The Challenges Facing 21ˢᵗ Century Military Modernization

By Bernard F.W. Loo

When the Singapore Minister of Defense tabled the proposed budget for the Singapore Armed Forces for 2019–20 before the Parliament in February 2019, the Ministry of Defence issued an infographic that explained how the most recent military acquisitions—Type-219 submarines from Germany and the planned acquisition of F–35s from the United States being the most visible—would result in a next-generation Singapore Armed Forces that will be "more lethal in all domains."[1] At the other end of the spectrum of military power, the *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* emphasizes lethality as a fundamental, necessary characteristic of the United States military; indeed, the words "lethal" and "lethality" appear 16 times across its 11 pages of text.[2]

When a military organization undertakes a modernization program, it is intuitive to expect that existing capabilities are going to be replaced by superior capabilities. There is an implied suggestion that a necessary (though not sufficient) condition of this superiority is enhanced lethality; lethality surely constitutes a necessary condition of the strategic effectiveness of the military organization in question.[3] At the risk of stating the obvious, military organizations around the world exist to protect the security of their respective countries: in peacetime, by deterring the adversaries of the country from waging war, and in wartime, by defeating these adversaries should they choose the war option. These two missions are not mutually exclusive: "The surest way to prevent war is to be prepared to win one."[4] Nevertheless, it is possible to question the extent to which lethality subsequently connects to strategic effectiveness, which is understood here as the ability to win wars. In other words, while modernization ought to result in a military organization that is more lethal than before, this enhanced lethality does not guarantee strategic effectiveness.

Using the example of Singapore, this article will construct its argument by, first, proposing an ideal model of military modernization, based on questions that a country's policymakers and military planners ought to be asking themselves as they decide on how the country's military organization is to be modernized. Next, the article shifts its attention to the questions military planners and policymakers either ask (or ought to be asking) in deciding on specific modernization programs. Finally, the article examines the issue of strategic

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effects, which is what military organizations ultimately seek to achieve. It is here that the question of the relationship between enhanced lethality and strategic effectiveness can be addressed.

Technological Development and Lethality

In *An Introduction to Strategic Studies: Military Technology and International Politics*, Barry Buzan argued that the phenomenon of the arms dynamic—and the process of military modernization is a manifestation of this concept—is driven by three elements: an action-reaction dynamic between the state and its putative adversary; the domestic structures within the state that are not necessarily fully synchronized with the action-reaction dynamic with its putative adversary; and a technological imperative within which the first two elements exist.[5] Interestingly, Buzan, together with Eric Herring, revisited this concept in the 1998 book, *The Arms Dynamic in World Politics*; now, the arms dynamic concept has been refined, where it is driven by two imperatives, namely action-reaction and domestic structures, and technology is the context in which the arms dynamic necessarily exists.

Why does this matter? This article attempts to construct an argument that is predicated on the assumption that technology plays an increasingly important role in shaping the modernization of military organizations. Furthermore, whether as imperative or as context, the technological landscape is increasingly complex, because a number of not necessarily military technologies can have strategic impact, including "computing, 'big data' analytics, artificial intelligence, autonomy, robotics, directed energy, hypersonics, and biotechnology."[6]

Given that the ultimate function of any military organization is the protection of the state from external, and sometimes existential, threats, the desire for "better" weapons systems is intuitive and necessary; "better" is surely the path that military

technological development takes, and this typically takes the form of enhanced lethality.[7] Modern technologies make existing weapons systems even more lethal. Indeed, in the aftermath of Operation *Desert Storm*, then-Chief of Staff of the U.S. Air Force, General Merrill A. McPeak, argued that the experience of *Desert Storm* demonstrated that the U.S. military needed to enhance its lethality by increasing investments in all-weather precision munitions that are cheap and therefore acquirable in large numbers.[8] Irrespective of the particular service, the *Summary of the 2018 National Defense Strategy of the United States of America* maintains this belief in lethality; the document paints a picture of a future battlefield that is;

> *ever more lethal and disruptive . . . combined over domains, and conducted at increasing speed and reach [by] competitors and adversaries [who] seek to optimize their targeting of our battle networks and operational concepts"* by employing *"other areas of competition short of open warfare to achieve their ends (e.g., information warfare, ambiguous or denied proxy operations, and subversion)."*[9]

Lethality is a function of a series of factors. The most immediately obvious factor is precision sensing and targeting, which allow you to "see" the enemy first and bring lethal fires to bear against it, with greater accuracy—an important consideration given the increasing costs of modern weapons systems—before the enemy can "see" your own forces.

In an age of computer networks and joint military operations, data linkages and bandwidths constitute a second, and enabling, factor; these are important considerations because they allow the military organization to do away with traditional interservice rivalries and function as a single, coherent entity, and to engage enemy forces (a euphemism for lethality) with any available weapons systems

deployed on air-, land-, or sea-based platforms.

The third factor is survivability. This is important, because if your weapons systems are more survivable than those of your adversary or enemy, it means your military organization can be more lethal than its counterpart.

The United States recognizes that its military organization has "no preordained right to victory" and therefore needs to be a "more lethal, resilient, and rapidly innovating Joint Force." This lethality is strategically vital for the military organization in its peacetime and wartime functions. A peacetime military organization seeks to dissuade—more precisely, deter—its adversary (or adversaries, as the case may be) from initiating hostile military operations against the state, whereas a wartime military organization seeks to defeat—more precisely, attain strategic success against—its enemy. This "more lethal force" can then "sustain American influence and ensure favorable balances of power that safeguard the free and open international order."[10] However, as I will discuss later, both deterrence and strategic success are problematic concepts, and neither concept is necessarily driven by lethality.

Military Modernization: Questions and Caveats

In any military modernization program, policymakers and military planners have to find a delicate balance in their answers to three questions that, at least potentially, exercise mutually contradictory influences on the eventual shape of the military organization.

Who is the likely adversary or security threat, and why do policymakers and military planners identify this adversary or threat? To begin with, the state will have to identify and, if necessary, prioritize the threats it may face in the future. However, the identity of the likely adversary or security threat to the state is problematic, because the drivers of the process through which the state's policymakers and military planners come to identify and prioritize the likely adversary or adversaries (this article proposes two principal drivers, history and geography) are at least potentially contradictory imperatives themselves.[11]

The history of the state, and especially its military history, can be illustrative of the likely potential adversaries the state may face. This history forms a key element in the complex compound that is a state's strategic culture.[12] History helps policymakers to identify the national security interests (and security policies) of the state.[13] It provides the tools with which policymakers and population can define and understand the situation they are in, interpret adversarial motives, and suggest ways and means by which state interests can be realized despite such adversarial intentions.[14] Of course, this history is much more than a purely objective reality, more than just "one damned thing after another."[15] Rather, the history of a state is also about how an objective past is interpreted and understood, in particular by the military planners and policymakers.[16] This process of interpretation, of making sense of the objective data that a state's history provides, is important because, as political psychology informs, it is central to how policymakers and military planners understand the identity of their state, and the commensurate roles and responsibilities of the state in the international arena.[17]

The historical experiences of Singapore—from the Indonesian bombing of Macdonald House on March 10, 1965, during the *Konfrontasi*, to the occasional threats by Malaysian politicians to abrogate the 1961 and 1962 water agreements between Singapore and Malaysia—point to potential threats emanating from its immediate neighbors, Malaysia and Indonesia.[18] In the case of the Indonesian bombing, when the Indonesian navy commissioned in 2014 a *Bung Tomo*-class corvette as the KRI *Usman Harun*, named after the Indonesian marines who perpetrated the Macdonald House bombing, the Singapore government was predictably upset; in the words of

Singapore Defense Minister Dr. Ng Eng Hen, this event threatened to "undo the conciliatory actions from both sides that had lain to rest this dark historical episode" and would "re-open old wounds."[19]

This leads to the following question: what are the geographic conditions of the state that have a potential impact on the latter's security calculus? There is widespread agreement among scholars of strategy that geography—both political as well as military geography—matters in shaping the threat perceptions of policymakers and military planners.[20] More often than not, it is precisely over geography that states go to war with one another. Geography provides the context, the physical location, in which strategy exists: for instance, a state with limited maritime boundaries is not going to spend much time worrying about its naval power. How do these geographic conditions influence the potential conduct of military operations by the state and its putative aggressor? Geography also influences—perhaps even drives—strategic planning and the conduct of military operations; military planners have to take into consideration the terrain of the likely conflict and the types of military capabilities needed to operate in this terrain.

However, as with a state's history, the strategic importance of a state's geography is as much an objective physical reality as it is psychologically and socially constructed. For instance, it is surely indisputable that Singapore is a small island state, yet strategically and diplomatically, Singapore might very well be anything but. To illustrate, a former Singapore Ambassador, Bilahari Kausikan, published *Singapore Is Not an Island*, a volume comprising his previous writings and public speeches as then-Permanent Secretary of the Singapore Ministry of Foreign Affairs.[21] In it, he argued that Singapore can at least mitigate against, if not escape, the strategic implications of the geographical reality that it is a small island state through adroit and robust diplomacy. In addition,

a furor that erupted in 2017 involving two former ambassadors demonstrated that this objective physical reality could be interpreted very differently in strategic and diplomatic terms.[22]

Following from the above discussion, the third question to ask is: what capabilities does the state's military organization then need to defend itself against this putative adversary? However, there are two caveats to note.
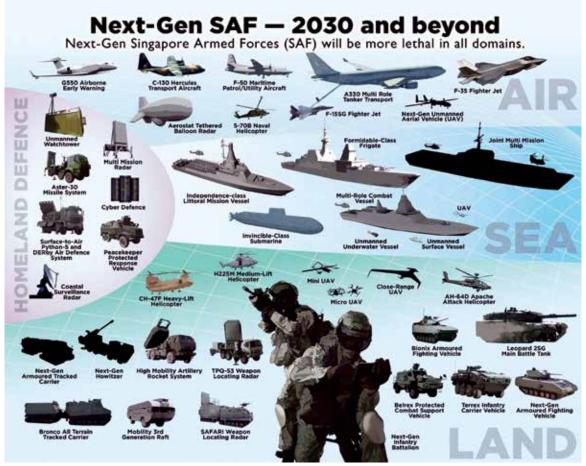
The first caveat relates to what capabilities and technologies the state can acquire. Economics is only part of the picture; of course, financial costs are an important consideration, and military spending ought not to bankrupt the country's economy. Singapore's first Defense Minister, Goh Keng Swee, laid this down as a fundamental principle of Singapore's defense policy.[23] More importantly, the global geopolitics of the arms trade—who buys what capabilities from which suppliers—also matters: if a country has traditionally acquired its military capabilities from either the United States or its North Atlantic Treaty Organization (NATO) allies, there is a good chance it is because the United States and NATO had come to see that country as a valuable ally. Singapore, for instance, has almost exclusively acquired its military capabilities from the United States and NATO, or if not from NATO, at least from countries that produce military capabilities that are technologically consonant with the United States (such as the Singapore navy's acquisition of naval combat systems from Sweden, for instance). At the same time, while Singapore may overtly welcome military visits from any country, the reality is that it has hosted more visits by the U.S. military than the militaries of the former Soviet Union, Russia, or China. Its security cooperation with the United States is arguably much broader and deeper than that with any other major power.

The second caveat is that there is a potential disconnect between what policymakers and military planners believe the military organization needs,

and what the military organization objectively needs (based on what it actually does). This article does not revisit the post–Cold War debates regarding the supplanting of traditional security with nontraditional security.[24] Nevertheless, I pose this question: what is the mission statement of the military organization, and what exactly does this military organization do? Since independence, Singapore has maintained a Singapore Armed Forces that was raised, sustained across three incarnations, and trained to ensure the country's sovereignty against existential threats, whether real or imagined.[25] At the same time, however, Singapore, as a sovereign state, has never had to face war; but the Singapore Armed Forces have since the 1970s participated in a number of United Nations peacekeeping operations as well as conducted a number of humanitarian assistance and disaster relief operations, from the former East Pakistan (now Bangladesh) in 1970, to its largest operation in Meulaboh in Indonesia after the December 2004 tsunami, to supporting relief operations in the United States after Hurricane Katrina in 2005 and Hurricane Harvey in 2017. The Singapore Armed Forces have also undertaken a counterterrorism mission, from the protection of critical infrastructure to the standing up of an all-volunteer high-readiness army deployment force in 2016 to address terrorist scenarios such as the attacks in Mumbai in 2008 and Paris in 2015.

It ought to be obvious that the above three questions can exercise mutually contradictory impulses on how the military organization is built. In other words, the types of military capabilities that the state acquires do not have to cohere to how the state's policymakers and military planners perceive the various threats and security challenges that the state faces. Nevertheless, as an ideal, the military organization ought to maintain a careful balance between these potentially contradictory considerations and requirements. Ideally, there will be coherence between the threats that the state faces and the types of military capabilities its military organization possesses. The operations that the military organization conducts should be consistent with the threats that the state faces. Furthermore, how this military organization is raised and sustained ought not to bankrupt the state. This is what this author understands to be a strategically coherent military organization. However, this idea of the strategically coherent military organization is also inherently problematic.

To begin with, states do not always acquire military capabilities that "make sense;" it is possible to identify cases where specific acquisitions do not necessarily cohere with the threats that the state purportedly faces. In Southeast Asia, two examples immediately come to mind: Thailand's acquisition of a helicopter carrier, and Malaysia's decision to simultaneously acquire F/A–18 and MiG–29 combat aircraft, both in the 1990s. In the first instance, it can be difficult to envision a threat scenario that Thailand might face that would require the deployment of a helicopter carrier; the carrier has only ever been deployed to support disaster relief operations. In the second instance, the acquisition of technologically incompatible combat aircraft undermines the potential for the Malaysian Air Force to operate in a cohesive manner; furthermore, this combination of Russian and American capabilities generates a logistical nightmare.

It is also worth noting that there is no such thing as an ideal answer to any of the questions and caveats identified earlier. If, as the argument here posits, there is a connection between a state's history and geography on the one hand and how the state's policymakers and military planners perceive security threats and challenges to the state on the other, it ought to be clear that neither history nor geography are singular, objective realities; rather, it is how these policymakers perceive the state's history and geography that matters. Furthermore, precisely because perceptions matter in the identification of security

Next-Gen SAF — 2030 and beyond
Next-Gen Singapore Armed Forces (SAF) will be more lethal in all domains.

AIR

G550 Airborne Early Warning
C-130 Hercules Transport Aircraft
F-50 Maritime Patrol/Utility Aircraft
A330 Multi Role Tanker Transport
F-35 Fighter Jet
F-15SG Fighter Jet
Next-Gen Unmanned Aerial Vehicle (UAV)

HOMELAND DEFENCE

Unmanned Watchtower
Multi Mission Radar
Aerostat Tethered Balloon Radar
S-70B Naval Helicopter
Aster-30 Missile System
Cyber Defence
Formidable-Class Frigate
Joint Multi Mission Ship
Surface-to-Air Python-5 and DERby Air Defence System
Peacekeeper Protected Response Vehicle
Independence-class Littoral Mission Vessel
Multi-Role Combat Vessel
Coastal Surveillance Radar
Invincible-Class Submarine
Unmanned Underwater Vessel
Unmanned Surface Vessel
UAV

SEA

CH-47F Heavy-Lift Helicopter
H225M Medium-Lift Helicopter
Mini UAV
Micro UAV
Close-Range UAV
AH-64D Apache Attack Helicopter
Next-Gen Armoured Tracked Carrier
Next-Gen Howitzer
High Mobility Artillery Rocket System
TPQ-53 Weapon Locating Radar
Bionix Armoured Fighting Vehicle
Leopard 2SG Main Battle Tank
Bronco All Terrain Tracked Carrier
Mobility 3rd Generation Raft
SAFARI Weapon Locating Radar
Next-Gen Infantry Battalion
Belrex Protected Combat Support Vehicle
Terrex Infantry Carrier Vehicle
Next-Gen Armoured Fighting Vehicle

LAND

Singapore Ministry of Defense
https://www.mindef.gov.sg/web/wcm/connect/mindef/be78ae40-55dd-4086-bd7a-9f893b620197/8/next-generation-saf2.jpg?MOD=AJPERES

threats and challenges, any response to any one of the questions and caveats identified above is "ideal" only to the specific policymakers and military planners of the state. In other words, it is possible to generate different and contradictory perceptions of a single objective reality. Finally, a military organization is not a static entity—hence Buzan's concept of an arms dynamic (emphasis mine). Building a military instrument is not like sculpting a statue. Rather, it is an entity that is constantly being refined, with old and obsolescent capabilities being retired, and new capabilities acquired.

Strategy, Not Lethality, Is the Key

The preceding section demonstrates that military organizations are—or at least, ought to be—assessed in terms of their strategic effectiveness—in other words, the ability of the military organization to achieve the political outcomes that the state desires. These desired outcomes can be understood in peacetime and wartime scenarios. In peacetime, the desired outcome is the maintenance of a peaceful and secure existence for the state; and in wartime, the desired outcome is the attainment of victory against its adversary. Put

bluntly, as Singapore's Ministry of Defence states as its mission, "to enhance Singapore's peace and security through deterrence and diplomacy, and should these fail, to secure a swift and decisive victory over the aggressor."

There is a strong temptation among scholars of strategy to distinguish between the twin missions of deterrence and defense. In 1946, Bernard Brodie published *The Absolute Weapon*, which was an attempt to understand the ramifications of nuclear weapons on strategy and war. In it, Brodie stated, "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose."[26] Glenn Snyder argued that "different types of military force contribute in differing proportions to these two objectives. Deterrence does not vary directly with our capacity for fighting wars effectively and cheaply; a particular set of forces might produce strong deterrent effects and not provide a very effective denial and damage-alleviating capability. Conversely, forces effective for defense might be less potent deterrents than other forces which were less efficient for holding territory and which might involve extremely high war costs if used."[27]

However, for non-nuclear military organizations, the ability to wage and win a war against a putative enemy is central to its peacetime function of deterring adversaries from initiating hostile military operations. Deterrence holds when an adversary calculates that the costs incurred as a result of initiating military operations will be greater than the possible gains it accrues. In the nuclear realm, the issue of cost is arguably stark and unmistakable: the image of a nuclear mushroom cloud creates a powerful argument that a nuclear war produces only losers, no winners. In the non-nuclear realm, however, cost is determined by the inability of the aggressor to attain its desired end states; it is the ability to deny the aggressor its

desired end states that constitutes deterrence.

There have been a number of wars where more powerful—and, presumably, more lethal—military organizations were not strategically effective. In the Korean War, more North Korean and Chinese soldiers died compared to their United Nations counterparts. Similarly, in the U.S. war in Vietnam, more North Vietnamese and Viet Cong combatants were killed in action than U.S. and South Vietnamese soldiers. As Harry Summers wrote, "On the battlefield itself, the Army was unbeatable. In engagement after engagement the forces of the Viet Cong and of the North Vietnamese Army were thrown back with terrible losses. Yet, in the end, it was North Vietnam, not the United States, that emerged victorious."[28] The pattern is repeated in more recent wars—the Soviet war in Afghanistan, the U.S.-led wars in Iraq and Afghanistan.

What these cases ought to teach us is that lethality per se does not confer strategic effectiveness. The technological superiority of one side, manifested in its superior lethality, may result in victory in battles; that being said, superior lethality does not guarantee victory in battles. If anything, these cases demonstrate a singular, if unpopular (especially in these technologically sophisticated times) truth: wars are sometimes won by stubbornness and obduracy, the sheer unwillingness to accept defeat despite battle losses, the ability to outlast the enemy, despite the enemy's technological superiority.[29] If wars are, as Clausewitz argued, a clash of mutually antithetical wills, it means that wars are decided when one side concedes. The central importance of will also, arguably, applies in peacetime deterrence—the putative adversary decides against initiating armed hostilities precisely because it does not believe that armed hostilities will allow it to realize the political interests it seeks.

Perhaps a second lesson we ought to learn is that sound strategy is necessary—although not in itself sufficient—for strategic success; arguably, it was the

absence of sound strategy that led the United States and the Soviet Union to lose its wars in Vietnam and Afghanistan, respectively. The problem is, as Colin Gray has argued, that strategy is difficult, and sound strategy can be elusive.[30]

A sound strategy requires at least three preconditions. First, it identifies a political stake involved that is unequivocally important to the national interests of the country such that the country has to resort to the use of military force. As long as the national interest at stake is clearly important, and this importance is recognized not just by the political elites but by the rest of the population as well, this provides a firm foundation for the crafting of sound strategy. Second, the country's resources will need to be mobilized to ensure that the armed forces have the necessary wherewithal to prosecute the war successfully. And there can be no half measures: no country should go to war while handicapping itself. However, as long as the national interest at stake has been clearly articulated to the population, and the population unequivocally accepts this articulation, the mobilization of resources can be achieved with a minimum of political fuss. Third, a coherent causal argument has to be constructed that relates the application of military power to the attainment of the political interests at stake. In other words, sound strategy must be able to show how the use of military power can achieve the political end states that the country seeks to establish. And sound strategy can be crafted only when political elites and military planners are involved in the process.

However, these preconditions are inherently problematic. Identifying an unequivocally important political stake in the country's national interest is challenging, if only because the policymaking community of any country is not necessarily a monolithic entity. Rather, it is composed of individuals, and the likelihood of differences in world views, philosophical biases, and opinions is almost certainly high. Within the policymaking community, it is therefore almost inevitable that there will be differences of opinions as to whether a specific political issue will constitute a core element of the country's national interests. Furthermore, the population—the source of the government's legitimacy and the country's military organization—will not necessarily agree with the opinions of the policymaking community. If there is disagreement within the policymaking community and an absence of popular support, the second precondition—the allocation and mobilization of the country's resources—will be impossible.

Finally, even if there is consensus within the policymaking community and popular agreement on the importance of the political issue, a sound strategy can be crafted only if there is agreement between the policymaking community and the military planners of the country as to how the application of military force will secure the political stakes that policymakers have identified as crucial to the country's national interest. As Colin Gray has argued, strategy is a bridge that connects policymakers and military planners.[31] Furthermore, even if all three preconditions can be met and a sound strategy is subsequently crafted, there is an additional rub: sound strategy is an essential condition for the attainment of strategic success, but it is not sufficient to guarantee strategic success. Alan Beyerchen reminds us that war is an inherently nonlinear phenomenon: the law of unintended consequences always applies, and actions will not necessarily result in the intended outcomes.[32] The combination of lethality in the form of overwhelming military power applied in a sound strategy merely increases the probability of a successful outcome. Just do not expect the lethality to get the job done.

Conclusion

When a military organization undertakes a modernization program, it is indeed expected that the new

weapons systems will be "better" than the weapons systems being replaced; it is in fact expected that the military organization, once modernized, is more lethal than its previous incarnation. Given that public money is being used to fund military modernization, and that the same public money can also be utilized in other aspects of national policy, it is indeed politically necessary that new military capabilities are better than those being retired.

However, the issue of strategic effectiveness, both in peacetime deterrence and in warfighting, is complicated. The central importance of human will in determining both the effectiveness of peacetime deterrence and victory in war means that the outcomes that military organizations seek in peacetime and in war can lie beyond the lethality of that organization. Lethal military capabilities simply do not guarantee strategic effectiveness.

Finally, the acquisition of increasingly lethal military capabilities does not guarantee that the process of military modernization will be strategically coherent. Military organizations, at least in peacetime, undertake a range of missions as dictated by the policymakers of the state, and many of these missions will not require increasing lethality. A personal anecdote illustrates this: a young Republic of Singapore Air Force pilot, who was about to begin training on the F–15SG aircraft, said to me, "If terrorist organizations are the principal security challenge facing Singapore, how am I as a F–15SG pilot going to be relevant to my organization's counterterrorism mission?" PRISM

Notes

[1] Singapore Ministry of Defence, Committee of Supply Debate 2019, March 1, 2019, available at <https://www.mindef.gov.sg/web/portal/mindef/news-and-events/latest-releases/article-detail/2019/cos2019>.

[2] Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Department of Defense, 2018).

[3] This study defines strategic effectiveness as the ability of the military organization to fulfill its peacetime and wartime objectives in support of the state's national interests. See, for instance, Bernard Fook Weng Loo, "Decisive Battle, Victory, and the Revolution in Military Affairs," *Journal of Strategic Studies* 32, no. 2 (April 2009), 189–211.

[4] *Summary of the 2018 National Defense Strategy of the United States of America*, 5.

[5] Barry Buzan, *An Introduction to Strategic Studies: Military Technology and International Politics* (Basingstoke, UK: Macmillan, 1987).

[6] *Summary of the 2018 National Defense Strategy of the United States of America*, 1.

[7] See, for instance, Max Boot, *War Made New: Technology, Warfare, and the Course of History, 1500 to Today* (New York: Gotham Books, 2006); Martin van Creveld, *Technology and War: From 2000 BC to the Present* (New York: The Free Press, 1991).

[8] Thomas K. Adams, *The Army After Next: The First Postindustrial Army* (Palo Alto, CA: Stanford University Press, 2008), 25.

[9] *Summary of the 2018 National Defense Strategy of the United States of America*, 3.

[10] Ibid., 1.

[11] Bernard Fook Weng Loo, *Middle Powers and Accidental Wars: A Study in Conventional Strategic Stability* (Lewiston, NY: Edwin Mellen Press, 2005), 35–68.

[12] Colin S. Gray, *Modern Strategy* (New York: Oxford University Press, 1999), 131–132; Alistair Iain Johnston, *Cultural Realism: Strategic Culture and Grand Strategy in Chinese History* (Princeton: Princeton University Press, 1995), 35–36; David T. Twining, "Soviet Strategic Culture: The Missing Dimension," *Intelligence and National Security* 4, no. 1 (1989), 169–187.

[13] Valerie M. Hudson, ed., *Culture and Foreign Policy* (Boulder, CO: Lynne Rienner Publishers, 1997).

[14] This is illustrated by the slew of articles and newspaper editorials that attempted to portray Russia's annexation of Crimea and China's island-building operations in the South China Sea as analogous to Nazi Germany's annexation of Czechoslovakia. See "Schäuble Says Putin's Crimea Plans Reminiscent of Hitler," *Spiegel Online*, March 31, 2014, available at <http://www.spiegel.de/international/germany/schaeuble-compares-putin-moves-in-crimea-to-policies-of-hitler-a-961696.html>; "Philippine President Compares China's Expansion to Nazi Germany," *The Telegraph*, February 5, 2014 , available at <https://www.telegraph.co.uk/news/worldnews/asia/china/10618722/Philippine-president-compares-Chinas-expansion-to-Nazi-Germany.html>; "Japan PM Abe Compares China-Japan Rivalry to Pre-war UK-Germany Ties," *South China Morning Post*, January

24, 2014, available at <https://www.telegraph.co.uk/news/worldnews/asia/china/10618722/Philippine-president-compares-Chinas-expansion-to-Nazi-Germany.html>.

[15] This view of history is sometimes attributed to Henry Ford, sometimes to Arnold Toynbee.

[16] Daniel John Goldhagen, *Hitler's Willing Executioners: Ordinary Germans and the Holocaust* (London: Abacus, 1996), 28–34; Charles A. Kupchan, *The Vulnerability of Empire* (Ithaca: Cornell University Press, 1994).

[17] Hudson, *Culture and Foreign Policy*; Ronald L. Jepperson, Alexander Wendt, and Peter J. Katzenstein. "Norms, Identity, and Culture in National Security," in *The Culture of National Security: Norms and Identity in World Politics*, ed. Peter J. Katzenstein (New York: Columbia University Press, 1996), 32–75; Kupchan, *The Vulnerability of Empire*, 5–22.

[18] Tim Huxley saw Malaysia as the primary potential threat, Indonesia as the secondary; Tim Huxley, *Defending the Lion City: The Armed Forces of Singapore* (Australia: Allen and Unwin, 2000), 44–55. Also see S.R. Joey Long, "Desecuritsation and after Desecuritisation: The Water Issue in Singapore-Malaysia Relations," in *Perspectives on the Security of Singapore: The First 50 Years*, ed. Barry Desker and Ang Cheng Guan (Singapore: World Scientific/Imperial College Press, 2016), 103–120; Bilveer Singh, "Singapore's Security in the Context of Singapore-Malaysia-Indonesia Relations," in Desker and Guan, *Perspectives on the Security of Singapore*, 121–134; Yishu Zhou and Ching Leong, "Water Policies as Assets," in Critical Issues in *Asset Building in Singapore's Development*, ed. S. Vasoo and Bilveer Singh (Singapore: World Scientific, 2018), 137–148.

[19] Jermyn Chow, "Indonesian Warship Usman Harun Banned from Singapore Ports and Naval Bases," *The Straits Times*, February 18, 2014.

[20] Gray, *Modern Strategy*, 171–172; Loo, *Middle Powers and Accidental Wars*, 69–104. Also see John M. Collins, *Military Geography for Professionals and the Public* (Washington and London: Brassey's, 1998), 387–388; Roy E.H. Mellor, *National Defence: The Military Aspects of Political Geography—A Reconnaissance Study* (Aberdeen: Department of Geography, University of Aberdeen, 1987), 20–21; Patrick O'Sullivan, *Terrain and Tactics* (New York: Greenwood Press, 1991), 9–30.

[21] Bilahari Kausikan, *Singapore Is Not an Island* (Singapore: Straits Times Press, 2017).

[22] Kishore Mahbubani, then dean of the Lee Kuan Yew School of Public Policy, and a former Singapore ambassador to the United Nations, among other appointments, had published an editorial in *The Straits Times*, the Singaporean English broadsheet newspaper, on July 1, 2017, titled, "Qatar: Big Lessons for a Small Country." He argued that small states have to act with greater discretion and circumspection than their larger counterparts, and that these small states ought to pay greater attention as a result to their regional organizations and the United Nations. In response, Bilahari Kausikan, a former diplomat and permanent secretary of Singapore's Ministry of Foreign Affairs, posted a strongly worded rebuttal on his widely followed Facebook account. Bilahari's rebuttal drew favorable responses from other policymaking elites in Singapore, notably the former foreign minister and current Law and Home Affairs Minister, K. Shanmugam.

[23] Bernard F.W. Loo, "Goh Keng Swee and the Policy of Conscription," in *National Service in Singapore*, ed. Ho Shu Huang and Graham Ong-Webb (Singapore: World Scientific, 2018), 157–158.

[24] See, for instance, Colin S. Gray, *Another Bloody Century: Future Warfare* (London: Weidenfeld & Nicolson, 2005); Thomas X. Hammes, *The Sling and The Stone: On War in the 21st Century* (St. Paul, MN: Zenith Press, 2004); Mary Kaldor, *New and Old Wars: Organized Violence in a Global Era* (Cambridge: Polity Press, 1999); Charles Moskos et al., eds., *The Postmodern Military: Armed Forces after the Cold War* (Oxford: Oxford University Press, 2000); Moises Naim, "Five Wars of Globalisation," *Foreign Policy* (January/February 2003), 29–36; Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (New York: Alfred A. Knopf, 2007).

[25] Norman Vasu and Bernard F.W. Loo, "National Security and Singapore: An Assessment," in Desker and Guan, *Perspectives on the Security of Singapore*, 21–44.

[26] Bernard Brodie, *The Absolute Weapon* (New York: Harcourt Brace, 1946), 76.

[27] Glenn Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton: Princeton University Press, 1961), 4.

[28] Harry G. Summers, Jr., *On Strategy: The Vietnam War in Context* (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, 1981), 1.

[29] Loo, "Decisive Battle, Victory, and the Revolution in Military Affairs."

[30] Colin S. Gray, "Why Strategy Is Difficult," *Joint Force Quarterly* 22 (1999), 6–12.

[31] Colin S. Gray, *The Strategy Bridge: Theory for Practice* (Oxford: Oxford University Press, 2010).

[32] Alan Beyerchen, "Clausewitz, Nonlinearity, and the Unpredictability of War," *International Security* 17, no. 3 (Winter 1992/1993), 59–90.