definition of the domain remains a challenge. The latest definition by the United States (US) Department of Defense is "a global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers."⁵ Alternatively, the cyber domain can also be viewed as a metaphor for the array of mediums that provide information across the various parties. While it has also been popularly described as a virtual manmade environment, this

is only partly true. The construction of this domain, similar to the previous four domains, is built upon the physical properties and laws of nature. The technology of networks and communications are built upon the use of the physical properties of electrons and photons to transmit, store and modify information. The cyber domain is more clearly described and defined by using a layered approach.⁶

Decision Making
Information
Platforms and Technologies
Electromagnetic Realm

Figure 1: Layered illustration of cyberspace.

The first layer would be the physical **electromagnetic(EM) realm**, where electrons or photons are used as a wired or wireless medium of information transfer. While this physical layer is not visible to the human eye, it is nevertheless defined by the physical characteristics of frequency, wavelength and energy.

The second layer would be **platforms and technologies** that exploit the physical layer. They include all devices on which information can be stored, modified and transmitted through electrons and photons. This would consist of all the network infrastructure and physical hardware such as satellites, radio transmitters and receivers, telecommunications backbone, routers and switches, servers, individual computer nodes, fiber and copper cables, etc.

The third layer consists of **information**. Information is collected, processed, stored, transmitted and received over cyberspace. Some of this personal, financial and secret military information are critical for the proper functioning of many daily activities.

The fourth layer would be that of decision making, which is based on the information acquired. This layer is made up of human interaction and cognition that stems from the information received. It is the domain where perceptions, awareness, understanding and beliefs help make sense of the situation and decide on the strategies to be employed in response.⁷

This layered illustration of the cyber domain will provide the basis for discussion on the common types of attacks that occur in the cyber domain.

CYBER ATTACKS AND THEIR IMPLICATIONS

There are many types of attacks in the cyber domain which could undermine effective information transmission and communication by affecting one or more of the layers described above.

Firstly, we have the conventional attacks on the platforms and equipment supporting the cyberspace environment. Such attacks include physical destruction of equipment and infrastructure such as routers, switches, fiber optic cables, etc. They include high-energy radio frequency (HERF) and electromagnetic pulse generators (EMP) that can be used to destroy electronic equipment.

The increasing dependency of military operations and society on information and communication systems has led to new challenges that entail exploiting and defending the cyber domain.

The next type of attack is a direct attack on the virtual realm targeted at disruption of the services. The most common form is the denial of service (DOS) attack. In 2007,

Estonia fell victim to a huge wave of DOS attacks that originated from a global network of botnets, targeting several government and corporate sites and online services.⁸ Georgia was hit by similar attacks in 2008.⁹

Another form of attack is aimed at sensitive information and involves illegal access, espionage, theft, manipulation, etc. In 2008, classified US military networks were breached through the introduction of malware, resulting in the theft of sensitive data.¹⁰

There can also be indirect attacks via the physical realm which involve shutting down critical networks and infrastructure by disrupting their decision making control mechanisms, such as disrupting the electrical power supply or shutting down satellites that supply targeting data to weapons systems.¹¹

The implications of the cyber attacks can be broadly classified into five aspects: military, social, economy, civil and psychology.

In the military aspect, one of the serious implications is the theft of confidential and sensitive information. As the former US Defense Secretary Robert Gates said, "the US is under cyber-attack virtually all the time, everyday."¹² This was in response to a report showing that US\$300 million worth of information on the F-35 Joint Strike Fighter program was stolen. The Pentagon has also reportedly spent US\$100 million on employing manpower and technology to repair damage from cyber attacks between October 2008 to April 2009.¹³ In network-centric warfare, information plays a very important role in providing situational awareness and strategic planning.¹⁴ Compromising or distorting this critical information can disrupt the coordination and execution of operations.

In the civil aspect, cyber attacks affecting electrical power grids or fuel pipelines could impose huge costs on households, businesses and the public services. An estimate of the cost, with reference to previous incidents, easily reaches US\$6-10 billion for a single incident.¹⁵ Emergency, police and civil defense services would also be overwhelmed by the higher demands.

In the economic aspect, maintaining business continuity and dealing with cyber attacks can result in huge costs for businesses. In a recent report by Symantec, 75% of 2100 businesses surveyed reported experiencing some form of cyber crime in the last twelve months. On average, cyber attacks cost each company £1.2 million each year in terms of lost revenue, branding and customers.¹⁶

In the social aspect, the general public is exposed to hacking and intrusion attempts on their personal computers. Problems also arise when they are "spammed" and exposed to sites that contain extremist ideology, illegal gaming, encouragement to perform petty crimes, etc. It is estimated that social costs related to cyber attacks have cost the Americans about US\$400 billion and Koreans about 70 trillion won.¹⁷

In the psychological aspect, the disruption of services from attacks on critical infrastructure and business operations would affect the psychological state of the country, affecting the will to fight. Another possibility is the creation of unrest and confusion through subversive propaganda. The recent Wikileaks incident, where over 200,000 US diplomatic cables were revealed on the internet, not only caused dismay among Americans, but also undermined the diplomatic working relationships between the US and other countries.

The effects of cyber attacks are wide ranging and affect the military, government, private and public sectors as well as the general public. The extent of damage and seriousness would depend very much on the type of attacks and the agencies behind these attacks. The SAF must work closely with other government agencies (e.g. Infocomm Development Authority of Singapore, National Infocomm Security Committee, Association of Information Security Professionals, Singapore Computer Emergency Response Team), private companies and the general population to deal with the situation.

In the next section, the actors behind these attacks are further discussed to provide insights into their motives and the scale of their attacks.

ACTORS BEHIND CYBER THREATS

Due to the open and low barriers to entry into the cyber domain, there is a wide variety of diverse agencies that seek to manipulate the cyber domain to their advantage. They include governments, criminal

agencies, terrorist groups, malicious hacker groups, individual hackers, unwitting individuals, etc. They can be broadly classified into four categories: nation states, political and ideological extremist groups, organized criminal organizations, as well as individuals who break the law for fame or petty gain.

Nation states are countries that use the cyber domain to their advantage and manipulate it in order to achieve their objectives. Nation states usually have great resources and advanced capabilities at their disposal. The objectives are usually political in nature and range from espionage to intrusion and DOS attacks to full scale operations that could cause physical destruction to the critical infrastructures. In 2007, Israel launched a cyber attack on Syrian detection systems before conducting an air strike on a suspected nuclear facility.¹⁸ Cyber attacks on Estonia in 2007, and Georgia in 2008, which were coordinated with the conflict with Russia, are widely suspected to be linked to the Russian government.¹⁹ As concerns grow, many countries are stepping up their capabilities to conduct cyber warfare, Russia, the US, China, Israel and Iran among them.

Political and ideological extremist groups exploit the cyber domain in two main ways. Firstly, they use the internet as a means to recruit members and spread their ideology and beliefs. This has created a global network of terrorist groups that are decentralized and have flat hierarchies. This is a growing problem and the internet is playing a crucial role in the recruitment of terrorists.²⁰ The number of extremist websites have increased from “a handful in 2000 to several thousand today.”²¹ These terrorist groups could also purchase malware or hire computer experts to perform malicious activities in the cyber domain.

Organized criminal groups make use of advanced cyber tools and technology for fraud, theft, hacking, intrusion and introduction of viruses.²² The underlying intent of such groups is usually financial gain. Heartland Payment Systems disclosed in January 2009 that intruders had hacked their servers to process 100 million payment card transactions per month for 175,000 merchants.²³ Larger criminal groups such as the Asian Triads, Japanese Yakuza and East European Mafia could exploit the cyber domain for serious crimes such as money laundering, drug trafficking and



Members of “Anonymous,” an infamous organization of hackers that conducts cyber attacks.

industrial espionage. These criminal groups may also be used by government agencies to promote a political agenda.²⁴

There are also individuals who act independently and are usually motivated by petty theft, entertainment and amusement, seeking revenge and a sense of satisfaction through disruption or vandalism. These individuals are usually not well equipped and do not cause massive disruption or damage to critical infrastructure.²⁵

Conflict in cyber domain blends crime, political extremism and state sponsored military action in ways that are hard to distinguish and differentiate. The lines between the different actors are also blurring, as can be seen in the use of criminal groups by states to fulfill their objectives or a combined attack by states and individuals who support the same cause. It is thus important to differentiate between common and small scale cyber attacks and devastating ones that cripple day-to-day operations and constitute cyber warfare.

CYBER WARFARE

“For to win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill.”

– Sun Tzu

By analogy to air and sea power, cyber power is the ability to make use of resources in the cyber domain to gain an advantage over adversaries and, if the need arises, to deny or deprive adversaries of such an advantage. In one popular definition, cyber power is defined as “the ability to use the cyber domain to create advantages and influence events in other operational environments and across the instruments of power.”²⁶ The conduct of warfare and operations in the cyber domain takes place in two broad forms. The first is the gaining of *information superiority* in the use of the cyber domain to transmit information, denial of such information to the adversary and collection

of tactical information. The second form of warfare would be to attack enemy morale in a *contest of wills*.

Information superiority provides better situational awareness, leading to better decision making during operations. In contemporary operations that span multiple domains, the military has leveraged on cyber technologies and platforms to gain increasing efficiency in command and control and future battle concepts aim to provide every soldier with a high level of situational awareness and battlefield coordination. These operations can only be maintained with the aid of cyber power.

Efforts cannot stop at the protection and sustenance of these defense networks—there has to be a holistic effort to look into the design, planning and implementation of network architecture, the introduction of rules and regulations in its usage, and the training of personnel to operate effectively and securely in the domain and remain able to function should the network go down.

The **contest of wills** involves either propaganda aimed at manipulating or demoralizing the adversary.²⁷ Asymmetrical operations can be conducted where the effects far outweigh the resources used to stage the attacks. These attacks would be mainly targeted at critical infrastructure, financial databases and information repositories, causing social panic and unrest.

DEFENSE STRATEGIES IN THE CYBER REALM

The next section explores the implications of cyber warfare on the basic tenets of Singapore’s defense strategy, *diplomacy* and *deterrence*, and the importance of *offensive cyber capabilities*.



The International Multilateral Partnership Against Cyber Threats (IMPACT) Global Headquarters, a United Nations-backed cybersecurity alliance.

Diplomacy

In diplomacy, it is important for the definitions of the cyber domain and cyber attacks to be ironed out at the various summits and for the region to work together to combat the problem of cyber attacks. In the long run, more rules and regulations have to be established. At the recent November 2011 NATO summit in Lisbon, the gathered heads of states pledged to combine efforts on dealing with cyber threats. Similarly, regional cooperation could be pledged to deal with the cyber issues collectively in our region. Drawing lessons from other domains such as land, sea, air and space, it will take time and many discussions before an international standard of defined boundaries and common understanding of the cyber domain can be reached.

Deterrence

Deterrence can be developed by a few factors. The first factor to an effective deterrence policy is **resilience**. It is imperative for redundancies, servers

that are able to handle increased network traffic and a secure backup channel, to be established. For critical infrastructure and services, a separate degraded mode of operation that can function without connecting to the wider internet would provide for the worst-case scenario. In the 2007 Estonia incident, the government had to shut off access to the internet to regain control of its systems and block out certain IP addresses. China has companies that control firewall access to guard against cyber attacks. The Infocomm Development Authority of Singapore and National Infocomm Security Committee are working on enhancing the resilience of our ICT systems through initiatives like the Infocomm Security Masterplan where the government and private companies cooperate to reinforce the robustness of critical infrastructures and services. In the same way, there is a need for a dedicated effort to ensure the resilience of defense networks. Efforts cannot stop at the protection and sustenance of these defense networks—there has to be a holistic effort to look into

the design, planning and implementation of network architecture, the introduction of rules and regulations in its usage, and the training of personnel to operate effectively and securely in the domain and remain able to function should the network go down.

The next factor would be **detection and identification**, which is the ability to detect and identify the aggressor. There is a need for active and preventive defense where the attacks are detected even before they breach the system. This would enable early identification and elimination of the threats before significant damage has taken place. The ability of tracing in the cyber domain has to improve so that agencies can be identified and dealt with despite the anonymous nature of the medium. The development of cyber forensics would help the identification of such adversaries.

It is important for the SAF to put continued emphasis on defense network systems to stave off cyber attacks

The last factor would be the possession of **offensive abilities** that could be used against identified aggressors. The ability to reduce cyber domain capabilities and mete out punishment in the form of a counter attack would serve to deter our potential adversaries.



24th Air Force – Air Forces Cyber 33rd Network Warfare Squadron members working hard in a Central Control Facility at Joint Base San Antonio.

Offensive Capabilities

The development of offensive cyber capabilities will add to the effectiveness of the military. The ability to launch cyber operations to achieve information superiority, disrupt and deny our adversaries access to the same and diminish their fighting will be a major advantage in military operations.

CONCLUSION

There has been a rapid increase in the dependence on ICT in all aspects of modern life. Technological advances have resulted in greater efficiency and effectiveness of many existing processes but have also introduced new vulnerabilities that many adversaries seek to exploit.

In this new domain, the general public, private companies, government and military are interwoven and highly interdependent. This calls for greater collaboration to deal with emergent challenges. Today, several initiatives and projects are underway to improve the robustness of cyber networks and infrastructure through the cooperation of stake holders at the national level. Similarly, it is important for the SAF to put continued emphasis on defense network systems to stave off cyber attacks.

New strategies of offense and defense in the cyber domain have to be formulated to deal with new threats. There has to be active management in navigating the rapidly evolving threat landscape of the cyber domain and the development of new cyber capabilities to provide a force multiplier for our own operations. 🌐

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What would Sun Zi Say of Our SAF?

by MAJ Charles Phua Chao Rong

Abstract:

“What would Sun Zi say?” is a commonly used concept to describe how military strategist Sun Zi would perceive a certain organization, event, war or method of operation. In this article, the Singapore Armed Forces (SAF) is assessed under Sun Zi’s principles of warfare. Based on our interpretation of Sun Zi, some of our SAF’s core principles, such as the defense policy of deterrence and diplomacy, mission of swift and decisive victory and trajectory of Third Generation SAF transformation are on the right track. Nevertheless, there are many aspects of Sun Zi’s teachings that are applicable to the SAF today and can be areas of improvement for us.

Keywords: Art of War; Defense Policy; Military Theory

INTRODUCTION

Sun Zi (孙子) is arguably the most famous military strategist in classical China and his *Art of War* is the earliest complete text on military strategy in the world. Sun Zi is ranked amongst the top three military strategists in the world and his *Art of War* is often featured alongside Clausewitz’s *On War* and Miyamoto Musashi’s *Book of Five Rings* on the must read list in military colleges and business schools.

The advice in Sun Zi’s *Art of War* is still relevant to the modern world. It was claimed that planning in both the Gulf War and the Global War on Terror (GWOT) was informed by Sun Zi’s work. General Norman Schwarzkopf, who led the United States (US) and Coalition Forces in the Gulf War, was a student of Sun Zi and employed tactics from the *Art of War* to secure victory.¹ In the Second war on Iraq and war in Afghanistan, ex-Central Command (CENTCOM) Commander, General Tommy Franks, was reportedly also a student of Sun Zi and often found quoting him.² The US Marine Corps’s (USMC) “War-fighting” Manual was inspired by Sun Zi.³ This is because Sun Zi is relevant to both conventional and unconventional wars.⁴



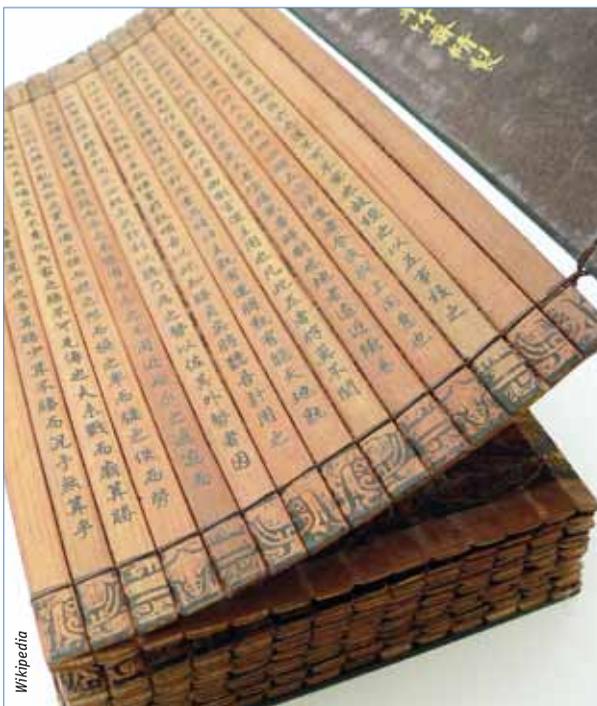
Statue of Sun Zi in Tottori, Japan.

In the academic-practitioner world, “What would Sun Zi say (WWSZS)” became a series of articles that creatively applied Sun Zi’s precepts to modern conflicts. Most notably, it was the application of Sun Zi’s indirect approach on the GWOT that was featured in prominent military-related journals such as Royal United Services Institute (RUSI),⁵ *Military Review*,⁶ and *Comparative Strategy*.⁷ In addition, websites dedicated to Sun Zi also hold a couple of WWSZS articles.⁸

However, Sun Zi’s advice was not limited to the indirect approach. Sun Zi was a practicing general and military strategist to various rulers during the Spring and Autumn Period. A scrutiny of the Chinese text suggests that the *Art of War* was written in an instructive tone to the rulers. Sun Zi’s advice was meant for rulers and not just as a guide to generals and budding military strategists. Hence, this is an effort to re-direct the WWSZS concept towards our Singapore Armed Forces (SAF).⁹ By scrutinizing the text, the author seeks to adopt the hat of Sun Zi, contextualize his advice and attempt to appraise the SAF’s defense efforts. Any congruence in thinking will be identified. Gaps or divergences will also be highlighted and useful growth areas for the SAF suggested. Lastly, where appropriate, the article will attempt to discuss some aspects of the text that might not be relevant to today’s world and suggest an educated usage of Sun Zi.

DETERRENCE AND DIPLOMACY

Sun Zi would be pleased to note Singapore’s emphasis on rational thinking in its policy making and its defense policy of deterrence and diplomacy.¹⁰ In the *Art of War*, “Sun Zi emphasizes rational self-control, stressing the vital necessity to avoid all engagements not based on extensive, detailed analyses of the situation and combat options and of one’s own capabilities.”¹¹ The introductory paragraph of Sun Zi’s first chapter reads, “*warfare is the greatest affair of state, the basis of life and death, the Way (Tao) to survival or extinction. It must be thoroughly*



Sun Zi's Art of War.

pondered and analyzed” (Chap 1).¹² In Singapore, defense is of utmost importance and the entire nation is mobilized for defense through its citizen-army and Total Defense. The national emphasis on defense is evidenced by the stability of defense budget even amid economic crises.¹³

Singapore’s defense policy of deterrence and diplomacy is in sync with Sun Zi’s thinking.¹⁴ Sun Zi opined that the fundamental principle is never to rely on the goodwill of others or on fortuitous circumstances but to guarantee through knowledge, active study, and defensive preparation that the enemy cannot mount a surprise attack or gain a victory through simple coercion.¹⁵ Indeed, Singapore’s experience in the Japanese Occupation taught her to be self-reliant on its own defense and not rely on any outside powers. Through the evolution of her defense policy from the “poisoned shrimp” concept to today’s deterrence and diplomacy, Singapore’s pragmatic build-up of a credible armed forces to project deterrence mirrors Sun Zi’s advice to “not rely on their

not coming, but *depend on us having the means to await them*. Do not rely on them not attacking, but depend on us having an unassailable position” (Chap 8).¹⁶ Indeed, by maintaining one of the most advanced militaries in the region, Singapore has positioned itself in a guarded defense, always ready to achieve a swift and decisive victory, when diplomacy has failed. This stance is in line with Sun Zi’s assessment that “one who excels at warfare *first establishes himself in a position where he cannot be defeated* while not losing (any opportunity) to defeat the enemy” (Chap 4).¹⁷

“The victorious army first realizes the conditions for victory, then seeks to engage in battle. The vanquished army fights first and then seeks victory.”

SWIFT AND DECISIVE VICTORY

Our SAF mission to achieve a “swift and decisive victory” is aptly nuanced with a flavor of Sun Zi.¹⁸ Swiftness is emphasized by Sun Zi in two forms. The strategic/operational victory must be achieved swiftly. As Sun Zi says, “prolonged warfare can only lead to enervation, therefore, *careful planning is paramount* to guarantee the swift execution of the campaign strategy. *No country has ever profited from protracted warfare*” (Chap 2).¹⁹ To this end, our SAF is always ready to deliver the decisive blow in war and attain operational/strategic victory in the shortest time possible. Its citizen-soldiers have been trained to deliver these desired outcomes within the stipulated time limits. Sun Zi alluded to tactical swiftness and said that “it is the nature of *the army to stress speed*; to take advantage of the enemy’s absence; to travel unanticipated roads; and *to attack when they are not alert*”(Chap 11).²⁰ Indeed, speed and mobility is a key emphasis in the Third Generation SAF. The heavy investment in F-15SG fighter jets, AH-64 attack

helicopters, submarines, stealth frigates, Leopard 2A4 Main Battle Tanks and Terrex Infantry Fighting Vehicles are testament to the SAF’s focus on superior mobility and firepower to strike at the enemy’s weakest point.

Our SAF always plans to fight its way to a decisive victory and does not initiate war without rational thought and meticulous planning. As Sun Zi says, “the victorious army *first realizes the conditions for victory*, then seeks to engage in battle. The vanquished army fights first and then seeks victory” (Chap 4).²¹ In another chapter, Sun Zi explained the five factors from which victory can be known:

- One who knows *when he can fight, and when he cannot fight*, will be victorious. SAF fights only in self defense to gain the moral high ground, and will initiate a first strike upon confirmation of the enemy’s offensive intent and plans.
- One who recognizes how to employ large and small numbers will be victorious. In today’s context, the SAF is cognizant of how to optimize its limited resources to devote the most effective troop configuration for various battles.
- One whose *upper and lower ranks have the same desires* will be victorious. The SAF’s emphasis on Commitment to Defense (C2D) and the island’s lack of strategic depth compels the entire nation to fight with one common purpose of national survival.
- One who, *fully prepared, awaits the unprepared* will be victorious. The SAF is always prepared for the defense of its own homeland.
- One whose *general is capable and not interfered with by the ruler* will be victorious. In Singapore’s case, the President and Prime Minister do not interfere with the operational maneuver of the SAF and our generals are selected through a meritocratic system.

These five are the Way (Tao) to know victory (Chap 3).²²

Another guarantor of a decisive victory is our Third Generation SAF's leverage on technology to deliver Precision Maneuver, Precision Information and Precision Fires. Precision Information works to deliver accurate, relevant and timely information and intelligence to the Maneuver and shooters to effect a decisive blow on the enemy's weaknesses. Coupled with deep strategic and operational analysis and planning of the enemy's center of gravity, our SAF is able to do as Sun Zi would have advised, "to effect an unhampered advance, *strike their vacuities*. Thus if I want to engage in combat, even though the enemy has high ramparts and deep moats, he cannot avoid doing battle because *I attack objectives he must rescue*" (Chap 6).²³ Indeed, it is with such well integrated technologies, doctrines and trained soldiers that our SAF has the confidence to push forward to attack. The battle is already half won in our minds as Sun Zi would agreeably advised that, "being unconquerable lies with yourself; being conquerable lies with the enemy. Thus *one who excels in warfare is able to make himself unconquerable* but cannot necessarily cause the enemy to be conquerable. One who cannot be victorious assumes a defensive posture; *one who can be victorious attacks*" (Chap 4).²⁴

COMMITMENT TO DEFENSE

The citizens and soldiers' will to fight (WTF) is our key to victory. Since Napoleon's *levée en masse*, war has been a national effort and Singapore is fortunately a cohesive nation in line with Tao mentioned by Sun Zi. "The Tao causes the people to be fully in accord with the ruler. Thus they will die with him; they will

live with him and not fear danger" (Chap 1).²⁵ In addition, Singapore's lack of strategic depth also reinforces our strong will to fight for national survival. As Sun Zi says, "*when there is no alternative, they will fight. Cast them into hopeless situations and they will be preserved; have them penetrate fatal terrain and they will live. Only after the masses have penetrated dangerous (terrain) will they be able to craft victory out of defeat*" (Chap 11).²⁶

As Sun Zi says, "the essential problem of command is forging a clearly defined organization that is in control of *thoroughly disciplined, well-ordered troops*. The critical element is spirit/morale, associated with will and intention, when the men are well-trained, properly fed, clothed, and equipped, and if their spirits are roused, they will fight vigorously."²⁷ Hence, the C2D and WTF of our soldiers are not a given and are constantly honed with our C2D efforts and tough training. Our C2D efforts engage our servicemen and their families to reinforce the commitment to Singapore's defense (morale) through better cognitive and affective understanding and dual way communication. As Erwin Rommel said, "the best form of welfare is tough training". Indeed, the SAF offers no-nonsense training to our 18 year

The critical element is spirit/morale, associated with will and intention, when the men are well-trained, properly fed, clothed, and equipped, and if their spirits are roused, they will fight vigorously.



Specialist cadets in the field undergoing outfield training.

olds with the aim to strengthen their physical and mental resilience and build character. Our “rewards and punishments provide the basis for control but every effort is made to foster and maintain the proper attitude of desire and commitment on the part of the men,” as Sun Zi would have advised.²⁸ As a result, our SAF citizen-soldiers can be relied upon to enter the fight with resolve.

PUBLIC-SPIRITED GENERALS

To attain victory, men with high spirits need to be led by good generals. To Sun Zi, “the general encompasses *wisdom, credibility, benevolence, courage and strictness*. A general who *does not advance to seek fame*, nor (fail to retreat) to avoid (being charged with the capital) offence of retreating, but seeks only to preserve the people and gain advantage for the ruler is the state’s treasure” (Chap 10).²⁹ To this end, the Singapore government should be credited for its national emphasis on talent development. Notwithstanding its flaws, Singapore’s meritocratic system ensures that the best emerge; in the SAF, the criteria would likely include decisive leadership, intellectual prowess, fitness and courage. The Singapore government’s leadership ideal of a Confucian gentleman also compels its budding leaders to hone their wisdom, benevolence, credibility, self-discipline and humility.

COLLECTIVE APPRECIATION OF SITUATION PROCESSES

Besides having good people (generals and men), having good staff processes such as the Collective Appreciation of Situation (CAOS) of Terrain, Relative Combat Power (RCP) and Time and Space, are equally important. It is indeed surprising and reaffirming that Sun Zi adopted a similar comprehensive analysis process 2,500 years ago.³⁰ In sequence, Sun Zi shared that “*terrain* gives birth to measurement; measurement produces the estimation (of forces). *Estimation* (of forces) gives rise to calculating (the numbers of

men). Calculating (the numbers of men) gives rise to weighing (strength). Weighing (strength) gives birth to victory” (Chap 4).³¹ Although the emphasis on time and space was not featured as doctrine by Sun Zi, speed and agility is no less emphasized in the army’s need “to stress speed ... and to attack when they are not alert” (Chap 11).³²

EMPHASIS ON INTELLIGENCE

Sun Zi repeatedly emphasized the need for good intelligence to seek out and gain detailed knowledge of the enemy through all available means, including the rigorous employment of spies. The most famous quote on this is perhaps, “thus it is said that one *who knows the enemy and knows himself will not be endangered in a hundred engagements*” (Chap 3).³⁵ Indeed, Sun Zi even devoted chapter 13 to employing spies to gain advance knowledge of the enemy’s true situation (Chap 13). However, besides articulating five types of spies (local, internal, double agents, expendable and living spies), Sun Zi cautioned that unless someone has the *wisdom of a Sage, is benevolent and righteous, is subtle and perspicacious*, he cannot employ spies and importantly cannot perceive the substance in intelligence reports (Chap 13).³⁶ Hence, the important aspect of employing spies is knowing how to decipher the signal from the noise and this is where analysis comes in.

To this end, perhaps the ongoing “Every Soldier a Sensor” project is a wise empowerment initiative for combat troops to feed combat intelligence to higher echelons.

With the inauguration of Military Intelligence Organization (MIO), the SAF Intelligence has made significant steps in sharing intelligence, collaborating in analysis, collection, production and capability development across the Services. The outcome is a more integrated SAF Intelligence outfit with closely knitted processes and linkages as well as

faster delivery of accurate, relevant and timely intelligence to consumers. This is no easy feat and many other armed forces attempting this face intense inter-service rivalry.

This progress of SAF Intelligence allows the move towards achieving the true pinnacle of excellence, as envisioned by Sun Zi. “Subjugating the enemy’s army without fighting is the true pinnacle of excellence. Thus the highest realization of warfare is to *attack the enemy’s plans*, next is to attack their alliances, next to attack their army and the lowest is to attack their fortified cities” (Chap 3).³⁷ Conceptually, the investment in intelligence allows our SAF to have deep knowledge of the enemy and keep tabs in order to attack the enemy’s plans at the earliest instance.

Perhaps the one key suggestion for SAF Intelligence from Sun Zi is on how to better use Operations to gather Intelligence and assess intent—more proactive Int-Ops analysis. As Sun Zi advised, “critically analyze them to know the estimations for gain and loss. *Stimulate them to know the patterns of their movement and stopping*. Determine their disposition of force (xing² 形) to know the tenable and fatal terrain. *Probe them to know where they have an excess, where an insufficiency*” (Chap 6).³⁸ To this end, perhaps the ongoing “Every Soldier a Sensor” project is a wise empowerment initiative for combat troops to feed combat intelligence to higher echelons.

MAXIMIZING THE RELEVANCE OF SUN ZI

Notwithstanding the aforementioned aspects of the SAF that Sun Zi would agree with, there are other advice in the Art of War that may be useful for SAF’s consideration.

Deeper Study of Terrain

Sun Zi emphasized the importance of terrain and devoted Chapters 8, 9, 10 and 11 discussing aspects of terrain. “One who does not know the topography of mountains and forest, ravines and defiles, wetlands and marshes cannot maneuver the army. One who does

not employ local guides will not secure advantages of terrain”(Chap 11).³⁹ Such detailed terrain study may have useful insights to the modern context, albeit there is a need to decipher the figurative speech and holistically understand its application. For instance, in Chapter 11 on Nine Terrains, Sun Zi mentioned “the different types of terrain: dispersive, light, contentious, traversable, focal, heavy, entrapping, encircled and fatal terrain. Amongst which, the author opined that contentious terrain, if occupied, will be advantageous to us and vice versa for the enemy, is closely similar to SAF’s critical terrain; and the focal terrain, which is land of the feudal lords surrounded on three sides such that whoever arrives first will gain the masses of All under Heaven, approximates to key terrain. However, the other types of terrain are worth further studying into (Chap 11).⁴⁰ For instance, encircled terrain, whose entrance is constricted, the return is circuitous and with a small number they can strike our masses, is a useful terrain concept to compensate RCP disadvantage with terrain advantage. Sun Zi recommends to obstruct any openings” (Chap 11).⁴¹

Terrain remains key to SAF’s CAOS processes. Perhaps there is scope to understand the intricacies of different types of terrain and how that may be better exploited to our advantage. Sun Zi’s articulation is a humble attempt to make explicit the tacit terrain knowledge gained during his time. Not all will be relevant today but it can serve as a baseline upon which our experienced senior commanders and terrain specialists can continue the discourse.

Sun Zi and Maneuver

Sun Zi sought to maneuver the army into a position where it enjoyed such a great tactical advantage that the impact of its attack, the impulse of its “strategic configuration of power” (shi⁴ 勢) would be like the sudden onrush of water cascading down from the mountain peaks. Deploying the troops into a suitable configuration (xing² 形), *creating a favourable “imbalance of power,” concentrating forces on focused targets*, exploiting advantages of terrain

and stimulating the men's spirits would all be *directed towards this moment, towards this decisive objective*.⁴²

Sun Zi's maneuver doctrine requires "the prosecution of military affairs according with and (learning) in detail the enemy's intentions to focus (his strength) towards the enemy" (Chap 11).⁴³ The desired outcome is to "*compel men and not (be) compelled by other men*. In order to cause the enemy to come on their own volition, extend some (apparent) profit. In order to prevent the enemy from coming forth, show them (the potential) harm. ... Go forth to positions to which he must race. Race forth where he does not expect it" (Chap 6).⁴⁴

Conceptually, maneuver warfare is the cornerstone of our Third Generation SAF. When we speak about Precision Information, Precision Fires and Precision Maneuver, it is about getting ahead of the enemy's "Observe, Orient, Decide, Act" (OODA) loop, i.e. to out-maneuver the enemy. Hence, there is merit for our SAF to complement our "Western" understanding of maneuver warfare by studying the nuances articulated by this "Asian" maneuver advocate.

ORTHODOX AND UNORTHODOX TACTICS

Sun Zi's basic strategy focuses on manipulating the enemy, creating the opportunity for an easy victory. To this end, he classifies the types of terrain and their exploitation; advances numerous tactics for *probing, manipulating and weakening the enemy*; conceptualizes the tactical situation in terms of extensive series of mutually defining elements and advocates *the employment of both orthodox (zheng⁴ 正) and unorthodox (qi² 奇) troops to wrest the victory*. The enemy is lured into untenable positions. The basic principle is to "*go forth there they do not expect it, attack where they are not prepared*."⁴⁵

To Sun Zi, "what enables the masses of the Three Armies to invariably withstand the enemy without being defeated are the unorthodox (qi² 奇) and orthodox (zheng⁴ 正). The unorthodox and orthodox

mutually produce each other, just like an endless cycle. *Thus one who excels at moving the enemy deploys in a configuration (xing² 形) to which the enemy must respond. He offers something which the enemy must seize*. With profit he moves them, with the foundation he awaits them. Thus one who excels at warfare seeks (victory) through the strategic configuration of power (shi⁴ 势), not from reliance on men. Thus he is able to select men and employ strategic power (shi⁴ 势)" (Chap 5).⁴⁶ A balance of orthodox and unorthodox tactics is useful to complement our SAF's lack of troop-count. Apt use of such tactics will create opportunity for easier victories with less troop casualties.

CONCLUSION

Contextual understanding of Sun Zi and the deeper principles of warfare articulated in the *Art of War* are important. This is especially so when the Chinese language is figurative and contextual. Baring any translation error, Sun Zi could not have written a treatise that is perfectly relevant for millennia to come. Some aspects of the *Art of War* might be irrelevant to modern warfare and the SAF. For example, Chapter 2 suggests that "the state is impoverished by the army when it transports provisions far off. The wise general will (should) concentrate on securing provisions from the enemy. Treat the captured soldiers well in order to nurture them (for our use). This is referred to as "conquering the enemy and growing stronger." (Chap 2)⁴⁷ This may not be as relevant in the Westphalian state system where citizens and soldiers of the nation-state are assumed to be loyal to the war effort and would not side with the invading army. Other examples include the doctrine on incendiary (fire) attacks,⁴⁸ and manipulation of qi (气).⁴⁹

Notwithstanding, Sun Zi's advice is still broadly relevant to the SAF. Based on a hermeneutic interpretation of Sun Zi, the SAF's defense policy of deterrence and diplomacy, our mission of swift and decisive victory, trajectory of Third Generation SAF Transformation and emphasis on C2D and Intelligence

are on the right track. Nevertheless, there are some aspects of Sun Zi, such as maneuver warfare, that may also be relevant to our SAF at the strategic, operational and tactical levels. This would increase Singapore's conceptual "strategic depth" which would in turn give us an advantage over our enemies. The high education level of the SAF's citizen army is well poised to support this transformation to allow the SAF to "subjugate the enemy's army without fighting."⁵⁰ 🌐

ENDNOTES

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2. P. Harmsen, "Chinese Military Philosopher Sun Zi Looms Over Iraqi Battlefield," *Agence France Presse*, 27 March 2003. Wee, C. H., *Sun Zi Art of War: An Illustrated Translation with Asian Perspectives and Insights*. (Singapore: Prentice Hall, 2003), 1.
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4. Gulf War was a conventional war and fighting it using Sun Zi's indirect approach delivered an overwhelming victory. The GWOT was an unconventional war against unseen enemies (terrorists) and hence the entire force needs to fully understand Sun Zi's indirect approach in order to fight against the terrorists who are arguably also using the indirect approach. In both types of conflict, Sun Zi remained relevant. The fact that Sun Zi was used by the USMC was because Sun Zi was a key proponent of maneuver warfare.
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20. *Ibid.*, 179.
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22. *Ibid.*, 162.
23. *Ibid.*, 167.
24. *Ibid.*, 163.
25. *Ibid.*, 157.
26. *Ibid.*, 179, 182.
27. *Ibid.*, 156.
28. *Ibid.*, 156.

29. Ibid., 157, 177.
30. "As for military methods: the first is termed measurement; the second, estimation (of forces); the third, calculation (of numbers of men); the fourth, weighing (relative strength); and the fifth, victory." (Chap 4) Ibid., 164.
31. Ibid., 164.
32. Ibid., 179.
33. Ibid., 155.
34. "Thus it is said that one who knows the enemy and knows himself will not be endangered in a hundred engagements. One who does not know the enemy but knows himself will sometimes be victorious, sometimes meet with defeat. One who knows neither the enemy nor himself will invariably be defeated in every engagement." (Chap 3) Ibid., 162.
35. Ibid., 185.
36. Ibid., 185.
37. Ibid., 161.
38. Ibid., 168.
39. Ibid., 182.
40. Ibid., 178.
41. Ibid., 181.
42. Ibid., 156.
43. "The prosecution of military affairs according with and (learning) in detail the enemy's intentions. If one then focuses (his strength) towards the enemy, strikes a thousand li away, and kills their general, it is termed 'being skillful and capable in completing military affairs.'" (Chap 11) Ibid., 183.
44. Ibid., 166.
45. Ibid., 155.
46. "What enables the masses of the Three Armies to invariably withstand the enemy without being defeated are the unorthodox (qi²) and orthodox (zheng⁴). The unorthodox and orthodox mutually produce each other, just like an endless cycle. (Simulated) chaos is given birth from control; (the illusion of) fear is given birth from courage; (feigned) weakness is given birth from strength. Order and disorder are a question of numbers; courage and fear are a question of the strategic configuration of power (shi⁴); strength and weakness are a question of the deployment of forces (xing²). Thus one who excels at moving the enemy deploys in a configuration (xing²) to which the enemy must respond. He offers something which the enemy must seize. With profit he moves them, with the foundation he awaits them. Thus one who excels at warfare seeks (victory) through the strategic configuration of power (shi⁴), not from reliance on men. Thus he is able to select men and employ strategic power (shi⁴)." (Chap 5) Ibid., 164-165.
47. Ibid., 160.
48. In chapter 12 on Incendiary Attacks, Sun Zi articulated five types: incinerate men, provisions, supply trains, armories and formations, in that order. (Chap 12) While the order of priority is inherently sound, the modern attacks are not limited to incendiary attacks. Ibid., 183.
49. In chapter 7 on Military Combat, Sun Zi suggested that "the qi (read as morale) of the Three Armies can be snatched away; the commanding general's mind can be seized. For this reason in the morning their qi is ardent; during the day their qi becomes indolent; at dusk their qi is exhausted. Thus one who excels at employing the army avoids their ardent qi and strikes when it is indolent or exhausted. This is the way to manipulate qi." (Chap 7) Ibid., 170.
50. Ibid., 161.



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The Y Factor: Managing the New Generation of Soldiers

by CPT Jireh Ang Jianrui

Abstract:

The biggest factor dividing our society is not gender, race or income but generation. Distinct differences among baby boomers, Generation X and Generation Y, due to their unique formative environments, significantly impact various aspects of management. This article aims to address the issue of Generation Y in the Singapore Armed Forces (SAF) workforce by dissecting the tri-generation workforce, identifying areas in management that have transformed them and contextualizing measures to embrace Generation Y in the SAF.

Keywords: Generational Change; Organizational Communication; Organizational Management; Generations X and Y

GENERAL CHANGE

Change is constant in the landscape of management and leadership, ever so within the context of the Singapore Armed Forces (SAF). As the SAF ventures past the first decade of the 21st century, it has seen many changes in its operations. The ever apparent threat of terrorist activities, the permutation of knowledge centric warfare, technological advances and the fluctuating security landscape which we face today, bears little resemblance to what we encountered a mere decade ago.

Generational Changes

As a country, we are facing an aging working population. By the end of 2035, a third of the workforce will be over the age of 65, and by 2050, the proportion of Singaporeans of working age will shrink from the 70% of today to 56%.¹ This shortage of labor is largely due to the retirement of the country's largest generation, the baby boomers.

In light of the departure of senior members from the workforce, a generational shift in the demographic composition of organizations is becoming apparent.

Generation X has stepped into the gaps left by baby boomers and, more recently, a new wave of workers, Generation Y, has become the next viable source of talent.² The workforce composition today is unprecedented. Conventionally, older generations occupied senior managerial positions while the younger ones operated on the front lines. Today, scenarios where teams of diverse ages work on a project, where leaders have to manage different generations, or even where younger generations manage older colleagues, are common practice.³

As such, without truly understanding the different values and perspectives that each generation brings to the work place, potential for misunderstanding is great.⁴ The challenge for organizations, including the SAF, is the overall attraction, retention, development and management of Generation Y and the integration of the different generational groups.⁵ If managed appropriately, the SAF will be able to handle the impending drought of workers and leverage the multigenerational workplace for competitive advantage.⁶



Three generations of officers in a family, including one from Generation X and one from Generation Y.

Changing the SAF

In managing and integrating the tri-generation workforce, there is a danger in becoming too accommodative and losing sight of the very purpose of our armed forces. Although advances in management have largely been made by the private sector, we must view their practices and strategies as guides to our own and not absolute rules. Regardless of the issues that the SAF faces, LG (Ret) Desmond Kuek, then-Chief of Defence Force, writes in *POINTER* supplement *Reflections on Leadership* that we must not change our emphasis on our mission, our values and our people.⁷

In the workplace, baby boomers tend to pursue promotion by working long hours and demonstrating loyalty.

This essay seeks to address the issue of Generation Y in the SAF workforce. It will begin by examining the generations that make up the workforce through which key attributes that shape their being are highlighted. The following section builds on this understanding and identifies critical areas in management that are in the process of being transformed. Finally, the article sets to contextualize and discuss measures to embrace Generation Y in the SAF.

PROFILING OF GENERATIONS

Research has shown that the biggest factor dividing our society is not gender, race or income but generation.⁸ A generation is defined as a group of identifiable individuals that share both birth years and significant life events at critical developmental stages.⁹ The context in which a generational group develops impacts their personality, feelings towards authority, values, and beliefs about organizations, work ethic, goals and aspirations for their work life.¹⁰ Due to the fact that generations are defined based on a range of birth years, “cuspers,” those born near the transitional periods between generations, possess a varied perspective on the formative events of the whole. The earlier wave of a generation may tend towards the older generation while the tail end wave towards the younger.¹¹ As such, each generation and wave is likely to develop distinct preferences and traits that distinguish their feelings toward work and what they desire from work.¹²

Values and perspectives that the different generations bring to the workplace will ultimately influence the organization. SAF leaders must therefore continue to adapt and groom future leaders in a reciprocal process to compliment and evolve the SAF’s culture, ethical issues and human resource policies and procedures.¹³ Misunderstandings, miscommunications and mixed signals are but some of the issues a manager will experience should they choose to ignore the differences between generations.¹⁴

There is a pitfall however, with labeling and irrationally stereotyping individuals simply based on generation.¹⁵ Although profiling individuals based on their shared generational characteristics allows for efficient and sustainable management, the SAF will ultimately need to strive for personalized leadership styles to benefit the entire workplace.¹⁶

Currently, there are three generations operating in the workforce: Baby boomers, Generation X and Generation Y. The following section does not intend

to objectify people into mere paragraphs, but instead, with broad strokes, aims to perpetuate understanding and appreciation of each generation.

Baby Boomers

Baby boomers represent the population of individuals born between 1946 and 1964. They currently make up an estimated 28.3% of the Singapore population and 38% of the workforce.¹⁷ Currently, members of the baby boomer generation occupy senior positions in most established organizations. Their influence is expected to continue for the next decade or so, as most will retire between 2010 and 2020.¹⁸

Baby boomers spent their formative years weathering great social and political change. They witnessed an assortment of human rights movements, racial tensions and the eventual independence of Singapore.¹⁹ Baby boomers have therefore developed into a resilient and flexible generation, seen in their

embrace of technology and collaborative management style.²⁰

Due to their relatively large population, baby boomers wield great influence over society, business, and the economy.²¹ This vast size also fostered a sense of competitiveness within baby boomers to outperform each other and be recognized.

In the workplace, baby boomers tend to pursue promotion by working long hours and demonstrating loyalty. So passionate are they about their work, their identity has become intertwined with their career. As such, they constantly strive for success-oriented goals, such as financial security, independence, and a sense of accomplishment.²²

Generation X

Generation X represents individuals born between 1965 and 1979 and currently make up an estimated 24% of the population and 38% of the workforce.²³



Generation Y Officer Cadets of the 80th Officer Cadet Course graduating at the SAFTI MI parade square.

During their formative years, Generation X experienced the highest number of dual income households, divorce, abortion rates and the most permissive parenting habits. Economically, Generation X found themselves with the highest child-poverty rates, experienced the lowest homeownership rates and received the lowest wages since the Great Depression.²⁴

Generation X developed a strong sense of independence as they had to be self-reliant.²⁵ Many became cynical and never developed strong connections to institutions as they saw many of their career-devoted parents eventually retrenched due to downsizing.²⁶

Generation X therefore became independent, goal-oriented entrepreneurial thinkers at ease with information and technology. Ironically, their self-sufficient attitude, entrepreneurial impulse and technological savvy nature made them some of the most sought-after workers in today's workplace.²⁷

Generation Y

Representing those born between 1980 and 1995, the newest members of the workforce, Generation Y, make up an estimated 21% of the population and 20% of the workforce.²⁸ Children of baby boomers, they have currently taken positions of low to middle management.

Many were raised in two-parent households from the baby boomer era. As baby boomers placed a strong emphasis on the raising of their children, they supported activities to enrich and enhance the quality of life for Generation Y.²⁹ Greatly influenced by education-minded parents, Generation Y believe that education is the key to their success, and are poised to be lifelong learners. The beneficiaries of constant input and feedback, encouragement, and motivation made them self-confident, self-reliant, independent, goal oriented, educated, articulate and idealistic.³⁰

With increased exposure to various cultures, Generation Y is more likely to embrace diversity than all previous generations. Through perpetuation of Generation Y and future generations, the uniqueness of individual racial and ethnic groups is expected to fade.³¹

Raised in an environment where societal issues such as global warming and illegal whaling are highly documented, Generation Y have become the most socially conscious generation.³² In spite of their social orientation, Singaporean youths possess relatively low motivation towards supporting a national cause, yet place a relatively high expectation on the state to provide for them.³³

Another phenomenon that has affected the upbringing of Generation Y is technology. Instant gratification and constant validation are the foundation on which Generation Y was raised. As a result, Generation Y is comfortable with technology that improves work processes, efficiency, and convenience.³⁴ Their interconnected world suggests a group of individuals that respond to management styles that encourage creativity, initiative and teamwork.³⁵

Generation Y's perspective on work has been extensively documented. A recent survey conducted by GMP group and Temasek Polytechnic found that 63% of Generation Y respondents aged 18 to 27 rated opportunity for career advancement as the highest rated motivator for retention.³⁶ It is also emphasized in Twenge's research that younger generations seek to retain control over other aspects in their lives and place a higher value on work-life balance. Due to their higher external locus of control, a career is viewed as a vehicle that will allow them to achieve their personal goals.³⁷

Comparatively Generation Y is more affluent, more technologically-savvy, better educated and more ethnically diverse than any previous generation.³⁸

Because of this, work-life balance has become a norm as they place a bigger premium on having fun and are also able to take uncertainty in its stride. Generation Y exhibit attributes that make them facile and prudent decision makers, which can be especially advantageous in decentralized combat operations. If their commitment can be secured, Generation Y will definitely be a valuable asset to the SAF.³⁹

MANAGING GENERATION Y

There are distinct differences between generations due to their unique formative environment. These differences significantly impact various aspects of management, namely communication preferences, commitment criteria and compensation motivators.⁴⁰ The following section shall discuss various aspects and tools imperative to the management and development of Generation Y.

Person-Organization Fit

Empirical results have shown that job performance is largely dependent on the person-organization fit. Organizations that possess workers who are committed, who experience greater satisfaction, who adjust quicker to change and are more connected to its operations, create a culture that is based on congruent values and image.⁴¹

As Generation Y seeks to play meaningful roles in the SAF, encouraging bottom up opinions in the creation of unit vision and mission will help them develop a sense of ownership and belongingness within the organization.⁴² This will also allow the alignment of Generation Y's personal values with the organization.⁴³

Collaborating

Dunn and Price findings cited in the Australian Leadership Foundation's article on leadership found that the percentage of high school students that preferred the "auditory" learning style has decreased

from 70% in 1978 to a mere 30% today. The majority of Generation Y are non-auditory learners, influenced by the visual nature of communication and by kinesthetic, collaborative and interactive styles.⁴⁴

In order to increase effectiveness of training, it is proposed that the SAF embraces approaches which cater to the learning attributes of Generation Y. By providing collaborative syllabuses centered on group discussions, trainees learn from other group members and are able to contribute new ideas.⁴⁵ In group discussion, trainees are able to test their understanding and perspective against others, thereby enriching and internalizing their scope of thought. Socially, trainees will also ascertain a level of encouragement and affirmation, therefore sparking further interest in learning.⁴⁶

SAF trainers should therefore introduce discussion through case studies and facilitate the Generation Y trainees in discovering the right answer of their own accord. This is a departure from the teacher-student model, where the teacher imparts knowledge and instructs the students in a rigidly defined role.⁴⁷

Experiencing

Further building on Generation Y's preferred learning style, tailored training methods that are interactive and originate from real world tasks will allow the kinesthetic application of knowledge and skills to complex scenarios pertinent in actual operations. The exposure to authentic tasks will also allow the conceptualization of tactical skills and knowledge in relation to the larger operational goal, thereby increasing their confidence and skill proficiency in varying settings.⁴⁸

Role-playing tactical scenarios, allowing time for practice, allocating assessment tools, offering guidance and feedback in the experience instructional

Generation X therefore became independent, goal-oriented entrepreneurial thinkers at ease with information and technology.

design will provide trainees with a measure of their progress, deepen engagement, reinforce learning objectives and cater to the learning style of Generation Y.

To continue the experiential learning process after training sessions, establishing post training reflection mediums will further allow the accommodation of new knowledge by consolidating new information into existing ones. As it aids future development and career progress, the act of self-reflection and internalization should be inculcated by trainees.⁴⁹

Technology

In addition to establishing informal and formal learning methods, the integration of technology in support of traditional methods will have a familiar and exponential effect on learning.⁵⁰ Generation Y prefers a self-paced, independent style of computer-based training. Thus there are three main areas that technology can be incorporated into the system.⁵¹

First, technology has been integrated with the design and use of virtual instructor-lead training courseware. This self-paced courseware involves online rework and post work activities to help increase effectiveness and lower delivery costs. Use of such tools requires a rigorous design and delivery approach but will undoubtedly increase the ability of the SAF in training their soldiers.⁵²

Another avenue that technology has enhanced training is the use of simulation tools in training. Although costly in its establishment, simulators allow trainers to slow down the training process and help learners understand individual steps and their integrated operations.⁵³

Finally, it is proposed that a digitized communal infrastructure of information incorporating social-networks such as “A-Space,” a social-networking site modeled after Facebook pioneered by the United

States (US) military, and information networks such as “Bussing-Hub,” a new IT learning network developed by the Royal Navy, will help encourage and sustain motivation in learning.⁵⁴ Such a system will provide trainees a channel for out of the classroom lessons, a source for archived information, an avenue for feedback and a tool for monitoring personal progress.

Organizational Communication

Generation Y describe their ideal manager as one who values communication and creates an environment of transparency and respect for staff.⁵⁵ To conceptualize the idea of organizational communication, Alfred Miguel M. Aguado, a communicologist, contextualizes the Johari window, a model for self-awareness, into organizational collaboration, by replacing “self” with “top management” and “others” with “employees” (in this case SAF soldiers). One can have four different types of organizations in light of organizational collaboration.⁵⁶

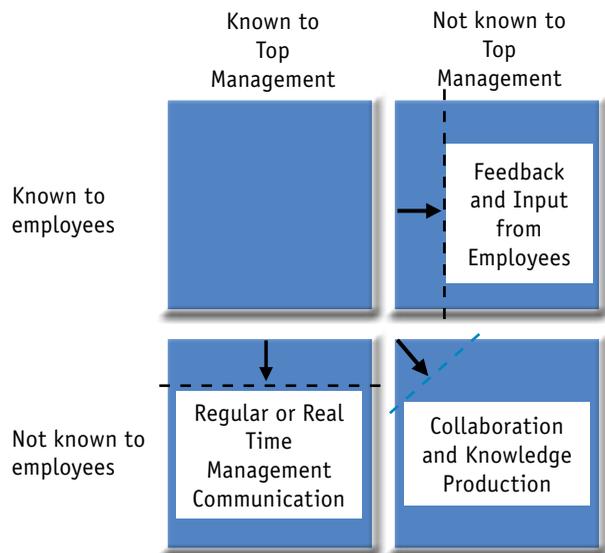


Diagram 1: Ideal Organizational Collaboration.⁵⁷

The “ideal” organization collaboration is one where many things are known to both subordinates and management. Both parties freely provide input and feedback about information regardless of source. There is a driven quest for knowledge, increased levels of trust, well developed norms, reduced misunderstandings and openness in sharing.⁵⁸

To create the “ideal” organizational collaboration, leaders need to acquire feedback and input from subordinates, engage in regular communication with subordinates to equip them with knowledge, familiarize themselves with the habits, behavior and preferences of their followers and implement mass collaboration tools so that knowledge may be documented, reviewed and reused.⁵⁹

Work-Life Balance

If you're leading, and no one's following—then you're just out for a walk.

– John Maxwell, leadership expert⁶⁰

Generation Y's demand for a personalized and flexible workplace experience has resulted in the well-documented need for work-life balance.⁶¹ In comparison to the military environment, the concept of flexibility in the civil sector can be easily tackled—an example of corporate flexibility is Citigroup's alternative work solutions program where productivity is maintained while allowing people to work where and how they want.⁶² Such luxuries cannot be afforded by the SAF due to the operational requirements of national defense. Although the options available to SAF managers are limited, areas such as flexible hours, value adding work, and personalized arrangements will concurrently increase job satisfaction and engagement.⁶³

Guidance

Growing up in an environment that provided on-going supervision and guidance from authority figures, Generation Y bring to the workplace similar expectations of their leaders.⁶⁴

The key to engaging Generation Y is to establish a coaching relationship.⁶⁵ SAF leaders should therefore be clear and honest with subordinates, establish desired goals and behaviors, provide timely reinforcement, offer guidance and the resources to achieve their goals.⁶⁶ By positioning oneself as a source of their learning and development, SAF leaders will command a stronger sense of loyalty, invoke greater emotional engagement and streamline the transfer of knowledge.⁶⁷

By encouraging frequent coaching and mentoring, subordinates will be inspired to take on more challenging work.⁶⁸ This takes advantage of Generation Y's potential by playing to their strengths and allowing them to recognize and understand their weaknesses.⁶⁹ Although greater involvement should be made in interaction with Generation Y, SAF leaders must avoid over micromanaging and adopting a condescending attitude as both will erode productive communication.⁷⁰

Empowerment

The drive for knowledge centric warfare and the desire for more responsibility by Generation Y should lead to their empowerment within the organization.⁷¹ In allowing for more space in the development of Generation Y talent, delegation of responsibility and empowerment to make contained decisions are needed to inspire and challenge the Generation Y to move up to leadership positions.⁷² They should be allowed to make informed decisions under the guidance of the supervisors. While some decisions may not be as perfectly executed, tolerance (within acceptable limits and risks) towards some imperfections should be present. This empowerment will channel Generation Y ambitions towards SAF organizational goals and serve to retain much needed talent within the SAF.⁷³

SAFEGUARDING THE SAF'S MISSION

As the shifting waves of generational influence continues to move through the SAF, leaders must adapt to the changing needs presented by the different generations. However in engaging a more open dialogue and relationship, the following must be observed:

Acknowledging Differences

When US military leaders discovered in May 2007 that Air Force officers were using Facebook to organize their squadrons, social-networking sites such as Facebook and MySpace were quickly banned. This aggressive stance was seen as made by a bad tempered management out of touch with the demographics of Generation Y.⁷⁴



IWO Toh Chew Pak (Generation X), engaging Generation Y specialists.

In contrast, generational shift should be viewed as more of a revision of social norms rather than as the emergence of a new “kind” of person.⁷⁵ Generation Y soldiers are a product of their time and managers cannot change the learning styles, behavior patterns and attitudes they bring to work.⁷⁶ We can, however, take the initiative to understand and better engage the generation, as ultimately the future of the organization lies in their hands.

Unchanging Military Intent

Although times and people have changed, the mission and values of the SAF do not. The military still needs soldiers that hold true to the core values of the SAF.⁷⁷ Leaders must continue to evaluate and stress-test subordinates to ensure that the delicate balance between empowering the Generation Y soldiers and providing them with direction, discipline and cohesion is maintained. A balanced leadership is the only means to empower the Generation Y military with the right sense of responsibility and engage their intrinsic strengths.⁷⁸

Stronger Corporate Governance within the SAF

With the ever increasing complexity and change in the operating environment brought about by

Generation Y, standards of behavior including misconduct, compromises and security lapses have to be managed with stronger corporate governance. The rules, regulations, directives and procedures should be reviewed and updated carefully to prevent the SAF from being outdated, irrelevant or even overly accommodative.

Managed Vulnerability

Comparatively more active in their use of technology, Generation Y has their own websites (MySpace, Facebook and Twitter), their own online identities and use these sites in addition to messenger and mobile technology to keep in constant touch with each other. The internet has become their playground of choice.⁷⁹ This openness with personal security, coupled with their urge to communicate, may become a source of problems for the SAF.⁸⁰

The recent “Wikileaks” episode has shown how the abuse and misuse of information technology can threaten the credibility of the system, integrity of the leadership and stability of Singapore. Better policing through organizational policies and adherence to security measures, be it information and technology or otherwise, have to be enforced.

Reinforcing Core Mission Values

As Generation Y is further removed from the original purpose of soldiers and defense, it is easy to lose sight of the higher calling of the SAF.⁸¹ However, this can be mitigated through constant reinforcements programs such as national education forums and symposiums.

The SAF must continue to reinforce its *raison d'être* amongst both conscripts and regulars. Soldiers must take ownership and responsibility of their individual wellbeing and that of fellow colleagues. Any soldier who has reasonable belief that there is serious threat to national security should be encouraged to raise his concern.

CONCLUSION

While the SAF continues to embrace Generation Y, a new locus for attention is quickly brewing. If managing Generation Y is considered challenging, the up and coming Generation Z represents a whole new paradigm. Generation Z were born post 1995 and are touted as being the most technology savvy generation of all time.⁸² As Generation Z is currently in their formative years, the SAF has the opportunity to create lasting impressions as a good employer and positive work environment.

This article examines the impact made by Generation Y on issues of manpower recruitment, development and management in the SAF. Generation Y brings to the plate a revitalized sense of optimism, work-life balance and technological familiarity unseen in previous generations. Managing this generation requires adequate understanding of their attributes and a rethinking of current managerial practices. As we continue to integrate the generation, we must not forget the mission of the SAF. The SAF must therefore remain vigilant, adaptive and robust to maintain its competitive edge for times to come. 🌐

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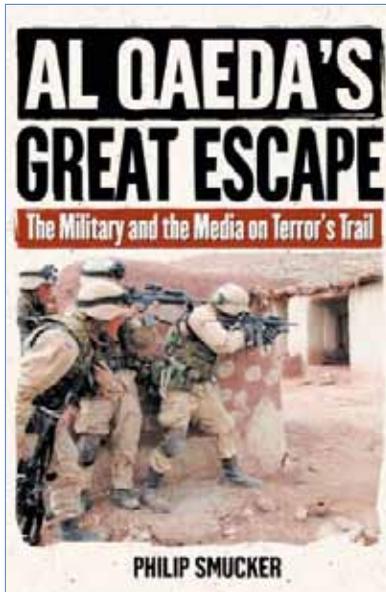
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Book Review



Philip Smucker, *Al Qaeda's Great Escape: The Military and the Media on Terror's Trail*, Washington, D.C.: Potomac Books, 2004, 272 pages.

by Joshua Foo

INTRODUCTION

The September 2001 attacks in the United States (US) by Al Qaeda sparked interest in hundreds of news publications. For editors, it was a dream. For reporters like Smucker, risking his life to report stories that hopefully only he could find, was more worrisome than exciting. The book *Al Qaeda's Great Escape* is partially a recount of Smucker's experience spending months on the ground in Afghanistan.¹ He prolifically writes about the sights, his travels, and the difficulties he faced after waiting for weeks to slip across the border into Tora Bora and beyond. Over the next two and a half months, Smucker chased clues by foot and vehicle through dusty villages and breathtaking White Mountain passes. The book delivers what its name promises, right from the first line on the first page. It captures the author's tenacity, adventure and boldness, and is filled with viewpoints and insights new to the general public.

Smucker presents an intriguing, concise study of the military campaigns (primarily US) in Afghanistan and proffers a thesis

unambiguously: "the US military, under not only executive but public pressure for a quick victory in revenge for September 11, adopted a strategy that achieved that victory, but only over the Taliban."² Being the first to report Osama's escape from the US's Green Berets and their Afghan allies at Tora Bora, the Pentagon held Smucker's reporting in contempt at that point in time.

The majority of the book details how resources were not allocated by the US to hunting down bin Laden, as his organization continued to stir trouble in and outside of Afghanistan. The author also highlights the press releases by the Pentagon that give the public a misleading picture of events. Smucker is much harsher on US strategists and his fellow journalists than he is on the American fighting men and women in the field, who include not only the glamorous covert operations troops but the humble logisticians "in the air, on land, and sea."³

The book is divided into bite-sized chapters, making the book captivating and pleasant to read.

Events have been covered in a chronological narrative form, from the September 11 attacks, to the time he landed and met his courageous Afghan assistant, all the way to Operation Anaconda. Reading the book proved intriguing, with the author enhancing his main narrative with plenty of vivid description. Smucker's journey in Afghanistan allowed him to write reports for the *Christian Science Monitor* and *The Daily Telegraph*, where the public learned the most about the failed US campaign to capture Osama bin Laden, far more than the US government and major news organizations told their own readers in the first several months of the war in Afghanistan. Accompanied by his bold assistant, Lutfullah Mashal from Afghanistan, the two faced more than slippery winter roads; they were held up by Afghan brigands and threatened with death by bin Laden's Arab fighters. In the process, they interviewed a fleeing Saudi financier, a former chef for bin Laden and with numerous Afghan village chiefs. While the Pentagon was busy informing the American public that they had no clue as to bin Laden's location whatsoever, Smucker's reporting ironically unveiled the behind-the-scenes deal-making between Afghans and Arabs that had helped bin Laden and aides to escape.

By early 2002, Smucker's original reporting on bin Laden's Houdini escape act had become accepted fact. On 17 April, *The Washington Post* reported that US civilian and military officials had concluded that bin Laden was in Tora Bora but left in the first

ten days of December, that US reluctance to put troops on the ground was possibly the greatest mistake of the Afghan campaign and that the military had severely misjudged its Afghan allies in the Battle of Tora Bora.⁴

INTENT

Smucker contends that Western media publications and outlets, eager to satisfy their audience's thirst for revenge, lost journalistic objectivity while covering bin Laden's pursuit. Impatience at the top of the Bush administration forced a rush into a war aimed primarily at "regime change" and left the US military largely empty-handed. Focusing on the military of events, Smucker does not adequately deal with the question of whether the pursuit of the Taliban received priority because of the need for Northern Alliance support, and the Washington-based coverage could have been usefully expanded.^v Smucker does not cater to ideologists of either side as the struggle for balance and perspective is noticeably present on every page. By the end, the wealth of operational detail will leave readers with a palpable sense of missed opportunity.

It covers what happened in the Afghan hills, the strategic policies in Washington, the media coverage and how bin Laden and scores of his followers were able to escape from Afghanistan despite the efforts of the US Army. Smucker explains how information was obtained, used, abused, and blatantly ignored, which is important because, although the last thing the media should do

during a campaign is provide the enemy with free intelligence, informed citizens should know what really transpired. Smucker writes the book with the intent of highlighting that war reporting has always been subject to propaganda bias, but his narrative style makes it an excellent example of combat reporting, especially when his "get the story at all costs" impulses take over.

CONCLUSION

This account of the American campaign in Afghanistan, specifically the Battles of Tora Bora and Operation Anaconda, is that of an experienced war correspondent. The book covers events that no civilian in a first-world country would have dreamed of experiencing themselves. It brings to readers the strategic policies made in Washington, the orders given in Bagram, events in the Afghan hills, and the media coverage of it all. A good read for enthusiasts. 🌐

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Cyrus the Great

by **Brandon Koh**



INTRODUCTION

Cyrus the Great (600-530 BC) was the first Achaemenid Emperor and the founder of Persia. He united the two original Iranian tribes, the Medes and the Persians, to create Persia. He was commonly known as a great conqueror, the leader of one of the greatest empires ever known, and is also renowned for his magnanimous attitude and great tolerance, especially to those whom he had defeated.

EARLY LIFE

Cyrus was born as the grandson of the Median King Astyages. Cyrus was initially to be killed upon his birth, as the King Astyages had a dream that his grandson would one day overthrow him. The burden of taking the newborn's life fell into the hands of a shepherd, Mitrdates and his wife, who raised him in secret instead of taking his life. Cyrus exhibited very noble character and behavior at a very young age, and it was obvious that he was not the son of a humble shepherd and his wife. Cyrus was eventually given back to his biological parents, Cambyses and Mandane, who were king and queen of Anshan.¹ Cyrus would eventually succeed his father as king of Anshan.

CYRUS'S MILITARY CONQUESTS

Conquest of the Median Empire

Cyrus took his father's throne in 559BC. However, he was not yet an independent ruler as he had to recognize Median dominance at that time. During King Astyages' reign, the Median Empire ruled over the majority of the Ancient Near East, from the Lydian frontier in the west to the Parthians and Persians in the east.

Harpagus, a steward of King Astyages, sought out Cyrus and convinced him to rebel against the King. Due to Cyrus' own antagonism towards King Astyages, the two joined up and started a revolution against the Median Empire.² The revolution began in the summer 553 BC, with battles beginning as early as 552 BC. The duo led their armies against the Medes until the capture of Ecbatana in 549 BC, when they finally successfully conquered the Median Empire.

He officially accepted the crown of Media and assumed the title of "King of Persia." Cyrus united the twin Achaemenid Kingdoms of Parsa and Anshan into one whole: Persia. However, the conquest of Media was only the beginning.³

Lydian Empire and Asia Minor

The Persians unsuccessfully invited the citizens of Ionia, a part of the Lydian kingdom then, to revolt against their rulers. Thus, Cyrus gathered an army and marched against the Lydians, gathering reinforcements from nations along the way.

The Battle of Pteria was fought between Cyrus and Croesus, the King of Lydia. Croesus was attempting to invade and capture the Achaemenid Empire city of Pteria. Cyrus advanced to halt the Lydian invasion. The battle was fought during the winter and the harsh conditions battered both sides. The battle was fierce but indecisive, but Croesus eventually withdrew. It was a small victory for the Persians.

The Battle of Pteria caused Croesus to retreat to Sardis.⁴ Cyrus pushed into Lydian Territory and besieged Croesus in his own capital. In this battle of Thymbra, Cyrus placed his dromedaries, Arabian camels, in front of his troops. The Lydian horses were not used to the smell of the dromedaries panicked. This strategy paid off and the Lydian cavalry were easily defeated. Cyrus overthrew Croesus and slew him.⁵

Cyrus then sent his two commanders, Mazares and Pactyas, on to the conquest of Asia Minor.

Neo-Babylonian Empire

It was the Battle of Opis that decided the Persian conquest

of the Neo-Babylonian Empire. Babylonia under Nabonidus was the last major power in Western Asia that was not yet under Persian control. The battle was fought near the strategic riverside city of Opis, and resulted in a decisive defeat for the Babylonians. After the defeat, Cyrus seized the city of Sippar with little to no resistance from the Babylonian populace.⁶ It is possible that Cyrus had engaged in prior negotiation with the Babylonian generals, therefore obtaining a mutual compromise to resolve the matter without any armed confrontation. Nabonidus fled all the way to the capital city Babylon, which he had not resided in for years.⁷

Two days later, Cyrus's troops managed to enter Babylon and detain Nabonidus, again without major resistance from the Babylonian armies.⁸ Persian army had discovered a basin earlier dug by Babylonian queen Nitokris to protect Babylon against Median attacks, and used it to their advantage. They diverted water from the Euphrates River into a canal until the water level decreased to the "height of the middle of a man's thigh," allowing the invading forces to march directly through the river bed in the middle of the night.⁹ Through this method, Cyrus himself entered the city of Babylon and detained Nabonidus.¹⁰

After the successful invasion and capture of the Neo-Babylonian Empire, Cyrus the Great's dominions

comprised the largest empire the world had ever seen.¹¹ At the end of Cyrus' rule, the Achaemenid Empire stretched from Asia Minor in the West to the northwestern areas of India in the East.¹²

CHARACTER

As a child, Cyrus already displayed exceptional demeanor and behavior. Being the product of a strict warrior culture, he learnt early on to suppress his emotions and respond to peril with great composure at all times. Cyrus believed that leaders should be constantly building newer and more flexible systems for future generations to come. His father, Cambyses, taught him to endure all labors and undergo all dangers for the sake of heroic achievement. As Cyrus grew up, he avoided all shameful conduct. He had the tenacity to outdo and outlast all his peers in enduring hardship and paying respect to authority.

Cyrus was also quick on his feet and did not hesitate to seize any opportunities presented to him. When his uncle Syzarees appealed to him for help in thwarting Assyrian plots, Cyrus jumped at the opportunity.¹³ He thus was appointed to command an expeditionary force to Media. Upon assembling his force, he said, "Our forefathers may have displayed wonderful courage, but they failed to reap great rewards. I've come before you to predict that our own fate will be far different—and far better. It's not our destiny to fight ceaselessly for small gains. We're going to win both honor and

wealth for Persia and for ourselves, and we're going to do it quickly."¹⁴ Cyrus' words roused his men and sparked a whole new fighting spirit in them.

LEADING BY EXAMPLE

Cyrus was a firm believer of leading by example. Cyrus knew that in order to make sure his own men were in the pink of health and had good morale, he himself had to possess these same bodily traits. He avoided overeating, stayed trim and strong by working out constantly, and constantly spoke to his men to boost their morale as well as show that he was positive and mentally healthy. As a result, he was a living exemplar of good qualities and his men could look up to him and follow suit.

Cambyes also taught Cyrus that obedience should not be the result of compulsion, saying, "there's a shorter way to a higher goal—the goal of voluntary obedience. People are quick to obey the person who's wiser than themselves."¹⁵ Cyrus always sought to be a good example for his men and to earn his people's respect.

DECISIVENESS

Cyrus led his troops to aid Syazarees against the Assyrians. However, instead of combining with Syazarees against the enemy, he attack and seize the Assyrian bounty and empire. Cyrus was spontaneous and firm in making his decision to secure his own position and aid Syazarees at the same time. Cyrus also knew that by remaining passive and waiting

for the enemy to attack, they were at a disadvantageous position. He wanted to strike first and take the initiative, for doing so would give him the element of surprise.

Cyrus marched towards the Assyrian border. After a few days, he got notice that the Assyrian King himself and was moving out. He was quick to react and moved his army out in good order. He wanted to show that he was ready to fight, and that his army was not afraid of the Assyrian forces in any way. The Assyrian armies too, were in action. They established defensive positions according to their customs, creating trenches and fortified points. The Assyrian King thought that these defensive strategies and maneuvers would throw off the invaders and confuse them.

Cyrus the Great was smart and quick on his feet. He saw what the Assyrian armies were doing and knew that a frontal attack would be disadvantageous for his own troops. He positioned his forces such that majority of his soldiers were hidden out of sight in order to lull the Assyrians into a false sense of security. He convinced his generals and Syazarees to wait until the Assyrian army got impatient and left their defenses. They waited almost a week until they got word that the Assyrian army was marching out. Cyrus knew it was time to strike. Leading his entire army, they sprang up from their defensive positions and charged at the Assyrians at full force.¹⁶ The Assyrian army was no match for the spirit of the Medes and Persian army, and crumbled soon after.

Cyrus was always one to recognize merit and heroism. After their decisive victory over the Assyrians, Cyrus called out his general Kryzantos and publicly praised and recognized him in front of everybody. Kryzantos fought alongside Cyrus valiantly, but had also been able to respond to orders by Cyrus in the midst of the battle, saving many lives by tactical repositioning. Cyrus was also grateful to his men for having the faith and confidence to fight alongside him, and also being willing to shed both blood and tears for him. Cyrus said, "Remember, great opportunities await everyone in this army who's determined to succeed. Whatever your rank, your virtues are bound to be recognized."¹⁷ He wanted to let his men know that he valued great virtues and character in his men, no matter their rank or status, and he wanted to motivate his men and keep their spirits up after such a great victory.

LATER LIFE

Death

Cyrus died doing battle with the Massagatae, a tribe from the southern deserts of Khwarezm and Kyzyl Kum. Cyrus' army was bested in battle by Tomyris, the ruler of the Massagatae, and Cyrus was killed in the battle. When the battle was over, Tomyris ordered the body of Cyrus to be brought to her, and then decapitated him and dipped his head into a vessel of blood. It was supposedly a symbolic gesture of revenge and hatred for Cyrus killing Tomyris' son earlier in battle.¹⁸

Burial

Whatever remains of Cyrus the great were interred in his capital city of Pasargadae, where today a limestone tomb still exists which is believed to be his. Though the city of Pasargadae is now in ruins, the tomb has been partially restored. Cyrus died around December 530 BC.¹⁹ He was succeeded by his son Cambyses II.

Legacy

Cyrus has been a personal hero to many people, including Thomas Jefferson, Mohammad Reza Pahlavi, Mahmoud Ahmadinejad, David Ben-Gurion and even Alexander the Great himself.²⁰ His achievements are also reflected in the way he is remembered by many today. In his own nation, the Iranians revere him and regard him as "The Father."²¹ The Babylonians regarded him as "The Liberator."²² Cyrus created political infrastructure that allowed the Achaemenid Empire to endure long after his death. The rise of Persia under his rule had a profound impact on world history: Iranian literature, history and philosophy all played a huge role in world events for the next millennium. The empire over which Cyrus ruled was the largest the Ancient World had even seen.²³ Persia was instrumental in the growth and expansion of Islam, and continued to exercise great influence in the Middle East during the Islamic Golden Age. 🌐

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Quotable Quotes

Leadership—leadership is about taking responsibility, not making excuses.

– Mitt Romney (b. 1947), American businessman and politician.

People ask the difference between a leader and a boss. The leader leads, and the boss drives.

– Theodore Roosevelt (1858-1919), 26th President of the United States.

Hold yourself responsible of a higher standard than anybody expects of you. Never excuse yourself.

– Henry Ward Beecher (1813-1887), American clergyman, social reformer and speaker.

A leader is a dealer in hope.

– Napoleon Bonaparte (1769-1821), French military and political leader.

Effective leadership is putting first things first. Effective management is discipline, carrying it out.

– Stephen Covey (1932-2012), American educator, author, businessman and keynote speaker.

Management is doing things right; leadership is doing the right things.

– Peter Drucker (1909-2005), American management consultant, educator and author.

Be a yardstick of quality. Some people aren't used to an environment where excellence is expected.

– Steve Jobs (1955-2011), US businessman, founder of Apple Inc. and pioneer of the personal computer revolution.

My attitude is never to be satisfied, never enough, never.

– Duke Ellington (1899-1974), American composer, pianist and bandleader of jazz orchestras.

The function of leadership is to be produce more leaders, not more followers.

– Ralph Nader (b. 1934), American political activist, author, lecturer and attorney.

Either you run the day or the day runs you.

– Jim Rohn (1930-2009), American entrepreneur, author and motivational speaker.

Act as if what you do makes a difference. It does.

– William James (1842-1910), American philosopher, psychologist and physician.

What you do today can improve your tomorrows.

– Ralph Marston (b. 1955), author.

Perseverance is failing 19 times and succeeding the 20th.

– Julie Andrews (b. 1935), stage actress, author, singer, theatre director.

I've failed over and over and over again in my life and that is why I succeed.

– Michael Jordan (b. 1963), American professional basketballer and entrepreneur.

The ladder of success is best climbed by stepping on the rungs of opportunity.

– Ayn Rand (1905-1982), novelist, playwright and screenwriter.

It's fine to celebrate success but it is more important to heed the lessons of failure.

– Bill Gates (b. 1955), American business magnate, investor, programmer, inventor and philanthropist.

I hated every minute of training, but I said, "Don't quit. Suffer now and live the rest of your life as a champion."

– Muhammad Ali (b. 1942), American professional boxer.

Believe you can and you're halfway there.

– Theodore Roosevelt (1858-1919), 26th President of the United States.

It's never too late to be what you might have been.

– George Eliot (1819-1880), English novelist, journalist and translator.

Don't let the fear of striking out hold you back.

– Babe Ruth (1895-1948), American professional baseball player.

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For example:

Tim Huxley, *Defending the Lion City: The Armed Forces of Singapore* (St Leonard, Australia: Allen & Unwin, 2000), 4.

Huxley, *Defending the Lion City*, 4.

Ibid., 4.

Edward Timperlake, William C. Triplett and William II Triplet, *Red Dragon Rising: Communist China's Military Threat to America* (Columbia: Regnery Publishing, 1999), 34.

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For example:

Chan Kim Yin and Psalm Lew, "The Challenge of Systematic Leadership Development in the SAF," *POINTER* 30, no. 4 (2005): 39-50.

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.

Articles in Books or Compiled Works

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

H. Rothfels, "Clausewitz," in *Makers of Modern Strategy: Military thought from Machiavelli to Hitler*, eds. Edward Mead Earle and Brian Roy, (Princeton: Princeton University Press, 1971), 102.

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David Boey, "Old Soldiers Still Have Something to Teach," *The Straits Times*, 28 September 2004, 12.

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