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THE US ARMY WAR COLLEGE
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PARAMETERS

Contemporary Strategy & Landpower

**Special Commentary:
Civil-Military Relations and
Today's Policy Environment**

Thomas N. Garner

Coercion: New Means & Methods

*Buddhika B. Jayamaha and
Jahara Matissek
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**Technology Innovation:
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Bharat Rao, and Bala Mulloth*

Technological Change & War's Nature

Donn A. Starry



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From the Editor

After an intense period of internal reorganization, *Parameters* opens its long-awaited Winter 2018–2019 issue with a Special Commentary, “Civil-Military Relations and Today’s Policy Environment” by Thomas Garner. Garner suggests US civil-military relations may have come to a crossroads where the rift between American citizens and their military has grown too great to be ignored any longer.

Our first forum, *Coercion: New Means & Methods*, features two articles that discuss underexplored ways of achieving strategic coercion. The first contribution, “Social Media Warriors: Leveraging a New Battlespace” by Buddhika Jayamaha and Jahara Matisek, explains how certain hostile parties have created a new battlespace consisting of the internet, social media, and other means of communication to foment social and political discontent within Western-style democracies. No less novel, David Katz’s contribution, “Multidimensionality: Rethinking Power Projection for the 21st Century,” explains how American military strategists might incorporate multidimensional power projection into their planning processes to counter gray-zone adversaries.

The second forum, *Technological Innovation: Problems & Prospects*, addresses the double-edged nature of technology. The first article, “High-Energy Laser Weapons: Overpromising Readiness” by Ash Rossiter, discusses some of the facts and fictions associated with modern laser weapons within the context of today’s great-power competition. An essential point in this discussion is how the excessive promises of those responsible for developing (and selling) high-tech weapons can severely undermine military readiness. In quite a different vein, the forum’s second article, “Innovation Tradecraft: Sustaining Technological Advantage in the Future Army” by Adam Jay Harrison, Bharat Rao, and Bala Mulloth, identifies the components needed to build an innovation ecosystem. This ecosystem would include organizational culture, awareness of emerging technologies, a capacity for leveraging resources, and a strategy for absorbing external information. Ideally, such an ecosystem would help channel technological innovation in positive directions while reducing bureaucratic inertia.

Our third forum, *Technological Change & War’s Nature*, consists of a contribution by a historical figure of some renown. The article entitled “Profession at the Crossroads” written by Donn A. Starry while he was still a lieutenant colonel. Among other things, Starry reveals how he and his contemporaries understood the relationship between technological change and the nature of war. His views provide an interesting contrast with those of today. This contribution is separated by nearly 50 years; yet it deals with a timeless and, for the military professional, a fundamentally inescapable question. ~AJE

Civil-Military Relations and Today's Policy Environment

Thomas N. Garner

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The 67th Annual Student Conference on US Affairs conducted at the United States Military Academy brought college students together from all over the country to discuss a variety of issues related to confronting inequality. While this event usually drives robust debate, the table on civil-military relations arguably had the most interesting outcome. These participants discussed whether the military should be representative of society as a driver of trust and legitimacy.¹ The table of seven males and ten females, from 17 different colleges, came to a conclusion that dealt more with the military's relationship to, than its representation of, society.

The students framed the civil-military relationship on the factors of trust and legitimacy and identified three issues facing civil-military relations: inadequate handling of veterans' affairs, ineffectiveness of sexual assault policy and prevention, and military outreach to American society. The first two topics are representative of some of the major military news stories in the media at the time, and the third is a topic that should not be taken lightly. While the first two conclusions inform the issue, the recommendation truly reinforces an emerging rift in US civil-military relations that the military is responsible for closing.

Civil-Military Relations

Alexis de Tocqueville once assessed Americans as having an "irritable patriotism," trapped somewhere between the "instinctive patriotism" that comes from an affection for one's birthplace and from civic action in a republic. This irritable patriotism led Americans, in Tocqueville's eyes, to be both ardently defensive and reverently questioning of the country in which they lived and the institutions they served. He concluded a more enduring form of patriotism results when citizens gain knowledge of and engage with their government, something he saw in Americans at even the lowest classes.²

Americans are undoubtedly proud of their nation's military. In fact, 91 percent of participants in a 2011 survey "felt proud of the soldiers

MAJ Thomas N. "Nate" Garner, an armor officer, currently serves as a strategic planner for the Joint Chiefs of Staff. He has a masters of public policy from Georgetown University, was a University of North Carolina Institute for Defense and Business Strategic Studies fellow, and taught American Politics, Policy, and Strategy at the United States Military Academy.

1 This commentary is based on Thomas N. Garner, "The Military as a Mirror: Should the Military Be Representative of American Society?," in *Confronting Inequality: Wealth, Rights, and Power*, ed. Hugh Liebert, Thomas Sherlock, and Cole Pinheiro (Hudson NY: Sloan, 2016).

2 Alexis de Tocqueville, *Democracy in America: An Annotated Text Backgrounds Interpretations*, ed. Isaac Kramnick (New York: W.W. Norton & Company, 2007), 197–99.

who have served in the military in the post 9/11 era.”³ But this pride may not resemble what Tocqueville called instinctive patriotism, patriotism based on civic action, or reflective patriotism. There is reason to worry that Americans are proud of their military not because of involvement with it or reflection about what makes it good, but simply because it is theirs.

The past decade has elicited a patriotism that more closely reflects Tocqueville’s ideation of instinctive patriotism, meaning a stable society is based on institutions passed down from previous generations, and often left unquestioned.⁴ In this fashion, the instinctive, or reflexive, patriotism of the past decade-plus has led to an emerging rift in US civil-military relations that is the military’s responsibility to close.⁵ Truthfully, this rift is not a matter of policy, and yet, it is almost entirely the military’s fault.

Before Samuel Huntington wrote *The Soldier and the State*, the majority of civil-military thought had centered on the fear of a military coup d’état.⁶ Authoritative writers such as Tocqueville and Montesquieu informed and fortified America’s founders to take caution in their constitutional structures against the ills of a standing army. Huntington, on the other hand, informed the current civil-military debate by defining the “role of the military in society . . . in terms of ‘civilian control.’”⁷

Scholars such as Peter D. Feaver have explored the relationship between military and civilian institutions as a principal-agent problem: a relationship in which one side (the civilian) attempts to get another (the military) to carry out its will, while making use of the military’s own expert knowledge.⁸ Morris Janowitz, like Feaver, views the military as an instrument of national security policy. For Janowitz, the military’s relationship to the civilian government resembles that of a pressure group that “is not a voluntary association, acting on the organs of government; on the contrary, it is an organ of government, seeking to develop new techniques for intervening in domestic politics.”⁹

But a more recent rift assumes a different character. Since 2011, many articles and polls have shown that American society (71 percent of the public) and the US military (84 percent of veterans) are coming no closer to developing a shared understanding of each other or the

3 Bruce Drake, “On Memorial Day, Public Pride in Veterans, But at a Distance,” Pew Research Center, May 24, 2013.

4 Tocqueville, *Democracy in America*, 196.

5 James Fallows, “The Tragedy of the American Military,” *Atlantic*, January/February 2015.

6 Richard H. Kohn, “Building Trust: Civil-Military Behaviors for Effective National Security,” in *American Civil-Military Relations: The Soldier and the State in a New Era*, eds. Suzanne C. Nielsen and Don. M. Snider (Baltimore: The Johns Hopkins University Press, 2009), 264–89.

7 Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, MA: Harvard University Press, 1957), 80.

8 Peter D. Feaver, “The Civil-Military Problematique: Huntington, Janowitz, and the Question of Civilian Control,” *Armed Forces and Society* 23, no. 2 (Winter 1996): 170.

9 Morris Janowitz, *The Professional Soldier: A Social and Political Portrait* (New York: Free Press, 1971), 369.

military's problems.¹⁰ The current rift does not ignore the relationship and the challenges associated with Huntington's definition of civilian control, rather the rift is an extension of this civil-military relationship to the society that the military serves.

Military Responsibility

By accepting the overwhelming trust and legitimacy bestowed on it without adequate self-criticism, the military has abdicated its voice in the national dialogue. In large part, the silence, associated with a professional ethos of humility, which is prevalent in large portions of the service, widens the rift between servicemembers and the civilians they serve, which has allowed the rift to exist in the first place. The problem is not trust, the military's pride in itself, or civilian's pride in the military. The problem is that civilian trust in the military institution is becoming meaningless because of the public's lack of understanding of the military and the military's acceptance of that trust as confirmation of its efforts. Therefore, the onus is on the military to be far more critical of itself than the public.

The danger, however, is that transparency may reveal "all the dark secrets" to the public, sacrificing a bit of civilian trust. But it would also give the military an opportunity to justify, or self-actualize, the trust by adequately earning it instead of merely receiving it. Unlike Tocqueville's fear of democratic armies, where officers separate themselves from the society, it can be assumed the soldiers of today want to return to society after service in much the same fashion expressed by George Washington in 1775: "When we assumed the soldier, we did not [lay aside the] citizen, and we shall most sincerely rejoice . . . to return to our private stations."¹¹ The real hope is the society and the soldier are not so unfamiliar to one another that there is no longer any meaningful connection.

This particular civil-military rift is the military's to close because of the concept of the military profession's responsibility to society enumerated by Huntington.¹² As Richard Kohn states, the "profession is intrinsically values-based, creating the necessary bond of trust between the professional and the nation served."¹³ Huntington suggests this bond arises not from the military's representation of society but from the nature of the profession itself. Professions are trusted when they demonstrate expertise and responsibility. But "ultimately it is the military that must make the relationship work."¹⁴

To make that relationship work and create the necessary bond of trust, the military should connect with the American public by

10 "War and Sacrifice in the Post-9/11 Era: Executive Summary," Pew Research Center, October 5, 2011; Mark Thompson, "An Army Apart: The Widening Military-Civilian Gap," *Time*, November 10, 2011; and Drake, "On Memorial Day."

11 George Washington, "Address to the New York Provincial Congress" (speech, New York, June 26, 1775).

12 Huntington, *Soldier and the State*, 8–10.

13 Suzanne Nielsen, "The Army Officer as Servant and Professional?" in *The Future of the Army Profession*, eds. Don M. Snider and Lloyd J. Matthews (New York: McGraw Hill, 2005), 168.

14 Kohn, "Building Trust," 287.

conducting outreach, discussing shared values, and engaging in public discussions. Actions as simple as moving into and becoming involved with the community or thinking, discussing, and writing critically about successes and issues associated with service could be what bridges the gap. The majority of service members can work alongside public affairs officers who develop coherent strategic messaging anyone in the service can use to educate the public about efforts that might include such topics as gender integration or day-to-day activities at the small unit level.

Civilian Blame

The professional ethos of humility prevalent in large portions of the service prevents the military from closing the gap. Kohn instead blames careerism, or “the pressure to conform, to stay silent, to go along, or to do what advances one’s career.”¹⁵ Whether the motivation is conceptualized as humble altruism or selfish ambition, the problem remains the same; the majority of the professional force cannot remain silent. To do so would be an abdication of one’s responsibility to educate and to inform the society that he or she serves. Authors such as David Barno and Nora Bensahel place the blame on “civilians [who] have a responsibility to understand their military and have an essential role in decisions to commit it to battle—regardless of how removed they may be from personal participation or connection to our warriors.”¹⁶

While this is certainly applicable to civilian political leadership of America’s military, the assessment is unfair for the civilian population at large. After all, the military has moved far from the original democratic warnings and separated itself from society on limited-access installations complete with walls, guards, retail stores, schools, and churches. Barno and Bensahel go on to condemn the society at large: “Wearing yellow ribbons and saying ‘thank you for your service’ are simply no substitute for active engagement with U.S. military personnel and the political decisions to send them into harms way.”¹⁷

The perspective of civilian responsibility for the rift is hard to shake. Michael J. Sandel reinforces, “military service, like jury duty, is a civic responsibility” that expresses and deepens democratic citizenship. He argues that “turning military service into a commodity—a task we hire people to perform—corrupts the civic ideals that should govern it. . . . It allows us to abdicate a civic duty.”¹⁸ He further contends choice in legitimacy for a military rests in the idea of civic responsibility that is closer to Kohn’s careerism or to Janowitz’s military pressure group than to an ethos of humility. The gap may well be a failure in civic responsibility on the part of the citizen. But that possibility does not relinquish or excuse the military from responsibility.

15 Kohn, “Building Trust,” 277.

16 David Barno and Nora Bensahel, “When the Yellow Ribbons Fade: Reconnecting Our Soldiers and Citizens,” *War on the Rocks*, July 14, 2015.

17 Barno and Bensahel, “When the Yellow Ribbons Fade.”

18 Michael J. Sandel, *Justice: What’s the Right Thing To Do?* (New York, NY: Farrar, Straus and Giroux, 2009), 86.

Modern concepts of military professionalism—whether they be from Huntington, Feaver, Nielsen, or even Kohn—maintain the military must ultimately make the civilian relationship work “just as doctors do with their patients, lawyers with their clients, teachers with their students, and all professionals with those they serve.”¹⁹ The military owes society what it wants—military outreach. By passing up opportunities to educate the civilian population on its current challenges and successes, the military abdicates its voice and its responsibility.

19 Kohn, “Building Trust,” 287.

Social Media Warriors: Leveraging a New Battlespace

Buddhika B. Jayamaha and Jahara Matisek

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ABSTRACT: This article explains modern efforts to create a new battlespace within the civil societies of Western countries. This battlespace consists of the internet, social media, and other technologies that can be used to foment social and political discontent. The article includes recommendations for countering such efforts.

Civil society presents a fundamental blind spot in the American military understanding of warfare. Long associated by philosophers as a bulwark against tyranny in liberal democracies, civil society has been weaponized by hostile actors, such as Russia and China, and violent nonstate actors, such as the Islamic State. The adversaries' strategy involves infiltrating Western civil society in order to foment dissent and create breaches along ethnic, racial, religious, and socioeconomic lines. These actions generate and intensify hyperpartisanship on both sides of the political spectrum for the purposes of deepening societal divisions. Such new tactics differ from their historical antecedents in which hostile adversaries (Cold War Communist states) supported one side of Western civil society (left-wing political movements) in hopes of shifting political attitudes.

The new tactics create ideologically sympathetic individuals who desire policy changes that align with the adversarial state's ideology or that promote detrimental and self-destructive views; these views, in turn, can undermine societal cohesion while disrupting foreign policy choices. This approach accentuates attacks on Western civil society across multiple dimensions by using social media warriors who indirectly receive orders from, and are secretly paid by, Moscow, Beijing, and other Western adversaries. These social media warriors and their handlers regard the internet as an unguarded, undersurveilled, and ill-defined human-to-human interface that can be easily manipulated. Subsequently, social media forums such as Facebook and Twitter become a battlespace of ideas, injected with disinformation in hopes of influencing individual, societal, and political behavior.¹

As a consequence, the discourse of Western civil society is shaped in ways fundamentally hostile to the effective functioning of pluralist

1 Ashley Hoffman, "Here Are the Memes That Russian Operatives Shared To Influence 2016," *Time*, November 1, 2017; and Timothy P. McGeehan, "Countering Russian Disinformation," *Parameters* 48, no.1 (Spring 2018): 49–57.

liberal democracies.² Fomenting dissension by spreading divisive social media posts and polarizing memes leads citizens in Western societies to like, and to share, the messages as well as to advocate for the ideas, thus creating a destructive civil discourse. In a homogenous society, such as Iceland, this type of campaign has less impact because the societal differences are primarily economic. But in countries with a variety of cultural and historical cleavages, malicious civil discourse deepens existing divisions that make social relations more acrimonious.

Disinformation tactics against civil societies in the United States and its Western allies are not particularly new.³ The novelty, however, is the use of free and open civil discourse, which is traditionally a Western strength, as the center of sociocultural strategy aimed at manipulating civil society into a new battlespace. The first component of this strategy relies on the existence of the internet and the use of social media. With the internet as the medium, individuals conduct essential societal interactions through a variety of apps and platforms that provide instantaneous, uberefficient, daily social contacts without the boundaries that affected civil interaction during the twentieth century. Anti-Western actors use these virtual networks to produce and to breed ideas degenerative to stable societal norms, which ultimately impact policy debates and elections.⁴

The second component of this strategy involves the exploitation of the rules that govern pluralist-liberal democracies. When an adversarial state recruits an informer, it is an act of espionage. But a private group providing material, ideational, rhetorical, and inspirational support to a community, industry lobbying, or religious group is squarely within the protected legacy of free speech. In this manner, adversaries search for and capitalize on the weaknesses available to them. Many virulent Salafi-Jihadists preach Western destruction in Western capitals and large cosmopolitan cities where their dialogue is legally protected. But such liberty is nonexistent in their tyrannical home regimes.

The cumulative impact of this dual strategy not only degrades institutions, norms, and values but also increases distrust toward the government, undermining Western policy-making capacity and state power. With statistics indicating public trust in the American government is near an all-time low and trending downward, the adversarial strategy of further breaching civil society and democratic processes seems to be effective.⁵ In fact, a poll commissioned by former President George W. Bush and former Vice President Joe Biden found 55 percent

2 Douglas A. Ollivant, “The Rise of the Hybrid Warriors: From Ukraine to the Middle East,” *War on the Rocks*, March 9, 2016; and Jahara W. Matisek, “The Blockchain Arms Race: America vs. China,” *National Interest*, March 14, 2018. The Iranians, Turks, Syrians, and many other governments are relying on hybrid warriors to influence the Middle East and beyond.

3 Tyler Quinn, “The Bear’s Side of the Story: Russian Political and Information Warfare,” *Strategy Bridge*, June 27, 2018; and Emilio J. Iasiello, “Russia’s Improved Information Operations: From Georgia to Crimea,” *Parameters* 47, no. 2 (Summer 2017): 51–63.

4 Hoffman, “Here Are the Memes.”

5 “Public Trust in Government: 1958–2017,” Pew Research Center, December 14, 2017.

of respondents thought democracy was “weak and 68 percent believe[d] it is getting weaker.”⁶

The process of creating societal rifts to expand existing divisions, and to generate self-destructive behaviors was called *schismogenesis* in 1935.⁷ The Office of Strategic Services, an institutional precursor to the Central Intelligence Agency, used this theory in the South Pacific during World War II to sow disunity among enemy fighters and to create schisms in communities supportive of Japanese rule.⁸ Likewise, the recent rise of extremist politics in the United States and in western Europe provides growing evidence that schismogenesis appears to have been fueled by Russia, China, and numerous other hostile actors who can benefit from the cost-effective method of weakening the rules-based international order without directly confronting the West.⁹

The internet, formed by multiple layers of human-to-human and machine-to-machine interfaces that are neither malevolent nor benevolent, was intended to be self-governing. The permissible legal architecture guarantees individual and community freedoms, especially in liberal democracies that are easily exploitable by hybrid actors who face few mechanisms of enforcement. Moreover, the ubiquity of connected devices and Western dependency on them makes it easier for adversarial powers to penetrate systems and create social media chaos.

The value of freedom to liberal societies further complicates efforts to detect hostile attempts to create schismogenesis because recognizing the activity requires substantial domestic surveillance. Three years into the conflict in the Donbass, for example, scholars in the Ukraine finally began to document the various ways in which Russia had achieved schismogenesis.¹⁰ Thus, the decision to let the internet be self-governed has inadvertently meant agencies that are supposed to protect the citizenry are unable to, save for exceptional circumstances. Moreover, the conceptual and analytical void created by these protections prevents operational countermeasures.

Exacerbating this challenge is the informational asymmetry between countries, which enables hybrid actors to exploit their knowledge of what America and Europe are in the context of the strengths and the weaknesses of their own countries. Because the average Western citizen

6 James Hohmann, “The Daily 202: A Poll Commissioned by Bush and Biden Shows Americans Losing Confidence in Democracy,” *Washington Post*, June 26, 2018.

7 Gregory Bateson, “Culture Contact and Schismogenesis,” *Man* 35 (December 1935): 178–83; and David Lipset, *Gregory Bateson: The Legacy of a Scientist* (Englewood Cliffs, NJ: Prentice Hall, 1980), 143–44.

8 David H. Price, “Gregory Bateson and the OSS: World War II and Bateson’s Assessment of Applied Anthropology,” *Human Organization* 57, no. 4 (Winter 1998): 379–84; and David H. Price, *Anthropological Intelligence: The Deployment and Neglect of American Anthropology in the Second World War* (Durham, NC: Duke University Press, 2008), 239–42.

9 William M. Downs, “Democracy’s New Normal: The Impact of Extremist Parties,” *World Politics Review*, January 22, 2013; William Hague, “Western Voters Are Very Angry—and Extremists Are One Crisis Away from Power,” *Telegraph*, January 26, 2016; and Mike Lofgren, “Trump, Putin, and the Alt-Right International,” *Atlantic*, October 31, 2016.

10 Roman Dodonov et al., “Polemological Paradigm of Hybrid War Research,” *Philosophy and Cosmology* 19 (2017): 97–109.

has little knowledge of these factors, external adversaries can hire inexpensive part-time social media experts to insert polarizing rhetoric into ongoing political, societal, and cultural debates inside the West.

Current conceptions of this kind of warfare typically focus on how hostile actors best combine kinetic and nonkinetic tactics to degrade US power and influence in various regions.¹¹ General Philip M. Breedlove recently expressed concern for the false narrative affecting the West.¹² This is a step in the right direction, but it does not take into account the depth and severity of schismogenesis created with the intent of dismantling Western civil society. This oversight is because the West's adversaries rely on a strategy of socially embedding hostility into the political discourse, converting civil society from a constructive force into a destructive one.

Civil society is the total of nonstate organizations that represent the collective interests of its members by checking state power, upholding public interest, and shaping public discourse.¹³ In one form, political parties maintain the republican tradition and pluralistic form of interest representation in the United States.¹⁴ Other such organizations include industry lobbyists; civil rights organizations; ethnic-, racial-, and religious-specific organizations; and environmental activist groups. Registered lobbyists, which can advance the interests of foreign governments, can range from the American Israel Public Affairs Committee to lesser-known groups that work on behalf of actors such as India, Armenia, and Kurdistan.¹⁵ Other domestic lobbying groups promote national issues such as racial equality or prison reform and some represent local organizations such as a neighborhood humane society.

Civil society is vital for holding diverse populations together and is a defining strength of Western liberal democracies. Liberal, in the sense of John Locke, means a system that highlights and safeguards individual freedoms.¹⁶ In such a system, citizens have the right to form nonviolent contractual organizations that sustain economic and political competition as well as a vibrant civil society.¹⁷ These alliances provide an outlet for political discourse from motivated individuals who pursue their interests in finding moderate policies and agreements without resorting

11 John J. Kruzal, "Hybrid War' To Pull US Military in Two Directions, Flournoy Says," Department of Defense, May 4, 2009.

12 Jim Garamone, "NATO Commander Breedlove Discusses Implications of Hybrid War," Department of Defense, March 23, 2015.

13 Arend Lijphart, *Democracy in Plural Societies: A Comparative Exploration* (New Haven, CT: Yale University Press, 1977).

14 Theda Skocpol, "Civil Society in the United States," in *The Oxford Handbook of Civil Society*, ed. Michael Edwards (New York: Oxford University Press, 2011), 109–21.

15 John J. Mearsheimer and Stephen M. Walt, *The Israel Lobby and U.S. Foreign Policy* (New York: Farrar, Straus and Giroux, 2008); Ashok Sharma, "Behind Modi: The Growing Influence of the India Lobby," *Conversation*, June 27, 2017; Ömer Taşpınar, "The Armenian Lobby and Azerbaijan: Strange Bedfellows in Washington," Brookings, March 8, 2010; and Eric Lipton, "Iraqi Kurds Build Washington Lobbying Machine to Fund War Against ISIS," *New York Times*, May 6, 2016.

16 John Locke, *Political Writings*, ed. David Wootton (Indianapolis: Hackett, 1993).

17 Douglass C. North, John Joseph Wallis, and Barry R. Weingast, "Violence and the Rise of Open-Access Orders," *Journal of Democracy* 20, no. 1 (January 2009): 55–68.

to destructive behaviors such as violence. In this manner, negative and positive freedoms are balanced, rights are not trampled on by either side of the political spectrum, and the two remain in constant contention.¹⁸

Communal organizations that constitute civil society are a necessary foundation for liberty and resisting the tyrannical tendencies of unchecked executive power.¹⁹ Some organizations are goal driven, and as a consequence, can be utterly uncivil, profoundly illiberal, and easily manipulated if the organizational objectives align with those of a patron or patrons. Before the Nazi party took control of Germany in the early 1930s, the country was dense with civil society organizations and had more Nobel Prize winners than any other country in the world.²⁰ Unfortunately, many civil society organizations, to include the Nazi movement, happened to be explicitly Fascist, or contained Fascist sympathizers, despite Germany being highly sophisticated and educated.

The strength of American democracy similarly promotes the same rights for all groups whether they are white supremacist groups in Charlottesville, Virginia, or Black Lives Matter marches in Houston, Texas. This equality allows true freedom of thought and expression, which makes America diverse and interesting—and creates a vulnerability. Ideas contrary to the opinions of Western authorities do not lead to harassment and oppression. And Western laws, traditions, and norms prevent governments from investigating the actions of civil society organizations without reasonable cause. Hybrid actors, therefore, work around the edges of this system to find its weaknesses and achieve their goals. Consequently, civil society becomes a battlespace as social media actors pose as insiders to create and to foment societal schisms.

The same concept applies when external actors deliberately use aspects of the liberal order, integrated markets, and lax immigration rules for elites and professionals. Each individual has the potential to undermine the strengths of each aspect of civil society from within, sometimes with the complicity of individuals, sometimes via inadvertent foreign threats, and sometimes through soft power influence such as China's educational exchanges through the Confucius Institute.²¹

Another fundamental distinction in a liberal democracy is that every citizen has the same rights: each has the opportunity to reach the highest ranks in public and private life. The late General John Shalikashvili, for example, was a refugee during World War II who immigrated to the

18 Isaiah Berlin, *Four Essays on Liberty* (Oxford: Oxford University Press, 1969), 162–66.

19 Michael Mann, "The Autonomous Power of the State: Its Origins, Mechanisms and Results," *European Journal of Sociology / Archives Européennes de Sociologie / Europäisches Archiv für Soziologie* 25, no. 2 (1984): 185–213.

20 Ulrich Herbert, "Berlin: The Persecution of Jews and German Society," in *Civil Society and the Holocaust: International Perspectives on Resistance and Rescue*, ed. Anders Jerichow and Cecilie Felicia Stokholm Banke (New York: Humanity in Action, 2013), 75–83; Sheri Berman, "Civil Society and the Collapse of the Weimar Republic," *World Politics* 49, no. 3 (April 1997): 401–29; Michael Mann, *Fascists* (New York: Cambridge University Press, 2004), 162–205; and "All Nobel Prizes," Nobel Prize, accessed March 6, 2019, <https://www.nobelprize.org/prizes/lists/all-nobel-prizes/>.

21 Falk Hartig, "Confucius Institutes and the Rise of China," *Journal of Chinese Political Science* 17, no. 1 (March 2012): 53–76.

United States at age 16 and learned English by watching westerns. He became the first foreign-born chairman of the Joint Chiefs of Staff.²² This uniquely American moment was possible only because of the country's liberal democratic tradition. In contrast, an American citizen immigrating to many other countries might struggle to get a lowly job, let alone be allowed to achieve the highest military rank. Nefarious governments, state affiliated proxies, and nonstate actors can, and do, exploit this defining liberal principle.

In one such exploitation of Western politics, oligarchs affiliated with the Chinese government bankrolled the winning campaign of a naturalized Australian citizen during a parliamentary election, which essentially made the politician a stooge of the Chinese government.²³ In New Zealand, a naturalized Chinese citizen who had been a high-ranking military member in a Chinese intelligence agency is an elected member of parliament; his wife, who is also a naturalized citizen, runs a civil society organization that explicitly advocates for positions favorable to the Chinese Communist Party.²⁴ Evidence likewise suggests Beijing has successfully penetrated both political parties in New Zealand, which has led allies in the Five Eyes intelligence-sharing alliance to question if China's influence should affect New Zealand's membership in the organization.²⁵ Liberal regimes, however, have difficulty categorizing such activities as illicit or licit.

Social media actors also use sharp-power tactics to force subjects to be complicit.²⁶ There are recorded instances of China using such tactics to silence critics and to shape debates using state-sponsored groups registered in liberal democracies, such as New Zealand and Australia.²⁷ And although security agencies in liberal democracies with immigrant traditions neither hold citizens as hostages for bargaining purposes or use the familial relationships of naturalized citizens to compel them to be complicit in treasonous acts, evidence suggests Iran, Turkey, Russia, and China are leveraging transnational family relationships in this manner.

Displaced populations provide another opportunity for Western adversaries, such as Iran and China, to influence other countries.²⁸

22 Shaila Dewan, "Gen. John M. Shalikashvili, Military Chief in 1990s, Dies at 75," *New York Times*, July 23, 2011.

23 Philip Wen, "China's Patriots among Us: Beijing Pulls New Lever of Influence in Australia," *Sydney Morning Herald*, April 14, 2016.

24 Jamil Anderlini, "China-Born New Zealand MP Probed by Spy Agency," *Financial Times*, September 13, 2017.

25 David Fisher, "Chinese Communist Party Link Claimed," *Otago* (Dunedin, New Zealand) *Daily Times*, May 26, 2018; and Eleanor Ainge Roy, "New Zealand's Five Eyes Membership Called into Question over 'China Links,'" *Guardian*, May 27, 2018.

26 "How China's 'Sharp Power' Is Muting Criticism Abroad," *Economist*, December 14, 2017.

27 Elif Selin Calik, "A Newly Coined Phrase: 'Sharp Power' and Reasons for Attributing It to China," *Rising Powers Project*, January 6, 2018.

28 Timothy Heath, "Beijing's Influence Operations Target Chinese Diaspora," *War on the Rocks*, March 1, 2018; and Linda Robinson et al., *Modern Political Warfare: Current Practices and Possible Responses* (Santa Monica, CA: RAND Corporation, 2018).

Turkey exploits the Turkish diaspora in France and Germany.²⁹ Russia sends explicit threats and conducts highly public murders.³⁰ These realities are further complicated by the democracies' desires to protect equality, which causes them to view the mere suggestion of such issues being a security concern as a sign of xenophobia.

A larger target exists in the integration of markets and the manipulation or capture of big data from transnational corporations. By law and tradition, liberal democracies have stringent privacy standards directing how much data governments can access; illiberal regimes do not. Therefore, many corporations maintain double standards in their privacy efforts. The US government, for example, has to go through numerous legal procedures and provisions to access a criminal's iPhone. But Apple provides backdoor keys to the Chinese government and hosts iCloud services on Chinese government-run servers, in effect collecting and collating data on behalf of the Chinese state.³¹ Due to market incentives, Apple actively collaborates to support state surveillance with China and widely purports to guard data privacy in the West.

The value of this effort becomes clear in the context of an average citizen generating more than a terabyte of data in a day. Western governments, by law, have almost no access to this information even though private companies can freely access, collect, collate, use, and sell the data. Cambridge Analytica became the posterchild of this emerging problem when it used data mining to help political candidates.³² Moreover, nothing prevents business proxies of foreign states—including the state-owned enterprises of Russia, China, and Iran—from accessing them. One can imagine a nightmare scenario in which Chinese intelligence officials aggregate data purchased from a social media outlet with the data hacked from the Office of Personnel Management (2014–15).³³ An individual posing as a real estate agent, could use this information and financial data legally purchased from a credit bureau to create a near-complete profile of any individual that the Chinese government may want to target. Such an effort could possibly compromise anyone in the United States who has a security clearance. But the security implications have rarely been discussed because Western capitalism rarely results in patriotic fervor towards one's home country, which is becoming increasingly problematic in the rising era of the "Davos Man" and the pursuit of a home with the lowest tax burden.³⁴

29 Zeynep Sahin Mencutek and Bahar Baser, "Mobilizing Diasporas: Insights from Turkey's Attempts To Reach Turkish Citizens Abroad," *Journal of Balkan and Near Eastern Studies* 20, no. 1 (September 2017): 86–105.

30 Lucy Pasha-Robinson, "The Long History of Russian Deaths in the UK under Mysterious Circumstances," *Independent*, March 6, 2018.

31 Sherisse Pham, "Use iCloud in China? Prepare to Share Your Data with a State-run Firm," CNN News, January 11, 2018.

32 Scott Neuman, "In Hidden-Camera Exposé, Cambridge Analytica Executives Boast of Role in Trump Win," NPR, March 21, 2018.

33 Brendan I. Koerner, "Inside the Cyberattack that Shocked the US Government," *Wired*, October 23, 2016.

34 Samuel P. Huntington, "Dead Souls: The Denationalization of the American Elite," *National Interest* 75 (Spring 2004): 5–18.

Social media manipulators also directly infiltrate public debates, interfere with political consensus, and support domestic civic society organizations, political parties, and individual candidates. With loose election finance laws that recognize individuals and corporations equally, nothing prevents foreign corporations with proxy firms from creating super political action committees to influence elections. The rise of cryptocurrencies makes this process even easier. Again, American defense and security agencies are not allowed to look into the affiliations of these actors without reason due to privacy laws fiercely guarding against such efforts. Such opportunities in Western civil society make perpetrating schismogenesis easier.

Other technologies also play a fundamental role in new forms of hybrid attacks against the West. Troll farms contribute to hyperpolarized debates, further developing schismogenesis.³⁵ Many citizens with access to social media are subconsciously led to choose one side of a purely manufactured debate. Interest is often generated and sustained by the spread of memes that play to each side of a divisive debate in a civil society, which makes identifying hostile attempts to undermine civil society even more urgent for the United States and its allies.

Adversarial states rely on their social media actors to pose as citizens in other states to deepen and to polarize divisions and cleavages, as well as to turn policy debates into threats to groups on both sides of an issue. These actors create seemingly genuine domestic movements such as fake veteran groups that appear American but pursue conspiratorial grievances in hopes of gaining citizen-advocates for the movement.³⁶ The hope is that the artificially implanted movement will take on a life of its own as more such actors encourage duped citizens to fight for both sides of the fabricated causes.

The problem with these movements is that they encourage debates about governance while making active calls for violence. Little investigation has considered how much antigovernment activity is homegrown and how much is exploitation by foreign actors with knowledge of divisive issues, which remains within the theoretical framework of schismogenesis. Although identifying true intellectual debates between citizens and fabricated divisive discussions among hybrid actors is quite difficult, evidence does suggest a Russian troll farm pushed for “Brexit,” hacked the 2017 French presidential election, and meddled in the 2016 American presidential election.³⁷ The US military, due to the Posse Comitatus Act of 1878, however, cannot respond to such hybrid attacks on civil society. National intelligence agencies and federal law enforcement must deal with these problems.

35 Dave Lee, “The Tactics of a Russian Troll Farm,” BBC News, February 16, 2018.

36 Craig Timberg, “Russian Operatives Used Twitter and Facebook to Target Veterans and Military Personnel, Study Says,” *Washington Post*, October 9, 2017.

37 Robert Booth et al., “Russia Used Hundreds of Fake Accounts To Tweet about Brexit, Data Shows,” *Guardian*, November 14, 2017; Laura Daniels, “How Russia Hacked the French Election,” *Politico*, April 23, 2017; and Dan Mangan and Mike Calia, “Special Counsel Mueller: Russians Conducted ‘Information Warfare’ against US during Election To Help Donald Trump Win,” CNBC, February 16, 2018.

As Lieutenant General H. R. McMaster said, “There are two ways to fight the United States military: asymmetrically and stupid.”³⁸ The stupid way was how Saddam Hussein engaged in conventional battles with the US military and its coalition allies in 1991 and 2003. The asymmetric way is combating US influence and American military power with indirect efforts. China’s and Russia’s sociocultural attacks on American society are an asymmetric, nonkinetic method of perpetrating a political and an informational war within the United States. Such warfare is difficult for political and military leaders to respond to adequately, which has dark implications for how democracies are supposed to work.

In a cruel twist of fate, the same Western culture and civil society institutions that made America and the West culturally stronger than the Soviet Union have been exploited by the losing side of the Cold War. It is almost as if Western leaders never thought the features that enabled the triumphant defeat of Communism could ever be used to fragment the United States and its allies. Because Western leaders typically think of warfare in terms of the Clausewitzian trinity—government, people, and the military—civil society is often overlooked as a target.³⁹ What Clausewitz did not address in his early nineteenth century writings was that civil society is the sinew binding the citizenry, military, and government to one another. Attacking this “glue” appears to be more successful than targeting each part of the trinity directly.

Strategic Scope

The West has several suspicions regarding Chinese and Russian motivations for relying on this type of warfare to create schismogenesis and to weaken the American-led world order. Such infiltration and disruption of Western civil society undermines democratic institutions, thereby complicating the policy-making process. More importantly, it is an asymmetric strategy that weakens Western power and strength without substantial financial investments in conventional armaments. And finally, there is little risk of igniting a conventional military engagement with a more powerful opponent.

By injecting polarity, divisiveness, and fragmentation into free-speech debates, hybrid actors can sow political confusion in Western states to give authoritarian regimes more breathing space, both domestically and internationally. Besides using social media trolls and bots to encourage division, Russian-backed media and news platforms present counternarratives and conspiratorial ideas in the West.⁴⁰ During the Cold War, the United States actively defended against such political and information warfare with the US Information Agency.⁴¹ Today, however,

38 LTG H. R. McMaster, quoted in Jeff Schogol, “‘American War Generals’ a Sobering Reflection on US Failures in Iraq,” *Military Times*, September 11, 2014.

39 Carl Von Clausewitz, *On War*, trans. and ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 32, 89.

40 T. S. Allen and A. J. Moore, “Victory without Casualties: Russia’s Information Operations,” *Parameters* 48, no. 1 (Spring 2018): 59–71.

41 Nicholas J. Cull, *The Decline and Fall of the United States Information Agency: American Public Diplomacy, 1989–2001* (New York: Palgrave Macmillan, 2012).

adversarial methods are subversive, the amount of threat activity is overwhelming, and US government agencies are hard-pressed to keep up with, counter, deter, or defeat adversaries in the information domain.

Civil societies in Australia and New Zealand also appear to be under assault from the Chinese government. A scholar who identified how the Chinese were buying political parties and public intellectuals in Australia and New Zealand began to be intimidated by Chinese agents when she exposed these actions in her published writings.⁴² This documented attempt by an adversarial government to usurp civil society has major implications for the West since it shows China could easily use transnational connections to pursue similar actions in the United States and Europe.

Growing evidence also indicates Russian support of various civil society groups in the United States such as an antifracking group and the National Rifle Association (NRA).⁴³ Such actions by Russia seemingly to protect the environment and support constitutional gun rights are not virtuous. Instead, supporting the antifracking group protects Russia's economic interests and supporting the NRA allows Russia and other authoritarian governments to paint American democracy as a dangerous experiment that should not be emulated.⁴⁴

Similar actions by foreign entities to support other civil society groups indicate American politics are being subverted to foment long-term instability. If one accepts the idea that such groups are designed to uphold the rights of citizens, then one should also assume America's adversaries understand that idea too. China and Russia likely find it in their national interests to fund and to support controversial civil society groups for the purpose of exacerbating societal tension and violence, which fits the model of schismogenesis.⁴⁵ This practice has been best exemplified by Russian troll farms creating seemingly homegrown movements that center on unarmed black men being shot by police and include one sham group cheering police actions and another protesting them.⁴⁶

Cryptocurrency and artificial intelligence technologies also provide tools for schismogenesis. With the advent of Bitcoin and similar cryptocurrencies, covertly funding various civil society groups becomes much easier for adversaries to do and more difficult for Western security

42 Matt Nippert, "University of Canterbury Professor Anne-Marie Brady Concerned Break-Ins Linked to Work on China," *NZ Herald*, February 16, 2018.

43 Merrill Matthews, "Democrats Dig for Russian Connection and Uncover Environmentalists," *The Hill*, October 26, 2017; and Tim Dickinson, "Inside the Decade-Long Russian Campaign to Infiltrate the NRA and Help Elect Trump," *Rolling Stone*, April 2, 2018.

44 Isaac Stone Fish, "How Chinese Media Covers U.S. Gun Violence," *USA Today*, February 17, 2018; and Erin Griffith, "Pro-Gun Russian Bots Flood Twitter after Parkland Shooting," *Wired*, February 15, 2018.

45 Philip Ewing, "Russians Targeted U.S. Racial Divisions Long Before 2016 and Black Lives Matter," NPR, October 30, 2017.

46 Donie O'Sullivan, "Her Son Was Killed—Then Came the Russian Trolls," CNN News, June 29, 2018.

agencies to detect.⁴⁷ The development of artificial intelligence will only make employing social media easier because bots can maintain hundreds of social media accounts to interact with citizens in a humanlike fashion, and potentially to recruit humans to support their false causes. Furthermore, future developments of quantum computing will improve the efficacy of such actions to a currently unthinkable level of precision.

Actively creating schisms to undermine societies is a relatively effortless venture in heterogeneous societies with deep-rooted and crosscut social cleavages. As a result, Russia, China, Iran, North Korea, Islamic State, and other illiberal states will likely continue and even escalate their efforts in hopes of tearing apart the civic fabric in the United States and other Western nations. This strategy, which was used to promote Texas's secession and California's independence, is meant to undermine Western societies by making citizens feel that they have no stake in the system and that their government is no longer working.⁴⁸ With California initially allowing a radical measure to propose splitting into three different states on the November 2018 ballot, there is little doubt Russia and other anti-Western actors will support similar initiatives to weaken American power.⁴⁹

Strategic Implications

The United States and many of its Western allies lack the legal framework and the institutional capabilities to deal adequately with this challenge. Since most democracies have federal laws that forbid their militaries from operating domestically, the new battlespace falls under the responsibility of domestic law enforcement. Thus, the challenge ahead is both conceptual and operational. The threat must first be recognized and then countered. Regardless, an active defense and a strategic offensive by Western governments are required to discredit hybrid actors and to punish the regimes backing their attacks.⁵⁰

The internet and the many web-based tools create a separate, exploitable social dimension within the evolving human-to-human interface. When external hybrid actors create schisms within this network, security and law enforcement authorities must evaluate the jurisdictional limitations of law enforcement, counterintelligence, or counterespionage authorities. Regardless, any efforts to generate public awareness of the hybrid activity will have to use the previously exploited interfaces. Deep-rooted antigovernment sentiments in the American public's discourse present an additional challenge for the US government's responses. And so, the only way to prevent hybrid actors

47 Jahara Matissek, "Is China Weaponizing Blockchain Technology for Gray Zone Warfare?," *Global Security Review*, September 28, 2018.

48 David Martin Davies, "Examining How a Russian 'Troll Factory' Pushed Texas Secession," Texas Public Radio, October 23, 2017; and Will Yates, "'Russian Trolls' Promoted California Independence," BBC News, November 4, 2017.

49 Bob Egelko, "Splitting Up California: State Supreme Court Takes Initiative off Ballot," *San Francisco Chronicle*, July 18, 2018.

50 James P. Farwell, "Countering Russian Meddling in US Political Processes," *Parameters* 48, no. 1 (Spring 2018): 37–47.

from labeling any public awareness campaign as a covert psychological operation conducted by the US government against its own citizens is for the United States to maintain transparent efforts to encourage civil society groups to behave with civility. Even then, success is not guaranteed.

Security agencies can deter social media actors by using continual vigilance and countermeasure efforts resembling those employed during the Cold War. Western states can also create costs for hybrid activity by engaging in retaliatory acts that likewise empower civil society actors to antagonize the adversaries responsible for schismogenesis. This strategy may be difficult, however, because of the risk associated with crossing authoritarian regimes and illiberal democracies that exercise tight control over civil society. Regardless, Western values and traditions are generally idealized by citizens in authoritarian countries, which leads many refugees to seek asylum and educational opportunities in the West. Western governments can consult Cold War era tactics, techniques, and procedures to combat and to deter hybrid actors from attacking Western civil society. These governments can also use emerging technologies such as quantum computing to detect hybrid actors operating in Western civil society under false pretenses.

If we transcend the optimism surrounding globalization and the internet as benevolent forces and take account of the reality that they will be increasingly exploited to undermine the West, then a proper conceptualization of schismogenesis warrants the development of deterrent capabilities. Western leaders do not critically engage in debates about the attacks on civil society nor are deterrent capabilities credibly mused beyond academic recommendations from the cyber protection measures outlined in the Tallinn Manual that have yet to be operationalized into robust security policies in the West.⁵¹ As a result, illiberal regimes act with impunity. It is precisely because authoritarian regimes fear their own internal weaknesses that they decry the appeal of liberal democracies. Yet that appeal is the profound reason why refugees flow toward the West and not toward Russia, China, or Iran, and it is what compels these regimes to engage in the grand strategic game of schismogenesis against the West.

Elites within the political and security establishments must acknowledge and comprehend the nature and character of this threat to civil society. This recognition will enable the preparation of the legal frameworks needed to protect the new battlespace within Western civil societies from being exploited by adversarial states and their proxies. This effort will likely require an updated twenty-first century version of the *Posse Comitatus Act* that enables the American military to work domestically to protect civil society from hybrid actors pursuing schismogenesis. Western governments must balance their efforts to

⁵¹ Michael N. Schmitt, *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations*, 2nd. ed. (Cambridge: Cambridge University Press, 2017).

counter these external challenges with their protection of fundamental liberal values and principles.

Such equity might be problematic for the nature and the strength of the American republic, however, when the winner of the 2016 presidential election has reluctantly acknowledged, or outright rejected, the likelihood of hostile social media activity influencing that election's campaigns.⁵² Moreover, the future of the United States could be bleak if it continues denying the information presented by its intelligence agencies or it remains reluctant to investigate and to punish those who aid and abet hybrid actors. Without decisive action, American civil society will likely continue to be fractured by social media warriors well beyond the 2020 election.

Buddhika B. Jayamaha

Dr. Buddhika B. Jayamaha, a former airborne infantryman and veteran of the 82nd Airborne Division, US Army, with numerous deployments to Iraq, holds a PhD in political science from Northwestern University. After conducting postdoctoral research at the University of Wisconsin–Madison on food security in fragile states, he joined the Department of Military and Strategic Studies at the US Air Force Academy.

Jahara Matissek

Maj Jahara Matissek, an officer and pilot in the US Air Force, holds a PhD in political science from Northwestern University. He currently serves as an assistant professor in the Department of Military and Strategic Studies at the US Air Force Academy and as a nonresident fellow with the Modern War Institute at West Point.

⁵² Jonathan Masters, "Russia, Trump, and the 2016 U.S. Election," Council on Foreign Relations, February 26, 2018.

Multidimensionality: Rethinking Power Projection for the 21st Century

David J. Katz

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ABSTRACT: This article argues American military strategists must incorporate multidimensional power projection into their planning processes to counter adversarial actions by gray-zone actors. By developing a more complete concept of power projection, the United States can apply its resources more effectively.

The United States faces coercive gradualism in the South China Sea, nuclear provocation by a rogue state on the Korean peninsula, and gray-zone aggression in the Ukraine and the Levant. In these challenges, our adversaries purposefully occupy the space between war and peace. They negate US military advantages by operating below the threshold of armed conflict and through means designed to avoid, or be immune to, combat power. America's deterrence posture is likewise becoming irrelevant because its adversaries operate successfully without resorting to war.

At root, these diverse challenges target Pax Americana—the networks of allies, systems of international diplomacy, commerce, and law, as well as large swaths of territory and the resources they encompass. Without a redesign of American global strategy, these networks and resources could be lost. Accordingly, campaign planning must unify power projection across all dimensions to press US advantages, defeat adversaries, and maintain the desired strategic balance. In summary, the United States must campaign against adversarial states and nonstate actors, organizations, and individuals. The United States must successfully operate in environments of intentional ambiguity, opacity, and asymmetry, and do so without its most powerful weapons.

America's rivals use various types of unrestricted warfare to achieve a competitive, risk-adjusted advantage.¹ To defeat these actors, the US concept of power must expand to encompass an almost unlimited array of dimensions of power such that the lines between hard and soft, kinetic and nonkinetic will blur. The US concept of power projection must expand from direct source-to-target frameworks and encompass indirect and intermediated projection through networks and systems. America must be able to orchestrate the interactions between its power and its projection of that power on guidance, delivery, and effects by employing spatial, nonspatial, hybrid, and complex projection means.

Mr. David J. Katz works as a senior analyst at US Special Operations Command, J35 Transnational Threats Division, Counter Threat Finance. A West Point graduate, he served in the US Army as an infantry officer and Green Beret captain. He also worked as an institutional investor and advisor before founding his own firm that provided advanced analytics on more than \$3 billion of clients' private equity investments.

1 Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Beijing: PLA Literature and Arts Publishing House, 1999).

For these reasons, American analysts, planners, and practitioners require a framework that enhances exploitable advantages over our adversaries and that supports the design, development, and execution of campaigns that capitalize on those advantages. This framework must integrate power projection at its most granular: payloads combined with projection vectors in specific dimensions, in a timely manner, to form global campaigns of joint distributions of power across multiple dimensions. This model must combine the arrays of power with the mechanics of projection by vector, through networks, and across systems while accounting for impediments like opacity, agency, and asymmetry.

Multidimensionality

We live in a multidimensional world. Typically, we campaign on land and sea and in air and space. But information has become a new campaign front. It challenges us to think beyond geographically tethered information to nonspatial information and from singular, granular data to large scale, millennia-old nontangible systems like religion, finance, and diplomacy as means for power projection. Multidimensionality exists, in a nascent form, within current military planning as DIMEFIL (diplomatic, information, military, economic, financial, intelligence, and law enforcement). A complete spectrum of power projection extends DIMEFIL infinitely to include all dimensions offering all exploitable advantages, whether structural or transient.

Power is applied to a target in order to bring about a desired change in its state. Power projection is the process of delivering single or multiple instances of power within a dimension. Multidimensional power projection is this process extended across multiple dimensions and described through four essential elements: class, source, payload, and vector. *Class* defines the behavior of power against a target's state. Both a bullet driven by gunpowder and a bayonet driven by muscle-power deliver kinetic energy to a target, thereby changing its state.

The behavior of the bullet and the bayonet against the target is kinetic, and accordingly, their class is kinetic. In one case, the *payload* is a bullet traveling along a ballistic path. In the other, a bayonet follows the arc of human physiology. Both the bullet and the bayonet are payloads; the path and the arc are projection *vectors*. A *source* is the initiator of an instance of power projection—shooting a bullet, thrusting a bayonet. A soldier, a policeman, and a criminal each possess and can initiate an instance of kinetic power projection.

Projection Vectors

Projection vectors implement a class of behavior on a payload within a specific dimension. The pistol's barrel directs kinetic force (class) applied to a bullet (payload) creating a ballistic path (vector) within a kinetic dimension. An ambassador (source) hand-delivering (vector) a demarche (payload) to a rival's representative (target) is an instance

of diplomatic power, formal communication by a sovereign entity in a diplomatic dimension.

Projection vectors, like all vectors, have an angle and a length. Direct bilateral projection, from source to target, is a zero-angle vector. We tend to think of power projection as a single instance of a payload traveling a vector from source to target, like a package delivered by a courier or an artillery shell fired from a cannon. But force can be applied on a payload by the target, pulled rather than pushed. If the target has an affinity for something, perhaps bulk cash, and a payload is designed to contain or display such characteristics, the target may pull, move, or capture the payload by expending resources in the projection dimension. Absent applied force, a payload remains static. A payload in motion tends to remain in motion so long as the forces applied to it exceed the friction of forces along its path.

Networks

In simple terms, networks are collections of entities and connections (nodes and edges). Without networks, projection remains bilateral. Networked power projection offers a multiplicity of paths to the target, which may include indirect, nonspatial, and complex multidimensional paths. Multiple paths in multiple dimensions require multiple vectors, each operating within the dimension of the connection between networked entities. Networked power projection delivers a number of offensive advantages such as expanding the number of geometric paths that make defense increasingly difficult. The use of friendly, neutral, and hostile intermediating entities may mask power's origin.

Networked multidimensional power can come from areas and in forms outside of the antagonist's expectation, awareness, or collection capabilities. Projecting power through a network requires understanding how payloads interact with intermediating entities, possibly requiring semiautonomous or autonomous guidance for the payload. Networked power projection also requires planning for the comparative velocities of each payload. Multidimensional shock effect, where payloads from multiple dimensions arrive on target at the same time amplifies results and is a planning consideration.

Systems

Systems are subsets of networks. Manufactured systems, like those of Pax Americana, are created and maintained because they offer a positive net benefit, obtained through transformation, to their participants. Systems—such as the global maritime commons—are not necessarily bound by geographic or spatial limits. Systems—such as transnational supply chains that manage factors like risk, demand, and ownership—have a nonspatial aspect. Once created, these systems tend toward stability as a means of preserving their benefits, and they react against changes that pose a risk to their purpose and their transformative

processes. Consequently, they can be harnessed through their tendency to maintain their present state.

Systems contain the potential for several types of systemic failures: cascades, contagions, and “black swans.” Cascading failures occur when one fault within a system causes subsequent multiple failures. System contagions occur when a system’s nodes, edges, and edge characteristics are exploited to propagate effects antithetical to its purpose.

The Great Depression (1929–39) offers a contagion example. When a local bank failed, all its debt, typically borrowings from other banks, did not get repaid. The holders of that debt, regional banks, then failed and their debts had to be written off. When regional banks failed, their creditors, money-center banks, either failed or sold their debt and ceased lending. The resulting credit contraction spurred more local and regional bank failures. Generally, contagions spread an infection through horizontal, peer-to-peer relationships, while cascade failures occur in vertically integrated systems like supply chains.² Black swans are unpredictable outliers that are typically more than three standard deviations out from a distribution’s mean: “Nothing in the past can convincingly point to [their] possibility.” Yet these events, such as the terrorist attacks of September 11, 2001, and the Fukushima accident, make “an extreme impact.”³

Illustrating Multidimensionality in the Middle East

Multidimensional campaign planning can take place once the analyst, planner, or practitioner develops an appreciation for the class, source, payload, and vector of power projection, both inside and outside networks and systems. With this understanding, the Israelis might consider employing a persistent, multidimensional campaign against the Iranian state to interdict, undermine, or collapse the missile and rocket supply chains inside Iran instead of relying upon habitual airstrikes in Syria.

Likewise, Saudi Arabia could construct a financial cordon sanitaire to constrain Iran’s use of external financial proxies such as the Omani rial as well as to interdict bonds issued to develop the South Pars gas field.⁴ Added to a range of physical, informational, financial, kinetic, and electronic dimensional campaigns, Saudi Arabia and Israel jointly may be able to contain Iranian actions while creating a series of self-amplifying cascade failures to roll back Iran’s foreign adventurism.

2 Jeffrey D. Sachs, “Blackouts and Cascading Failures of the Global Markets,” *Scientific American*, January 1, 2009.

3 Nassim Nicholas Taleb, “The Black Swan: The Impact of the Highly Improbable,” *New York Times*, April 22, 2007.

4 *Majority Report on the Review of U.S. Treasury Department’s License To Convert Iranian Assets Using the U.S. Financial System by the Permanent Subcommittee on Investigations* (Washington, DC: Senate Committee on Homeland Security and Governmental Affairs, 2018).

Using Multidimensionality in the South China Sea

China's dominance in the South and East China Seas appears to be a "wicked problem" when viewed conventionally.⁵ China's segmentation of the South and East China Seas from the global maritime commons included constructing in-depth missile and submarine coverage; using the deniable actions of the maritime militia's "little blue men" to harass, ram, and sink civilian and sovereign ships; declaring an air defense identification zone; and building militarized islands in the Spratly and Paracel Islands.⁶

China established a corresponding legal basis for its strategy and actions in 1992, 1996, and 1998 when it crafted legislation to assume regulatory and maritime law enforcement jurisdiction. With its own sovereign claim and subsequent legal justification, China has pursued operational jurisdiction of its near seas through civil maritime rights enforcement.⁷ China's actions, all below the level of armed conflict, are creating two separate and ultimately incompatible systems—the Chinese dominion of its near seas and the international rule of the global maritime commons.

One example of system-level power projection appropriate for the situation in the South and East China Seas would be the US Navy maintaining maritime presence and movement as well as conducting information operations across legal, economic, and financial dimensions below the level of armed conflict. In this manner, the United States can help other countries in the region maintain a "free and open Indo-Pacific" to "win before fighting."⁸ From a multidimensional perspective, Chinese strategy is based upon a profound and fundamental miscalculation that will ultimately cause its unraveling.

China's physical and legal segmentation of its near seas has resulted in a new system boundary that can be exploited to US advantage. On one side, the maritime commons is a globally scaled, integrated system of shipborne freight distribution, economic trade, and financial risk management whose physical passage is guaranteed under US stewardship and whose contractual redress operates under long-established, internationally accepted law. On the other side, the emerging Chinese dominion is an extension of recent Chinese law backed by regular and irregular force. Ninety-five percent of China's

5 John C. Camillus, "Strategy as a Wicked Problem," *Harvard Business Review*, accessed April 18, 2019.

6 Department of Defense (DoD), *The Asia-Pacific Maritime Security Strategy: Achieving U.S. National Security Objectives in a Changing Environment* (Washington, DC: DoD, 2015), 16; Andrew S. Erickson and Kevin Bond, "Dredging under the Radar: China Expands South Sea Foothold," *National Interest*, August 26, 2015; Asia Maritime Transparency Initiative, "Update: China's Big Three Near Completion," Center for International and Strategic Studies, June 29, 2017; and Office of the Secretary of Defense (OSD), *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018*, annual report (Washington, DC: OSD, 2018), 12.

7 M. Taylor Fravel, "China's Strategy in the South China Sea," *Contemporary Southeast Asia* 33, no. 3 (December 2011): 293, 303.

8 *Hearing on the United States Indo-Pacific Command and United States Forces Korea*, 116th Cong. 12 (2019) (statement of ADM Philip S. Davidson, commander, US Indo-Pacific Command).

foreign trade is seagoing freight contributing more than \$2.2 trillion to China's gross domestic product; more than 50 percent of that trade crosses the maritime boundary.⁹

Using presence and movement, US maritime power projection can exploit system advantages short of armed conflict (Class: Physical; Source: US Navy; Payload: Short-term, random, maritime exclusionary zones on outbound China container ship routes inside the global commons and outside the force projection range of the Chinese navy; Vector: Military exercises and maritime law enforcement). These diversions increase the distances and the durations of container ship voyages—which in turn, increase the expenses for fuel, labor, and insurance—to deliver real-time boundary costs that can be matched to China's gray-zone actions. Russia's actions against ships bound for the Ukrainian ports of Berdyansk and Mariupol demonstrate the costs imposed by such actions.¹⁰

Even a single-day diversion increases the costs associated with keeping merchandise in inventory: the longer voyage not only prevents cargo from reaching its destination port and being sold on schedule but also drives up expenses resulting from financing acquisition costs and shipping fees within the supply chain. If the delays are significant, forward contracts, financial instruments used to safeguard against prices changing while merchandise is in transit, may even expire before the ship reaches port. Fortunately, extensions on these protections can be purchased—for a “small” fee.

The expenses resulting from the diversion can be amplified through financial power projection to deliver significantly higher costs to China's exports and gross domestic product. A military agency that requires bunker fuel, Military Sealift Command perhaps, could increase regional buys of the commodity, which is subject to financial speculation, immediately before exclusionary zones are established to drive the price of the resource up (Class: Financial, Source: Military, Payload: Cost increase, Vector: Purchase). Hedge funds and commodity brokers sensing a price movement caused by financial power projection may buy fuel futures hoping to profit from the price change, driving the price even higher. This scenario provides an example of planned financial-military power projection naturally stimulating the financial-commercial dimension.

A declaration by the US Department of State of increased risk in the western Pacific due to militant actions in China's near seas publicly justifies the military establishment of exclusionary zones to mitigate the risk associated with maritime exercises (Class: Diplomatic, Source: US State Department, Payload: Public declaration, Vector: Media). Such an action may result in insurance companies raising their rates, making maritime insurance more expensive and possibly more difficult to

9 “China Trade Profile,” World Trade Organization, accessed March 12, 2019; David C. Gompert, Astrid Stuth Cevallos, and Cristina L. Garafola, *War with China: Thinking Through the Unthinkable* (Santa Monica, CA: RAND Corporation, 2016), 43.

10 Ihor Kabanenko, “Russia's ‘Boa Constrictor’ Strategy in the Sea of Azov: A Prelude to Amphibious Landings?,” *Eurasia Daily Monitor* 15, no. 89 (June 2018).

obtain. If risk along a transit route becomes greater, and consequently more expensive, the costs of shipping and financing goods on that route likewise increase, and forward contracts may become scarce. In this example, one instance of a maritime exclusion zone tees up potential cascades of additional power projections through the informational and financial networks integrated within the global maritime commons.

Although physical maritime diversions, by nature, affect the outbound merchandise shipped at the end of supply chains, payloads and projection vectors can also be designed for upstream processes related to manufacturing, logistics, or material handling. Interventions—such as buying or selling primary components of targeted supply chains, contracting services associated with paired logistics chains, and trading financial instruments of associated companies—could induce cascading economic and financial failures and contagions (Class: Financial, Source: Commercial, Payload: Stock-out/Supply Glut, Vector: Purchase order). In this context, shipping containers (onboard and in-port), freight space, bunker fuel, repair parts, stocks, bonds, insurance, loans, derivatives, futures, forwards, and swaps become targets. When physical maritime diversions target outbound container ships, ancillary power projections can target the individual components of China's export-driven supply chains.

The integrated, multidimensional power projection, which is all nonkinetic, demonstrates how America can extract real costs from China's export-driven economy. Furthermore, the United States has an inherent capability to scale the process and its effects through multiple exclusionary zones to escalate the effects from one container ship to many, one supply chain to many. Another benefit of brief maritime diversions is a lower probability of unwanted escalation than other physical interventions since such actions do not constitute a blockade nor an embargo and do occur outside the range of China's blue water navy as well as at the limit of its missile range. In this case, unified multidimensional power projection delivers a cost not a threat because it does not change "the distribution of power during the crisis."¹¹ Ultimately, any antagonist's ability to respond in kind to this scenario is limited to the reach of its physical power projection capabilities.

Conclusions

Multidimensionality and its essential elements of class, source, payload, and projection vector offers a simple but abstract means for analyzing, designing, and modeling unified, multidimensional campaigns. It enables the tailored application of power using any and all exploitable advantages across a spectrum of cooperation, competition, conflict, and combat. Multidimensionality designed for networked and systemic power projection offers a number of advantages: multiple paths to the target; indirect, complex, and nonspatial paths; multiple

¹¹ Branislav L. Slantchev, *Military Threats: The Cost of Coercion and the Price of Peace* (Cambridge: Cambridge University Press, 2011), 66.

projection vector types; and ballistic, semiautonomous, and autonomous guidance options.

In designing campaigns against states and their diffused nonstate power, our campaigns must join military, whole of governmental, and nationally sourced economic and financial power with extra national networks and systems. Our campaign planning must unify power projection across all dimensions to press our advantages, defeat our adversaries, and maintain our desired strategic balance. In an era of coercive gradualism, nuclear provocation, and gray-zone competition that purposefully occupies the space between war and peace, dimensionality may offer a better, more innovative and imaginative way to respond to some of the world's worst actors, while reducing risk and promoting peace.

TECHNOLOGICAL INNOVATION: PROBLEMS & PROSPECTS

High-Energy Laser Weapons: Overpromising Readiness

Ash Rossiter

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ABSTRACT: This article recounts some of the basic history of laser weapons in the context of the great-power rivalries of the United States, Russia, and China. The author then offers his perspective on the current escalation of investments in high-tech warfare.

Defense professionals increasingly believe high-energy lasers (HELs), which achieve continuous power output of at least 20 kilowatts (kW), are technologically mature enough to become the mainstay weapon of advanced militaries.¹ An examination of past efforts to develop such weapons, however, suggests caution. The history of actualizing lasers as a weapon can be summarized as one of repeated attempts to develop ambitious, big-ticket laser weapon systems before the associated technologies were sufficiently mature. This article argues the impetus for these premature—and ultimately disappointing—efforts was overexuberance within America’s national security establishment about the potential military applications of lasers. This imbalance between promise and readiness resulted in the United States losing time and significant sums of money. To support this claim, the article examines the role of technological hype in the American experience of developing powerful laser weapons.

Current optimism about laser weapons is far from novel. At the end of the last millennium, the Chinese “Academy of Military Science, the People Liberation Army’s leading think tank on future warfare, believe[d] lasers would likely become an integral aspect of twenty-first century combat.”² At about the same time, the US Defense Science Board noted in a comprehensive review that such weapons had “the potential to change future military operations in dramatic ways.”³ For more than half a century, several countries—and as with most cutting-edge, defense-related technologies, the United States is the exemplar case—channeled significant sums into developing antimateriel laser weapons. But overall, these attempts yielded disappointing results.

Dr. Ash Rossiter, an assistant professor of international security at Khalifa University in Abu Dhabi, received his PhD from Exeter University in 2014. He specializes in the changing character of war, conflict and technology, and international security.

1 Jason D. Ellis, *Directed-Energy Weapons: Promise and Prospects* (Washington, DC: Center for a New American Security, 2015); J. R. Wilson, “At Long Last, Laser Weapons Are Nearing Deployment,” *Military & Aerospace Electronics* 28, no. 7 (July 25, 2017); and Andy Exrance, “Laser Weapons Get Real,” *Nature* 521 (May 2015): 408–10.

2 Mark A. Stokes, *China’s Strategic Modernization: Implications for the United States* (Carlisle, Pa.: Strategic Studies Institute, 1999), 204.

3 Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L), *Defense Science Board Task Force on High Energy Laser Weapon Systems Applications* (Washington, DC: Department of Defense [DoD], 2001), iv.

Despite past failures, interest in HEL weapons has not waned. Many states today are looking to lasers to solve a range of near-term tactical and longer-term strategic challenges. As a response to the penetration of its airspace by North Korean drones, for example, South Korea plans to deploy HEL weapons at its border by 2020.⁴ Staying with addressing threats on the Korean Peninsula, US defense planners are exploring a more ambitious scheme to fit high altitude, long endurance manned or unmanned aircraft with powerful lasers to intercept North Korean (and other) ballistic missiles during their boost phase.⁵

At one level, it is no surprise states would persist in pursuing HEL weapons. Humans have always sought advantages over each other through acquiring novel or superior technology. In the high stakes of war, maintaining a technological edge over adversaries is a life or death business. Though technologies usually advance incrementally, sometimes a sudden leap forward can lead to high levels of exuberance about a technology's potential to alter established ways of doing things.⁶ For these reasons, break-through technologies command the imagination of military leaders. This perspective is especially true for states that pursue qualitative rather than quantitative advantages during arms races.⁷ As Henry A. Kissinger wrote shortly before lasers were first successfully tested, "Every country lives with the nightmare that even if it puts forth its best efforts its survival may be jeopardized by a technological breakthrough on the part of its opponent."⁸

The laser possesses desirable properties emanating from the base concept of the technology—the production of very intense, highly focusable light—that make it highly attractive as a potential weapon, giving early adopters significant advantages.⁹ The concept of focusing intense light against an enemy has long piqued the imagination of warfighters. One legendary account of the Siege of Syracuse in 212 BC tells of Greek forces setting fire to Roman sails by using mirrors to create a "flaming death ray" of sunlight.¹⁰

4 KH Digital 2, "S. Korea To Develop Laser Weapons To Counter NK Drones by 2020," *Korea Herald*, January 6, 2017.

5 Cristina Maza, "U.S. Has a New Plan To Fight North Korea: Shoot Down Kim Jong Un's Missiles as They Launch, But Can It Work?," *Newsweek*, April 12, 2018.

6 Harro van Lente, Charlotte Spitters, and Alexander Peine, "Comparing Technological Hype Cycles: Towards a Theory," *Technological Forecasting and Social Change* 80, no. 8 (October 2013): 1615–28.

7 Taik-young Hamm, *Arming the Two Koreas: State, Capital, and Military Power* (London: Routledge, 2012); Samuel P. Huntington, "Arms Races: Prerequisites and Results," *Public Policy* 8 (1958): 41–86; Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control*, with the assistance of Donald G. Brennan (New York: Twentieth Century Fund, 1961), 497–538; Hedley Bull, *The Control of the Arms Race: Disarmament and Arms Control in the Missile Age* (New York: Praeger, 1961); and Grant Tedrick Hammond, *Plowshares into Swords: Arms Races in International Politics, 1840–1991* (Columbia: University of South Carolina Press, 1993).

8 Henry A. Kissinger, "Arms Control, Inspection and Surprise Attack," *Foreign Affairs* 38, no. 3 (July 1960): 557–75.

9 W. Brian Arthur, "The Structure of Invention," *Research Policy* 36, no. 2 (March 2007): 274–87.

10 Jeremy Hsu, "Archimedes' Flaming Death Ray Was Probably Just a Cannon, Study Finds," *Christian Science Monitor*, June 29, 2010, <https://www.csmonitor.com/Science/2010/0629/Archimedes-flaming-death-ray-was-probably-just-a-cannon-study-finds>.

Regardless of the level of conceptual attractiveness, decisions to develop any novel technology are taken under conditions of great uncertainty. For one thing, unforeseen technical hurdles encountered during development can stymie efforts to produce an operationally viable system. Even when the technology reaches operational maturity, end users may struggle to incorporate the new system within their existing concept of operations or fail to see the value of adopting it in the first place.¹¹ When it comes to selecting a potential new technology to mature into a battle-winning weapon, there rarely is ever such a thing as a sure bet.

Every decision to invest in one technology comes with opportunity costs. Most countries face something approximating this dilemma, but it is especially acute for the United States. Current and upcoming decisions on the allocation of defense resources will have a major bearing on whether America can hold its traditional military technological superiority or will see this advantage erode over time. Indeed, there is growing concern among many senior defense officials that the United States is falling behind competitors, particularly China, who have embarked on ambitious plans to develop emerging technologies with military uses.¹²

At present, the vast majority of US defense investments go into long-cycle programs to build successors to legacy systems. Critics believe this approach undermines the American goal of maintaining military technological advantage. Instead, they propose the US military should focus more on harnessing new and emerging innovations, such as artificial intelligence and robotics, in order to retain the country's technological edge over its adversaries.¹³

Decisions about which technologies to develop into future weapon systems may be complicated by the influence of hype, which has long been recognized in business literature.¹⁴ Hype can result in certain technologies attracting attention and resources disproportionate to their realistically known attributes. At worst, it can result in betting on the wrong horse. The analyses derived from this case study have implications for US strategists and defense planners charged with the difficult task of trying to achieve offset advantage by successfully leveraging America's technological prowess at a time of downward pressure on defense spending and an upward pressure of spiraling costs.

11 Ash Rossiter, "Drone Usage by Militant Groups: Exploring Variation in Adoption," *Defense & Security Analysis* 34, no. 2 (2018).

12 Cade Metz, "Artificial Intelligence Is Now a Pentagon Priority. Will Silicon Valley Help?," *New York Times*, August 26, 2018.

13 John McCain, "Remarks by Senator John McCain at the U.S. Chamber of Commerce" (speech, U.S. Chamber of Commerce Procurement Council Policy Meeting, Washington, DC, July 29, 2015).

14 Mads Borup et al., "The Sociology of Expectations in Science and Technology," *Technology Analysis and Strategic Management* 18, no. 3–4 (July–September 2006): 285–298; and Harro van Lente, *Promising Technology: The Dynamics of Expectations in Technological Developments* (Eburon: Delft, 1993).

Initial Hype

As mentioned above, the level of interest a new piece of technology garners is influenced by its envisioned applications. Thus, when the laser was first demonstrated, it was said to be a solution in search of a problem. Before long, however, analysts started to see lasers as defensive weapons and possibly even as “the biggest breakthrough in the weapons area since the atomic bomb.”¹⁵ According to one defense analyst, US military interest during 1962 was such that “there [was] scarcely an Air Force, Army, and to a lesser degree, Navy, agency” disinterested in exploring “some type of basic or applied research or experimental development with optical masers,” which were the forerunner of lasers.¹⁶

Pilot ideas ranged from using lasers as communication conduits to Chairman Mao Zedong instructing his chief scientist to “organize a group of people to specifically study [the death ray]. Have a small group of people specializing in it who do not eat dinner or do other things.”¹⁷ Working from the presupposition that “war has always had offensive and defensive aspects,” Mao ordered his scientists to think about how lasers might have defensive uses as well as offensive ones.¹⁸ Consequently, he approved the development of high-powered lasers “to counter high altitude bombers and reconnaissance platforms” under an advanced program known as Project 640-3.¹⁹ Most early HEL military research programs funded in the United States were similarly for anti-aircraft, antimissile, and anti-tank systems.²⁰

For those would-be early adopters who tried, producing a viable HEL weapon proved harder than expected.²¹ Huge technical obstacles related to laser power, beam quality and propagation abounded. Early laser programs at the lower end of the energy spectrum did, however, lead to many successful military applications in the United States and the Soviet Union, and later among some European nations. The most important operational contribution was in laser radars used for remote sensing, target designation, and range finding.²² By the end of the decade, the United States had developed bombs with guidance systems that could home in on light reflected from a pulsed laser beam, ushering in the age

15 Letter from Major General A. Schomburg to Lieutenant General J. H. Hinrichs, January 16, 1962, history office, US Army Missile Command, Redstone Arsenal, Huntsville, AL, quoted in Robert W. Seidel, “From Glow to Flow: A History of Military Laser Research and Development,” *Historical Studies in the Physical and Biological Sciences* 18, no. 1 (1987): 114.

16 Barry Miller, “Services To Push Optical Maser Effort,” *Aviation Week and Space Technology* 76 (January 15, 1962): 92–104.

17 “中国激光武器的起步：邓小平指出将是主力装备 [China’s laser weapons commence: Deng pointed out they will be decisive equipment],” Ifeng, September 9, 2010, quoted in Richard D. Fisher Jr., *China’s Progress with Directed Energy Weapons* (testimony, Hearing on China’s Advanced Weapons, Before the U.S.-China Economic and Security Review Commission, Washington, DC, February 23, 2017).

18 “China’s laser weapons,” Ifeng.

19 Stokes, *China’s Strategic Modernization*, 195–96.

20 Seidel, “From Glow to Flow.”

21 Melissa Olson, “History of Laser Weapon Research,” *Leading Edge* 7, no. 4 (2012): 28.

22 Vasyl Molenby et al., “Laser Radar: Historical Perspective—From the East to the West,” *Optical Engineering* 56, no. 3 (2016).

of precision-guided munitions, a key component of the Second Offset.²³ In the mid- to late 1970s, America significantly scaled up the power output of chemical lasers.²⁴ This development led some members of the American and Soviet defense communities to consider lasers an ideal candidate for ballistic missile defense.²⁵ The prospect of high-energy lasers altering the strategic balance made the technology highly alluring; their readiness became a second order consideration.

Strategic Seduction

Because of its minimal diffraction, called collimation, a coherently emitted laser beam can reach long ranges while maintaining a small, precise spot of concentrated energy on a chosen target. This attribute makes lasers conceptually ideal for ballistic missile defense and for anti-satellite weapons. Indeed, as far back as the early 1960s, the United States funded research on the effects of high-energy laser pulses on missile warheads.²⁶ Renewed American interest in lasers for ballistic missile defense in the early 1980s coincided with theoretical studies on satellites using small nuclear explosions to “pump” x-ray laser weapons to defeat such intercontinental weapons. Despite broad skepticism about megawatt-class nuclear-powered lasers on satellites being feasible in this role, the concept formed a central plank of the Strategic Defense Initiative outlined in Reagan’s so-called Star Wars speech.²⁷

Although Moscow did not respond by attempting to develop an analogous system of space-based nuclear-powered lasers, Soviet leaders did embark upon a lower cost, asymmetric response, namely, a ground-based laser program for knocking out satellites.²⁸ Following the 1972 treaty banning antiballistic missile systems, the focus shifted toward producing anti-satellite weapons.²⁹ Complementary to these game-changing efforts to control space, the Soviet Union designed a module for combat that included capabilities for carrying, among other items, a laser weapon capable of disabling enemy satellite electronics. After the test model failed to reach orbit in 1987, Moscow tried to fit the prototype

23 Peter DeLeon, *The Laser-Guided Bomb: Case History of a Development* (Santa Monica, CA: RAND Corporation, 1974).

24 Elihu Zimet and Christopher Mann, *Directed Energy Weapons—Are We There Yet?* (Washington, DC: National Defense University, 2009), 2.

25 Ellis, *Directed-Energy Weapons*, 24; and Bob Preston et al., *Space Weapons, Earth Wars* (Santa Monica, CA: RAND, 2002).

26 Seidel, “From Glow to Flow,” 121.

27 Frances FitzGerald, *Way Out There in the Blue: Reagan, Star Wars, and the End of the Cold War* (New York: Simon & Schuster, 2000), 370–411; and Leslie H. Gelb, “Vision of Space Defense Posing New Challenges,” *New York Times*, March 3, 1985.

28 Stephen M. Meyer, “Soviet Strategic Programmes and the US SDI,” *Survival* 27, no. 6 (November 1985): 274–92; David Holloway, “The Strategic Defense Initiative and the Soviet Union,” *Daedalus* 114, no. 3 (Summer 1985): 257–78; and Don Oberdorfer, “Military Response Planned to ‘Star Wars,’ Soviet Says,” *Washington Post*, March 8, 1985.

29 Sebastien Roblin, “Russia’s Cold War Super Weapon (Put Lasers on Everything It Can),” *National Interest*, July 16, 2017.

anti-satellite laser onto a modified military transport aircraft, which was equally unsuccessful.³⁰

American interest in lasers was also driven not by technological developments but perception of Soviet progress in this area. Throughout the latter half of the 1980s, the Pentagon repeatedly warned of a “laser gap” opening up if the Soviets converted their anti-satellite lasers into a ballistic missile defense system.³¹ Despite considerable scientific research, though, the Soviet Union failed to take HELs past a nascent prototype.³² The myth of the Soviet “killer” laser nonetheless kept US military research money channeled toward lasers.³³ American research and development (R&D) spending on HELs peaked in 1989, but fell off rapidly after Moscow’s slow progress became evident.

Undeterred by technical hurdles and tremendous development costs, the United States pursued lasers for ballistic missile defense through the mid-1990s. The Air Force initiated the Airborne Laser project, which entailed aircraft carrying lasers above the dense layer of atmosphere at 12,000 meters. Beams emitted from the chemically powered onboard devices were expected to cause an enemy’s ballistic missile fuel storage tank to explode at ranges of hundreds of kilometers. But after three-and-a-half decades of underperformance, HELs still generated tremendous hype.

Commenting on the project in 1997, Secretary of the Air Force Sheila E. Widnall declared, “It isn’t very often an innovation comes along that revolutionizes our operational concepts, tactics, and strategies. You can probably name them on one hand—the atomic bomb, the satellite, the jet engine, stealth, and the microchip. It’s possible the airborne laser is in this league.”³⁴ Despite high expectations—and a successful test against a missile in flight—size, weight, and power issues plagued the project. With \$5 billion spent before the program was canceled in 2012, the chemical laser could only be carried by a Boeing 747, and the weak beam required the aircraft to orbit extremely close to an adversary’s launch sites.³⁵

The prospect of potentially upending strategic calculations, rather than the estimated merits of the technology, best accounts for much of the sustained hype in HEL weapons. As some point out, ballistic missile defense is “an issue heavily encrusted with multiple policy and ideological considerations lying outside the general parameters of

30 Alexander Korolkov, “Laser Warfare: Sci-fi Fantasy or Future Reality,” *Russia Beyond*, November 18, 2014.

31 Matthew Evangelista, *Innovation and the Arms Race: How the United States and the Soviet Union Develop New Military Technologies* (Ithaca, NY: Cornell University Press, 1988), 258–61.

32 Bengt Anderberg and Myron L. Wolbarsht, *Laser Weapons: The Dawn of a New Military Age* (New York: Plenum Press, 1992), 133.

33 Frank von Hippel and Thomas B. Cochran, “The Myth of the Soviet ‘Killer’ Laser,” *New York Times*, August 19, 1989.

34 Angelo M. Codevilla, “This Missile Defense Program Just Won’t Fly,” *Wall Street Journal*, October 22, 1997.

35 “Airborne Laser System (ABL) YAL 1A,” Air Force Technology, accessed April 9, 2019; and Katie Drummond, “RIP, Raygun: Pentagon’s Laser Plane Laid to Rest,” *Wired*, February 21, 2012.

whether or not the critical intercept technologies actually work.”³⁶ Large defense contractors also likely have incentives to tout the possibilities for lasers given the potential reward of government funding for high risk, high reward research.

Promise-Readiness Equilibrium

In the early twenty-first century, America’s emphasis shifted from pursuing ambitious airborne and space-based kilowatt-class laser projects to developing less powerful devices intended to intercept smaller objects over shorter distances.³⁷ Cold War priorities—especially the “hard kill” of ballistic missiles—required incredibly powerful lasers that could apply beams accurately on a target for several seconds over great distances. Laser systems for defeating small objects over shorter ranges have lower technical requirements.

While laser weapons can potentially kill targets in the open faster and at much greater ranges, they cannot fire in a ballistic arc over a hill or over the horizon like conventional artillery without a sophisticated relay of mirrors.³⁸ Other properties of HEL systems do, however, give them comparative advantages over conventional weapons for point defense against rockets, artillery, mortars, and other small objects. Laser weapon systems can fire quickly and engage multiple targets simultaneously, and depending on the power source, they potentially have a limitless magazine.

Unlike most conventional kinetic weapons, lasers can produce tailored effects to cause a specified level of damage to a target and to minimize collateral damage. The cost per shot is potentially negligible, which makes laser weapon systems a cost-effective, long-term option for intercepting numerous, inexpensive targets. This favorable cost-exchange equation is an important budgetary attribute in a world where weaker opponents can use plentiful, cheap weapons to overwhelm more technological advanced nations.³⁹

American laser projects for countering rockets, artillery, and mortars in the 2000s initially built upon prototypes of the much more powerful devices developed and tested in the 1980s and 1990s, such as the joint US-Israeli tactical high-energy laser demonstrator.⁴⁰ Though this system successfully destroyed rocket, artillery, and mortar rounds in flight during field tests between 2000 and 2005, major challenges associated with portability, the logistics of handling hazardous chemicals, and

36 Roger Handberg, *Ballistic Missile Defense and the Future of American Security: Agendas, Perceptions, Technology, and Policy* (Westport, CT: Praeger, 2002), 3.

37 Sydney J. Freedberg Jr., “Laser Weapons: Lower Expectations, Higher Threats,” *Breaking Defense*, May 19, 2014.

38 Stephen D. Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton, NJ: Princeton University Press, 2004), 53.

39 T.X. Hammes, “Cheap Technology Will Challenge U.S. Tactical Dominance,” *Joint Forces Quarterly* 81 (2nd Quarter 2016): 76–85.

40 Kenneth Katzman, *Israel: Missile Defense Cooperation with the United States*, RS20516 (Washington, DC: CRS, 2000).

escalating costs led to the program's cancelation.⁴¹ By 2007, the Defense Science Board pointed to "lack of progress" and a "marked decline in interest on the part of operational customers, force providers, and industry," indicating pessimism about the near-term viability of tactical HELs had returned.⁴² Consequently, the United States curtailed much of its spending on HELs.⁴³

Some efforts to develop tactical lasers within the 10 to 100 kW range did continue, focusing on resolving size, weight, and power incompatibilities with operational platforms. The Army's 10-kW high-energy laser mobile demonstrator and the Navy's 30-kW laser weapon system provide notable examples of systems on platforms.⁴⁴ To enhance operational viability during the last decade, researchers developed fiber lasers to be compact and below the high-energy power threshold. The ability to combine their beams coherently allows the total output power to be increased while maintaining good beam quality.⁴⁵ Driven by greater commercial interest, the parallel development of fiber lasers as well as image-recognition and targeting systems increase beam accuracy, range, and quality while reducing the size and the weight of the weapon systems relative to their power output.⁴⁶ This new innovation infrastructure has closed the gap between the promise and technological readiness of tactical laser weapon systems.

More states are now developing such systems. Britain, for example, plans to test its combined fiber laser weapon, dubbed the Dragonfire, against land and sea targets by 2019.⁴⁷ Similar projects are underway in many other technologically advanced nations, especially China.⁴⁸ Thus, tactical lasers have likely reached a point of maturity whereby they will soon be fielded in a greater number of real operational settings.⁴⁹

41 Sharon Weinberger, "Laser Weapons Better Against Rockets?" *Wired*, February 25, 2008; Michael R. Dahlberg and Michael E. Cochrane, "Tactical High-Energy Laser (THEL) as a Weapon System in Future Theater Air and Missile Defense (TAMD)," ed. Ernest A. Dorko, *Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE)* 3612 (June 1999): 111–16.

42 AT&L, *Defense Science Board Task Force on Directed Energy Weapons* (Washington, DC: DoD, 2007), ix.

43 Mark Gunzinger and Chris Dougherty, *Changing the Game: The Promise of Directed-Energy Weapons* (Washington, DC: Center for Strategic and Budgetary Assessments, 2012), 56.

44 Joseph Trevithick, "The US Army's Laser-Armed Stryker Has Blasted Dozens of Drones," *The Drive*, April 17, 2017; "HEL MD Destroys Mortars Midflight," Boeing, accessed April 15, 2019; and Kashmira Gander and Rob Williams, "Laser Gun: US Navy Unveils New Weapon with Video Showing Speedboat Explosion," *Independent*, December 10, 2014.

45 Zejin Liu et al., "High-Power Coherent Beam Polarization Combination of Fiber Lasers: Progress and Prospect [Invited]," *Journal of the Optical Society of America B* 34, no. 3 (2017): A7–A14; and Zejin Liu et al., "Coherent Beam Combining of High Power Fiber Lasers: Progress and Prospect," *Science China Technological Sciences* 56, no. 7 (July 2013): 1597–1606.

46 "Fiber Laser Applications," SPI Lasers, accessed April 15, 2019; and Extance, "Laser Weapons," 410.

47 "Case Study: UK Dragonfire—Transforming Future Weapons Technology," QinetiQ blog, November 23, 2017.

48 Liu Zhen, "How China's Military Has Zeroed In on Laser Technology," *South China Morning Post*, May 4, 2018; David Szondy, "Rheinmetall's 50kW High-Energy Laser Weapon Successfully Passes Tests," *News Atlas*, December 20, 2012; and Burak Ege Bekdil, "Turkish Indigenous Laser Weapon Advances," *Defense News*, February 14, 2015.

49 Ellis, *Directed-Energy Weapons*, 4.

Despite these advances, tactical HEL weapon systems remain bulky, costly, and sensitive to vibration—features warfighters do not find appealing. Furthermore, the systems require highly skilled operators and maintenance crews to keep them functioning. Yet the smaller and more efficient laser systems become, the more likely it is that militaries will look to use them for point defense or for protecting expeditionary ground, naval, and air assets.⁵⁰

Great-Power Rivalry

Against the backdrop of today's great-power rivalry, some types of sophisticated HEL systems are viewed as potential solutions to key problems in power projection (in the case of the United States) or as a means of exploiting a critical vulnerability of an adversary (in the case of China and Russia). Aside from ballistic missile defense, America's most ambitious efforts enhance the survivability of air, and potentially maritime, platforms in an anti-access/area denial environment. This capability is especially relevant in the western Pacific, where China has fielded a series of interrelated missile, sensor, guidance, and other technologies to restrict regional access, threatening core international security interests.⁵¹

The success or failure of the US response to this challenge is highly contingent on the ability to penetrate heavily defended airspace.⁵² In this context, the possibility of plane-mounted lasers for air platform survival generates considerable hype in the United States. Size, weight, and power issues as well as targeting considerations—not least, keeping a beam focused on the vulnerable spot of a target for a minimum dwell time to achieve a “kill”—make fitting laser systems onto fast-moving air platforms tremendously more challenging than mounting a device on a ship or vehicle.

Nonetheless, by 2021, the Air Force hopes to demonstrate a 50-kW airborne laser can feasibly acquire, track, aim, and fire a beam at a dynamic target, such as an incoming missile, from a fighter jet traveling at transonic and supersonic speeds.⁵³ By 2030, the United States expects to arm an aircraft with high-energy lasers capable of defending itself against integrated air defenses.⁵⁴ Clearly, the allure of lasers as a revolutionary technology has returned, and not just in America.

Russia and China consider lasers a means of obviating key US advantages in space such as satellite-based military reconnaissance and

50 Ellis, *Directed-Energy Weapons*, 38.

51 Stephen Biddle and Ivan Oelrich, “Future Warfare in the Western Pacific: Chinese Antiaccess/Area Denial, U.S. Air-Sea Battle, and Command of the Commons in East Asia,” *International Security* 41, no. 1 (Summer 2016): 7. See also, Evan Braden Montgomery, “Contested Primacy in the Western Pacific: China's Rise and the Future of U.S. Power Projection,” *International Security* 38, no. 4 (Spring 2014): 115–49.

52 Air-Sea Battle Office, *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (Washington, DC: Air-Sea Battle Office, 2013), 3.

53 GEN James “Mike” Holmes, “Directed Energy Summit” (speech, Directed Energy Summit, Washington, DC, March 29, 2017).

54 Holmes, “Directed Energy Summit.”

surveillance as well as satellite-based communications that can affect economic transactions. Thus, fielding anti-satellite systems makes sense to America's adversaries. As Daniel R. Coats, the director of the Office of National Intelligence, told lawmakers, "Russia and China perceive a need to offset any US military advantage derived from military, civil, or commercial space systems and are increasingly considering attacks against satellite systems as part of their future warfare doctrine."⁵⁵

Given the sensitivities surrounding Russian defense projects, it is difficult to gauge progress accurately, however, some evidence suggests Russia has revived its original airborne laser weapon project for anti-satellite capabilities.⁵⁶ Consistent with Moscow's record of exaggeration, Russian defense officials have also recently boasted of an impending breakthrough in laser weapons.⁵⁷ In contrast, Beijing's efforts to develop laser weapons to counter space advantages became apparent during the late 1990s only when reports on "Chinese efforts to purchase or develop low- and high-powered laser technology, [radio frequency] jammers, and other capabilities that could be used against satellites" surfaced.⁵⁸ A more recent report confirmed China's 2005 success "of a ground-based laser weapon that was used to 'blind' an orbiting satellite."⁵⁹ More recently, the Chinese government allowed scientists to speculate the country could develop a space-based laser weapon to target satellites.

Therefore, a major breakthrough in HEL weapons, especially in a period of rising tensions, could be highly destabilizing. China would view an increased US ability to penetrate its anti-access/area denial environment with alarm. Likewise, the United States would consider the development of more advanced anti-satellite laser weapon systems provocative. But given the long lead times involved in maturing and testing HEL weapon systems, surprises are unlikely. Furthermore, there are other ways to destroy or disrupt satellites.⁶⁰

To be sure, guard must be kept against being surprised by leap-ahead technologies. But as current confrontations attest, states are just as likely to be surprised, and perhaps outmaneuvered, by enemies creatively employing simple and established technologies. Moreover, the biggest threats to American satellites are perhaps nonkinetic, such as the jamming of satellite-based positioning and communications

55 *Hearing on Worldwide Threats Before the Senate Armed Services Committee*, 115th Cong. (2017) (statement of Daniel R. Coats, Director of National Intelligence), 8.

56 Patrick Tucker, "China, Russia Building Attack Satellites and Space Lasers: Pentagon Report," *Defense One*, February 12, 2019.

57 "Russia's Hypersonic Ballistic Missile and Laser System in Final Tests, Putin Says," *Moscow Times*, April 11, 2019.

58 Eric Heginbotham et al., *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017* (Santa Monica, CA: RAND Corporation, 2015), 245.

59 Bill Gertz, "Get Ready for China's Laser-Weapons Arsenal," *National Interest*, April 12, 2017.

60 Sandra Erwin, "U.S. Intelligence: Russia and China Will Have 'Operational' Anti-Satellite Weapons in a Few Years," *Space News*, February 14, 2018.

capabilities.⁶¹ But anti-satellite laser weapons hold a unique niche in conducting difficult-to-attribute attacks due to the difficulty of proving if a satellite failure was caused by a technical issue or an attack.⁶²

Global power distribution differs much from the Cold War when the United States lacked a technological peer. China is already fielding comparable, if not superior, weapon systems and investing in such military innovations as robotics, artificial intelligence, and autonomous vehicles. In all these cases, commercialization feeds technology development and eases acquisition costs.

Conversely, powerful HELs have a small, albeit growing, commercial footprint that results in the majority of R&D funding coming from defense sources. Moreover, the United States placed severe export restrictions on end-state and component technologies. As a consequence, China and Russia will likely find it more difficult to keep pace with developments in advanced HEL systems, especially those designed for air, maritime, and ballistic missile defense. These lasers could remain an area of technological competition in which America can potentially maintain significant long-term advantages.

Conclusion

Despite the hype and the disappointment associated with emerging technologies and the reality that research funding evaporates in the absence of immediate success, high-energy lasers are an anomaly.⁶³ At their inception, lasers were not a solution-orientated defense technology. Over time, however, the potential for one laser that can perform a variety of weaponized tasks contributed to the technology's enduring attractiveness to the defense industry. Large defense contractors, incentivized by the prospect of securing government funding for conducting high-risk R&D, have likely encouraged additional hype about the possibilities of developing and fielding ambitious laser weapon systems. Defeating ballistic missiles has been the primary rationale for their development, but enthusiasm for the potential of lasers in an air platform defense role within an anti-access/area denial environment exists.

Unlike the hypothetical megawatt weapons or the highly sophisticated systems being developed for air platform survival, ground-based and ship- and vehicle-mounted tactical lasers have established an operational viability. This role is especially useful for countering rockets, artillery, and mortars as well as defeating cheap, plentiful drones and small, unmanned, boats. At a time of downward pressure on Western

61 Lin Jinshun et al., "Countermeasure Technology for MMW Satellite Links," *Aerospace Electronic Warfare*, October 2012, 20–22, referenced by David D. Chen (testimony, Hearing on China's Advanced Weapons, Before the U.S.-China Economic and Security Review Commission, February 23, 2017).

62 Todd Harrison, Kaitlyn Johnson, and Thomas G. Roberts, *Space Threat Assessment 2018* (Washington DC: Center for Strategic & International Studies [CSIS], April 2018), 10.

63 van Lente, *Promising Technology*; Jon Guice, "Designing the Future: The Culture of New Trends in Science and Technology," *Research Policy* 28, no. 1 (January 1999): 81–98; and Daniel E. O'Leary, "Gartner's Hype Cycle and Information System Research Issues," *International Journal of Accounting Information Systems* 9, no. 4 (2008): 240–52.

defense budgets, the full integration of high-energy lasers into future warfighting concepts will depend on overcoming the reputation of exaggerated expectations and poor technical outcomes, such as the degradation of laser propagation through the atmosphere.

Calculating precisely the part hype has played in the technological maturation of HELs and their ostensible readiness in a tactical role today is hard. Because hype helps to channel resources at critical junctures in the innovation life cycle, it may prove a significant factor in the emergence of some long-fuse technologies.⁶⁴ Enthusiasm for a particular technology may not be ill-placed. An unrealistic appreciation of the timeframe for its readiness, however, is often the problem: “We invariably overestimate the short-term impact of a truly transformational discovery, while underestimating its longer-term effects.”⁶⁵ As America’s military seeks to retain its edge, the experience for developing laser weapons should serve as a warning about being drawn in by a technology’s promise to deliver rapid advantages.

With little commercial interest in powerful HELs until recently, the industry has relied on enduring military interest and the corresponding allocation of R&D defense dollars to fund crucial advances in the technology. In contrast, much of the technology identified in the Third Offset Strategy is being developed in the commercial sector for civilian uses. The United States is attempting to leverage its technological superiority beyond commercial, off-the-shelf technologies that are also available to its adversaries. Unique advantages can only be derived from greater symbiosis between military and commercial innovation.⁶⁶ America would therefore do well to invest its defense R&D funds in an array of emerging technologies and across the full industry ecosystem, including nondefense commercial firms, to see what grows over time. The Department of Defense should follow this approach to maintain technological military superiority rather than allowing money to follow hype.

64 van Lente, Spitters, and Peine, “Comparing Technological Hype Cycles.”

65 Francis S. Collins, “A Genome Story: 10th Anniversary Commentary by Francis Collins,” *Guest Blog, Scientific American*, June 25, 2010.

66 Arati Prabhakar in Kathleen H. Hicks et al., *Assessing the Third Offset Strategy* (Washington, DC: CSIS, 2017), 8.

TECHNOLOGICAL INNOVATION: PROBLEMS & PROSPECTS

Innovation Tradecraft: Sustaining Technological Advantage in the Future Army

Adam Jay Harrison, Bharat Rao, and Bala Mulloth

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ABSTRACT: This article identifies the key components of an innovation ecosystem that can assist in developing nontraditional defense resources to cope with rapidly evolving technology threats. These components include organizational culture, an awareness of emerging technologies, a capacity for leveraging resources, and a strategy for absorbing external information.

For more than three years, the US Department of Defense (DoD) has been improving how it innovates in the face of rapid technological change. Dozens of departmental, service, and agency initiatives have emerged to address different aspects of the innovation problem. Significant energy has gone into linking these diverse efforts more comprehensively and collaboratively beyond the traditional defense community. But more thought must be given to the institutional competencies the DoD needs to become a focal point for creative and entrepreneurial problem solving.

The First and Second Offsets, for example, addressed a specific military-strategic calculus, namely overcoming the Soviet military's numerical superiority. In contrast, the Third Offset has taken this focus one step further by attempting to reinvent "the process of harnessing innovation to meet new enemies wherever and whenever they arise."¹ Accordingly, the top-down approach to capability development that characterized the Cold War is ill-suited for the present era.

Instead, the DoD needs a more dynamic model—one in which tacit knowledge encoded in networks of practitioners across the military enterprise drives new capabilities. Such a strategy means creating the capacity to innovate by aligning demand (from technology operators) with supply (the providers of global technologies). Building this capacity within the DoD can enhance its organizational culture, processes, and workforce—namely, enabling entrepreneurial competencies prevalent in the most competitive innovation ecosystems, such as Silicon Valley.

As part of the Third Offset, the Army established a Futures Command that will consolidate core modernization functions into a single organization. This command must place a premium on entrepreneurial competencies to capitalize on new sources of talent,

1 Damon V. Coletta, "Navigating the Third Offset Strategy," *Parameters* 47, no. 7 (Winter 2017–18): 50.

ideas, and resources.² This article outlines those competencies and discusses each of them in terms of the value it brings to the Army.

Innovation Ecosystem

We can trace the contemporary idea of innovation to Joseph A. Schumpeter's *Theory of Economic Development* (*Theorie der Wirtschaftlichen Entwicklung*), which appeared in 1934.³ Schumpeter argued economic and social change came about when technology and business innovators recognized gaps and opportunities within the chaos of a competitive environment and reacted to it by offering new products and services. An innovation ecosystem, in effect, is the collective environment consisting of economic, networking, and physical assets as well as Schumpeter's technology and business innovators (change agents) that facilitate the transfer and application of knowledge and associated technological value creation.⁴

Within an innovation ecosystem, one can find diverse, interconnected participants and resources. These components include the human capital (students, faculty, staff, industry researchers, and industry representatives) and the material resources (financial resources, equipment, and facilities) that make up institutions (universities, colleges of engineering, business schools, business firms, venture capitalists, industry-university research institutes, federal or industry-supported centers, state or local economic development, business assistance organizations, funding agencies, and policy makers).⁵

The Army can develop a network among such stakeholders to promote value-maximizing behaviors associated with the efficient transfer and utilization of tacit knowledge as well as to improve organizational flexibility and openness that are critical for innovation. A number of barriers stand in the way of achieving such outcomes in traditional military organizations, however. Among these impediments are the rigid formalisms governing complex decision-making in the military that are manifested in the hierarchical organizational structure, strict job specializations, distinct divisions of labor, and highly authoritarian culture.⁶ Another is the Army's lack of a true innovation culture.⁷

Innovative organizations implement an open strategy based upon the principle that "not all the smart people work for us." With this approach, the Army must learn to connect more effectively with smart people outside its organization to create a multiplicative network.

2 Helene Cooper, "Army, Struggling To Get Technology in Soldiers' Hands, Tries the Unconventional," *New York Times*, March 18, 2018.

3 Joseph A. Schumpeter, *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle* (New Brunswick, NJ: Transaction Publishers, 1934).

4 Bruce Katz and Julie Wagner, *The Rise of Innovation Districts: A New Geography of Innovation in America* (Washington, DC: Brookings Institution, 2014).

5 Deborah H. Jackson, "What Is an Innovation Ecosystem," Engineering Research Center, March 15, 2011.

6 Edwin Hutchins, *Cognition in the Wild* (Cambridge, MA: MIT Press, 1995).

7 COL Eric E. Aslakson, "The Army Is Falling Short in Developing Creative Leaders," *Association of the United States Army*, May 4, 2016.

Embracing the ideas in these external links will, in turn, amplify the advantage of internal efforts.⁸ Similarly, the Army needs to consider how to leverage the theory of lead-user innovation, which entails identifying sophisticated consumers who typically modify or invent products to satisfy their own needs as an important source of innovation outside the firm. Lead users can help the Army by becoming a source of new ideas capable of augmenting traditional product development within an organization.⁹

Admittedly, successful implementation of these innovation strategies presents challenges for the military services. Factors such as cultural idiosyncrasies, security, and policy constraints impede free-flowing interaction between the Army and important segments of high-tech industry. While firms operating in nondefense markets are a potential source of new, competitively differentiated technologies and business approaches, the Defense Business Board indicated the defense market is generally not attractive to commercial firms. This fact is due in part to the complex regulatory, policy, and process provisions governing defense acquisition, which represent a significant barrier to entry for firms pursuing mainly higher margin commercial markets.¹⁰

Nonetheless, the Army still needs an approach to technological innovation that enables it to create options across a diverse spectrum of potential solutions, such as cybersecurity, autonomy, and artificial intelligence, necessary for maintaining military advantage.¹¹ The Defense Innovation Initiative was launched in 2014 to begin addressing this need.¹² Since then, numerous internal initiatives have developed to connect the Defense Department to the participants and the resources necessary for a more flexible, resilient innovation posture.

Two prominent examples are the Defense Innovation Unit, which provides a channel for procuring commercial products that address military needs, and the MD5 National Security Technology Accelerator, which catalyzes the creation of startups that solve significant defense and security problems. The conceptual basis framing these initiatives also informs the Army's effort to internalize a set of competencies associated with innovating organizations—opportunity development,

8 Henry Chesbrough, "Managing Open Innovation," *Research Technology Management* 47, no. 1 (2004): 23–26.

9 Eric Von Hippel, "Lead Users: A Source of Novel Product Concepts," *Management Science* 32, no. 7 (1986): 791–805.

10 Defense Business Board, *Innovation: Attracting and Retaining the Best of the Private Sector* (Washington, DC: Defense Business Board, 2014).

11 Andrew P. Hunter and Ryan A. Crotty, *Keeping the Technological Edge: Leveraging outside Innovation To Sustain the Department of Defense's Technological Advantage* (Lanham, MD: Rowman and Littlefield, 2015).

12 Richard M. Jones, *Defense Secretary Hagel Launches Defense Innovative Initiative*, American Institute of Physics, November 18, 2014; and Chuck Hagel to the deputy secretaries of defense, memorandum, OSD013411-14, "The Defense Innovation Initiative," November, 15, 2014, Secretary of Defense, Washington, DC.

championing, resource leveraging, and location leveraging—that will enable the full advantages of an expanded innovation ecosystem.¹³

Supporting Interviews

To confirm the key components of an innovation ecosystem, we conducted 11 interviews in person, via telephone, by questionnaire, and through direct observation in formal and informal settings between January 2017 and October 2017. This qualitative method provided a rich understanding of the context of innovation within the DoD community in general and the Army in particular. We collected additional data through primary and secondary historical research and analysis based on news and industry reports and social media coverage. Using these inductive methods, we built on existing concepts in research on innovation ecosystems while exploring new strategies, processes, and relationships.

The interview data was initially analyzed to confirm the centrality of four previously identified competencies in the Army and the Department of Defense.¹⁴ Respondents mentioned the word “champion” a total of 62 times; “resources,” 53 times; “location,” 51 times; and “opportunity,” 42 times. Based on the confirmatory evidence, we organized the respondent data according to these four themes. Several other words such as “bureaucracy,” “ideas,” “trust,” “participative,” and “incentive,” were also prevalent. We determined these keywords correlated to one or more of the underlying themes and decided against separating them.

Due to the relatively small sample size limiting the impact of biases, we do not claim the findings can be broadly generalized. Such qualitative approaches, however, can “close in on real-life situations and test views directly in relation to phenomena as they unfold in practice” even for small sample sizes.¹⁵ In order to minimize the potential of verification bias, we asked open-ended, nondirectional questions. This approach, as well as an interview protocol appropriate for the participants’ depth and breadth of experience, allowed us to gain richer, more holistic perspectives.

Implications

Several areas immediately challenge the Army’s efforts to activate an ecosystem that increases its innovation capacity. Interviewees perceived risk aversion as endemic to the Army bureaucracy and deeply embedded in the organizational culture. This risk aversion and the stigma associated with perceptions of failure in the institutional Army were contrasted with

13 Adam Jay Harrison, Bharat Rao, and Bala Mulloth, *Developing an Innovation-Based Ecosystem at the U.S. Department of Defense: Challenges and Opportunities*, Defense Horizons 81 (Washington, DC: National Defense University, 2017); and Bharat Rao and Bala Mulloth, “The Role of Universities in Encouraging Growth of Technology-Based New Ventures,” *International Journal of Innovation and Technology Management* 14, no. 4 (2016).

14 Harrison, Rao, and Mulloth, *Developing an Innovation-Based Ecosystem*.

15 Bent Flyvbjerg, “Five Misunderstandings of Case Study Research,” *Qualitative Inquiry* 12, no. 2 (2006): 219–45.

the spirit of ingenuity and adaptation exhibited by the tactical military. Moreover, respondents suggested that not constructively acknowledging failure constrains organizational learning normally associated with iterative problem-solving approaches. Such a culture of risk avoidance also impacts professional development, whereby individuals electing to pursue career paths outside the norm do so at the expense of future choice assignments and promotion. Here, the check-the-box mentality of advancement limits the personal and professional diversity of the Army workforce necessary for innovation.

Several of our interviewees highlighted that mindset and systemic conservatism lead individuals to resist innovative approaches that might challenge existing organizational and behavioral norms. There is a tendency, according to Stam, to “not care about getting it right but rather care about delivering the product on time.”¹⁶ Respondents generally painted a picture of an Army bureaucracy that takes innovation for granted as a natural output of a more or less static process rather than as a living system of experimenting and learning. Such a mindset fails to emphasize opportunities for continuous improvement and causes military organizations to be, as Porkolab noted, “reactionary instead of proactive.”¹⁷

While recent progress was acknowledged with respect to the Department of Defense accessing new sources of innovation, respondents agreed such activity suffers from a lack of resources and institutional buy-in necessary to implement innovation successfully. Several subjects highlighted the failure to reconcile newer innovation approaches, such as crowdsourcing, hackathons, and innovation challenges that are currently in vogue in defense circles, with the core roles, missions, and functions of the military. In effect, this contrast creates an environment in which bottom-up innovation takes place without being internalized by the institution in meaningful ways.

Recommendations

With the creation of the Futures Command, a number of tangible, near-term opportunities, ranging from training and education programs to partnership and organizational models, provide the Army with a mechanism for internalizing the innovation competencies explored above. Though incomplete, the following recommendations represent respondents’ feedback that can be pursued as part of or as adjuncts to the Futures Command construct.

Training and education. A competencies-based approach to the development of in-depth innovation capacity starts with people. Therefore, the Army should deploy training and education resources supporting the self-initiated, discovery-based problem solving.

16 Allan Stam (dean, Frank Batten School of Leadership and Public Policy, University of Virginia), interview by the authors, March 31, 2017.

17 BG Imre Porkolab (Hungarian Ministry of Defense and former Supreme Allied Commander Transformation’s Representative to the Pentagon), interview by the authors, June 19, 2017.

Innovation training and education programs should be structured to attract talent external to the Army's traditional technology development efforts, including those who would not otherwise be aware of the opportunities to work on military and civil-military issues.

One option to address this objective involves expanding Army engagement with programs like Hacking for Defense, a university-based experiential education program that aligns Army-sponsored challenges with student teams. Now offered at more than 18 universities around the United States, this program reinforces the opportunity development competency for students and Army problem sponsors. Hacking for Defense also promotes the creation of networks between the Army and student-innovators in key innovation geographies around the country to build the resource and the location leveraging competencies simultaneously.

Additional opportunities for training and education involve the deployment of professional military education and skills-based training for the internal Army workforce to develop a cadre of personnel able to navigate bureaucratic obstacles to technological change and innovation. Training and education should cover topics like entrepreneurial leadership, leading change, problem framing, design thinking, social networking, innovation culture, organizational design, talent and risk management, and strategic technology literacy. Classes should augment the Army's current education in science, technology, engineering, mathematics, and management as per the 2014 recommendations of the National Research Council.¹⁸ A recent example of this approach has been successfully demonstrated by the Office of the Secretary of Defense in a program called the MD5 Boot Camp, a one-week curriculum that focuses on innovation skills development.

Distributed networks. Our respondents emphasized the importance of human-centered networks as a basis for opportunity development and as a means to organize resources and location-based benefits. The Army should activate extended networks of entrepreneurs, technologists, and other partners through a portfolio of programs that promote information exchanges required to connect the tangible and intangible assets—such as people, technology, capital, and infrastructure as well as the problems, customers, intellectual property, technical expertise, market information, partnership vehicles, and sales channels—necessary to conceptualize, build, and validate innovative solutions for Army problems.

Human-centered networking programs should first and foremost facilitate knowledge sharing between Army stakeholders and collaborators across government, academia, and industry. The Open Campus initiative, for example, offers academic and industry researchers opportunities to work alongside their counterparts at Army Research Laboratory facilities. Open Campus also includes a handful of extended sites where the Army researchers from these facilities are forward

¹⁸ Jacques S. Gansler et al., *Review of Specialized Degree-Granting Graduate Programs of the Department of Defense in STEM and Management* (Washington, DC: National Academies Press, 2014).

deployed into university communities to capitalize on their unique attributes.¹⁹ This model has successfully demonstrated how the Army can position its physical and knowledge-based assets in a research and development context to attract new collaborators. This model could be replicated in a search for opportunities that support nonresearch objectives. Uniformed personnel with firsthand knowledge of the warfighting domain, for example, could be placed at select universities to stimulate academic thinking on revolutionary warfighting applications of emerging technology.

Architecture. In addition to developing a human link that can rapidly deliver private sector innovation for military applications, former Undersecretary of Defense for Acquisition, Technology, and Logistics Frank Kendall called for a new architecture to capitalize on high-tech ideas that are also required to instantiate in-depth innovation capacity in the Army.²⁰ Standing up the Futures Command provides the Army with a unique opportunity to deploy a business system that aligns externally derived ideas, products, partners, resources, and expertise with the Army's concept and capability development to enable high-potential opportunities to be internalized, scaled, and sustained.

With this objective in mind, the Army should frame the knowledge and materiel-based outputs of innovation efforts like technology demonstrations and experiments, crowdsourcing, and collaborative research and development with key decision points across the capability-development enterprise. An example of this approach involves leveraging entrepreneur-based prototyping associated with activities like hackathons, crowdsourcing, and challenge prizes to investigate systematically the implications of emerging technology in application areas relevant to the Army. Correctly documented, such efforts would provide evidence-based support for concept and requirements development. In the area of contracting, entrepreneurial networks can provide new insights into the technological art of the possible that are relevant to acquisition strategy development and preacquisition market surveys.

Conclusion

Since the end of the Cold War, the United States has built a decisive military-technological edge as the cornerstone of its national defense strategy. In an effort to maintain that edge, the Army will spend more than \$10 billion on research and development in fiscal year 2019. While significant, the Army investment is a small fraction of escalating global outlays on research and technology. At the same time, the proliferation of knowledge and creative technologies are displacing traditional, capital-intensive approaches to advanced product development. The fusion of new physical, digital, and biological technologies characteristic of the Fourth Industrial Revolution is amplifying the dynamics of creative destruction with new technology-driven business models that are upending legacy

19 "ARL Open Campus," Army Research Laboratory, accessed June 30, 2018.

20 Coletta, "Navigating the Third Offset."

modes of competition at increasing rates. The hallmarks of organizations that successfully innovate in the age of disruption include characteristics like openness, connectedness, decentralization, and scalability. Taken together, the transformation of the R&D landscape from a centralized, capital-intensive model to a networked, democratic model represents a significant challenge to many traditional organizations in fast-moving markets. For the Army, the implications of this change are the impetus, at least in part, for forming the new Futures Command.

Successfully competing in the new innovation environment requires more than adjustments to organizations and processes. It demands a commitment to developing an in-depth innovation capacity—a whole new set of competencies required for the dynamic organization of people, problems, technologies, and resources in an innovation ecosystem. Once established, such an ecosystem, consisting of elements internal and external to the traditional defense industrial base, will provide a resilient source of competitively differentiated ideas as well as a means for discovering unexpected new applications of technology with the potential to impact Army equities positively.

Adam Jay Harrison

Mr. Adam Jay Harrison, the John R. Boyd National Security Innovation Fellow at New York University, recently served as the director of the MD5 National Security Technology Accelerator in the Office of the Secretary of Defense. He has founded and led multiple high-tech startups and continues to invest widely in hard-tech startups.

Bharat Rao

Dr. Bharat Rao, an associate professor in the Department of Technology Management and Innovation at the Tandon School of Engineering at New York University, researches technology diffusion, innovation dynamics in the defense ecosystem, fourth industrial revolution technologies, and organizational trends in global innovation. From 2016–18, he was a visiting faculty fellow at National Defense University.

Bala Mulloth

Dr. Bala Mulloth, an assistant professor of public policy at the Frank Batten School of Leadership and Public Policy at the University of Virginia, researches innovation within new ventures, sustainable business models, and social entrepreneurship. He was a visiting faculty fellow at National Defense University and holds a PhD in technology management from the New York University Tandon School of Engineering.

TECHNOLOGICAL CHANGE & WAR'S NATURE

Profession at the Crossroads

Lieutenant Colonel Donn A. Starry

The late General Donn A. Starry (1925–2011), former Commanding General of the US Army Training and Doctrine Command (1977–81), wrote this insightful essay in 1966 while he was attending the US Army War College. It offers an engaging look at how the US Army profession viewed itself in the late 1960s. It also reveals how officers, many as talented as Starry, viewed the “nature of war” in an era of tremendous technological and socio-cultural change. Note how Starry wrote of war as potentially shifting “from total, to limited, to back to total in a completely different sense.” Can the US Army of today manage such a shift as fluidly as it might be required to do?

As competing worlds seek to expand and promote their respective ideologies under the nuclear shadow, the very nature of war itself changes, and with this change come different notions about the purpose of military force, proper military strategy and tactics, and the correct goals for military action in the new international arena. On all sides, there is increasing concern with national security, with the involvement of civilians in military strategy, and the place of the military in political affairs. In reflecting this concern, political scientists reanalyze civil-military relations; social scientists examine the military profession; business managers and scientists propose new decision making and management disciplines for government and military organizations; and scientists and academicians propose new strategies for national defense.

So the defense of the United States, and the military profession itself, long relatively isolated from national affairs except in crisis, are today experiencing many of the effects of the changing world.

Changing Patterns of Leadership

The story of the American military profession in modern times has been described by Janowitz as a struggle between the heroic leader, embodying the tradition of the mounted warrior, and the military manager, concerned with the rational and scientific conduct of war. Since the turn of the century, and more especially since World War II, technological developments have been so comprehensive as to create an organizational revolution in the military profession.

As war and war machinery have become more complex, the heroic traditionalism of the military man has taken root in an organizational conservatism; a resistance to change based largely on the uncertainties of war, and the imponderables of planning for the employment of untried technological advances.

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The increased destructiveness of military weaponry, a contribution of technology, weakens traditional distinctions between the role of the military and that of the civilian. Not only do mass destruction weapons broaden the menace to the country and society by equalizing in a sense the risk between soldiers and civilians, but complex technical and logistics tasks also tend to increase the civilian character of the military establishment. Involvement of military personnel in highly technical research and development tasks completes the civilianizing trend of the non-heroic requirements for modern military leadership.

The ultimate requirement for combat, however, provides an outer limit to these civilianizing tendencies. Among the platoons, companies, and battalions of combat divisions, the persistence of the fighter spirit is an essential characteristic of life. So long as this is the case, the heroic leader image cannot be cast away. On the other hand, as today's professional officer moves from command to staff, from field to research program, he continually is torn between the traditional hero image of the warrior class, and the manager-technician demands of burgeoning science and technology in his profession.

Changing Patterns of Decisionmaking

The complex nature of today's military problems taxes the capabilities of traditional methods of military analysis and problem solving. Problems of which weapons systems to develop, how many of what weapons to buy, and where to deploy what forces involve so many complex considerations from cost to national policy, that new decisionmaking tools are required. In response to the need for new tools, the academic community has provided a set of systematic, and where possible, quantitative tools for the solution of complex military management problems.

Involvement of the academic community in the solution of military problems is one of the significant aspects of recent times. This involvement grew out of such events as the World War II participation of scientific groups in development of operational techniques for employment of radar in air defense.

Not only were new weapons developed and introduced by scientists and academicians; but the deployment and employment of the weapons also were subjected to new analysis techniques—matters long considered solely as problems for the military professional to solve. This work was known initially as operations analysis—later operations research. As time went on, operations research techniques were applied to many management and strategy problems of the military establishment. How many bombers should be purchased for the new bomber fleet? Which of two competing missile systems is the better? Should bombers or missiles be the main defense? Where should air defense interceptor units be stationed for best utilization? Such work, including not only operational matters but also costs, the effectiveness of competing systems, and many other factors, has come to be known as systems analysis.

As the purely military ingredient of an equation increases, and a tactical problem of combat is to be solved, systems analysis, as yet, has limited application. When such factors as terrain advantage, beach and sea conditions, state of morale, and the training status of troops must be weighed and a decision reached quickly, systems analysis, at present at any rate, is too cumbersome to be useful. On the other hand, caution must be exercised in propounding this viewpoint dogmatically. What is immeasurable today may be measurable tomorrow. As science learns more about conflict in war games, game theory studies, the science of cybernetics, and related activities, new paths will be opened for analytical treatment of military combat.

The Changing Nature of War

In spite of its violence and horror, war historically has been an essential institution of relations between states. In particular, the nation state system has relied on war as the final arbiter between states that have irreconcilable grievances. Presidents Polk and McKinley deliberately used war as an instrument of American policy, unpleasant but necessary. President Wilson, without really planning participation, became engulfed inextricably in World War I as a foreign policy response. By Franklin Roosevelt's time, war had been magnified to awesome totality; an instrument of defense in the extremity of a total struggle for national survival.

What then is war today? Is it a useful arbiter among nations? Or is it a destructive terror to which heads of state no longer will resort even in extremis? These are some of the questions raised by the presence of nuclear weapons in modern war.

Almost since the beginning of this century, the American military professional has regarded war with the same outlook as that of General Douglas MacArthur when he said:

The general definition which for many decades has been accepted was that war was the ultimate process of politics; that when all other political means failed, you then go to force; and when you do that, the balance of control, the balance of concept, the main interest involved, the minute you reach the killing stage, is the control of the military. . . . You have got to trust at that stage of the game when politics fails, and the military takes over, you must trust the military, or otherwise you will have the system that the Soviet once employed of the political commissar, who could run the military as well as the politics of the country.

Total war, resulting from a total failure of the political processes between states, traditionally has meant total involvement of the military in the conduct of the war, with the ultimate goal total victory. Again General MacArthur, this time speaking of victory, said:

Yours is the profession of arms, the will to win, the sure knowledge that in war there is no substitute for victory, that if you [the military professional] lose, the Nation will be destroyed. . . .

The author of these classical, traditionally military words was the first victim of the fact that war's nature had changed with the introduction of nuclear weapons. Political reluctance to precipitate national disaster in nuclear war, among other considerations, limited the geography, weapons, and operations, and changed the goals of the war in Korea, not once, but several times in the course of the conflict.

Total war had clear goals—total victory, destruction of the enemy, the appeal of a crusade; all under military control for military ends. Virtually all the forces which have motivated modern democracies in war have tended to sublimate political aims of the conflict to the military goals of destroying the enemy.

The war that General MacArthur fought in Korea on the other hand, had other aims, less total, without the appeal of a crusade, changing as the military situation developed. Furthermore, that war was terminated inconclusively. Out of the Korean experience, however, came the idea that war indeed could be limited, that it no longer had to be total in the traditional sense. With that realization, some deep-rooted prejudices were swept away.

Scarcely had the new character of war become apparent, when the nature of war began to change once again. Insurrectionary violence emerged as the dominant characteristic of conflict. Wars no longer were fought between states, but within states. Wars between governments became wars inside governments, inspired by insurrectionary movements, cliques, parties, and other groups seeking power. These wars were characterized by a breakdown of the controls of public administration, outlawism, banditry, terror and assassination, against which full scale military action was required to achieve control of a country.

This new kind of war in a sense is total, but in a completely different sense than before. The war in Indochina virtually was total to Indochina. The war in Algeria was total to that country—total in resources, population, and involvement of every facet of the community. Insurrectionary war, in many respects, is war for the minds of men, war for control of the organs of local government and administration; a war of public administration where votes are cast with rifles.

This changing nature of war tugs at the roots of military professionalism. When war still was thought to be total in the nuclear sense, dependence on long range bombers and missiles as the primary instruments of war upset the very basis of traditional military training, and brought into question the ultimate usefulness of military forces other than the nuclear delivery forces. Before World War II, the maneuvers of the destroyer squadron, the armored regiment, and the aircraft wing credibly could be translated into combat operations. Target practice, bombing, and fleet maneuvers developed skills whose mastery spelled victory or defeat in battle. In the total war of the nuclear exchange, however, an air of unreality and lack of convictions has surrounded the bomber alert force, and the missile silo crew. They know that their

weapons will never be used unless the entire political and military structure of the country has failed in its task.

Korea denied the validity of the great nuclear threat as a lever in conflicts between states where objectives, goals, and the scope of military action could be limited, without total destruction on both sides, and where truly vital national interests (survival) were not at stake. The role of conventional armed forces in modern war of this kind thus was confirmed.

In the late 1950s, however, a new concept was introduced. A policy decision was made that conventional forces would be equally capable of conventional and nuclear war and that they would be equipped with small yield nuclear weapons; thus the professional dilemma brought on by the nuclear weapon reappeared, Training and readiness for conventional war fully were within the ken of the military profession, but what tactics and techniques would be required by a nuclear war that was designed to be less than total in the traditional sense? How was such a war to be fought? If there was doubt that nuclear weapons of any kind would ever be used at all, was the requirement for dually capable forces debilitating conventional strength to achieve an unnecessary duality?

The changing nature of war, from total to limited, back to total in a completely different sense, all under the shadow of a nuclear threat that might never materialize, has brought considerable confusion to the professional viewpoint of what war is supposed to be about.

Changing Concepts of Victory

Total war, in the American tradition, was a military war for military ends. In the early years of the cold war, however, came a dawning realization by the American military profession of the inseparability of political aims from military action, General Omar N. Bradley reflected this changing awareness when he wrote:

The American Army has also acquired a political maturity it sorely lacked at the outbreak of World War II. At times during that war we forgot that wars are fought for the resolution of political conflicts, and in the ground campaign for Europe we sometimes overlooked political considerations of vast importance. Today, after several years of cold war, we are intensely aware that military effort cannot be separated from political objectives.

From a recognition that the nature of the ultimate end of war itself had changed, came changing concepts of victory. If war was no longer total, if its goal no longer was to be the annihilation of the enemy, what then was the meaning of victory? Out of the Korean experience came certain knowledge that winning a war no longer includes traditional patterns of clear-cut goals, defeat of the enemy, surrender, and final victory. The nuclear weapon was the prime contributor to this change.

The rise of insurrectionary war as the modern form of total war further confuses the issues of war's aims, and the ultimate meaning of victory. At the outset the existence of insurrection suggests political

failure, for if the organs of political control are effective, insurrection is unlikely to begin. Containment of insurrectionary war within the bounds of one country only serves to add to the confusion. How does the American military fight wars to restore political stability in someone else's country? If the ultimate goal of the American military is the defense of the American state, what are the goals of American military action in insurrectionary wars in other states?

Paradoxically, the American liberal society, long suspicious of standing armies and the use of military force, has been quick to call on the military establishment as an instrument of foreign policy to support a national strategy that is designed to contain communism. The acceptance of this mission has required the military establishment to become involved in special force structures, special schooling activities, and above all in operations aimed at achieving governmental stability in countries that have widely differing social, cultural, economic, and military value judgments.

The broader challenge is one to liberal society itself, as it struggles to define more clearly its traditionally ambiguous goals. The ambiguity in overall goals makes the military task even more difficult. The military professional, face to face with a real problem in the field, indeed is in a dilemma. Any kind of victory is difficult to achieve when the criteria for winning are ambiguous.

As the pattern of insurrectionary war has developed, it increasingly has become obvious that to be able to wage a war for stability in public administration the military requires new skills—skills that are commensurate with these new responsibilities. These skills must reflect the blending of the political-economic-social-military characteristic of insurrectionary action. The achievement of objectives in these areas is a task that liberal democracy heretofore has been reluctant to entrust to its military forces. Now, however, it demands that the military forces become involved, and that they win.

A similar development occurred in France. Ambiguity of national goals, and deep involvement of the military in the non-military demands of insurrectionary war, led to a deep schism between the French military and the French state during the Indochinese and Algerian campaigns. Ultimately, this ambiguity spelled the downfall of the French military profession, which lacking clear definition of what was to be won, pursued political, social, psychological, and cultural aims in the context of the totality of the new war. Eventually, so they felt, the French military came to see national goals and what was to be won more clearly than the vacillating French government. The military appealed to the nation over the government, and lost the appeal. While there were a great many dissimilarities between the French and American military professions, thus making it difficult to contemplate the occurrence of a like situation in American democracy, the French experience highlights the dangers of ambiguous goals and aims, especially in insurrectionary war.

Changing Patterns of Strategy and Tactics

When it became certain that nuclear weapons threatened national survival, the scientific and academic communities quickly became interested in strategy and tactics for nuclear weapons, and in national policy consideration surrounding their employment. Arthur Herzog, a writer on military subjects, quotes an estimate that over 100,000 pieces of literature have been written on the subject of strategy since the end of World War II. Some of these writings have had a significant influence on the conduct of national affairs. Indeed, a study by Raymond L. Wilson, Jr. concludes that a small group of civilian intellectuals significantly influenced virtually all national defense policy decisions of the Kennedy Administration.

As might be expected, strategies proposed in these writings reflect a wide divergence of absolute opinion from pacifism and disarmament to preemptive war. They also reflect increased difficulty in separating national strategy from military strategy, and demonstrate that many segments of society, other than military, have become involved in a field formerly considered to be exclusively military. While the military may view civilian intrusion with alarm, the civilian looks upon military involvement in national policymaking with equal suspicion. Nevertheless, in terms of its size, cost, and its interrelation with almost every aspect of public affairs, the American military establishment now is in an unprecedented peacetime situation. It inextricably is involved in contributing to policymaking for the nation.

Liberal society clearly recognizes the new position and influence of the military. Arthur Schlesinger, Jr., one of liberalism's most articulate spokesmen, expressed civilian reaction in this fashion:

We are very much aware of an increased military influence in our national life. . . . The novelty today lies not in having professional generals venture forth as free lances in political campaigns, but in having them as established authorities on policy, accepted in the highest national councils and held accountable in the most solemn national debates. . . . But in quantity and quality, the power and prestige of the generals constitute a new phenomenon. We have among us today, in short, a new political elite, whose future is likely to have a considerable effect on the future of the republic.

Size, capabilities, and deployment of the nation's military forces also have become day-by-day concerns of the diplomat; a fact that is causing the diplomat and the military to draw closer together. The political liberal, however, sees military participation in the shaping of national policy as inimical to the American political tradition. From this feeling flows a further question as to the competence of the military man in the broader aspects of political and military policy. What of the military's traditional, conservative, rigid "military mind"? Can it adapt to the less precise parameters of political-military decisionmaking? Again Schlesinger provides a clear expression of the civilian concern:

The quality of the military mind is hard to define. But it clearly has an extraordinary innocence. It approaches every question as if no one else had

ever tackled it before; it seeks to subdue every problem with military logic; it has no reserves of overtone or undertone. The answer to everything . . . is to estimate a situation and then take action. Everything is seen too clearly; and the complexities of history fall by the wayside. Above all, the military approach has trouble with the problem of ultimate goals; for life is something more than set problems in strategy. Under conditions of total war, the defense of the United States implies a whole series of value judgments on questions of economics, policy, and morality.

Aside from the concern of liberal society, Schlesinger's words highlight a concomitant problem for the military professional. Military science is a discipline in which skill is acquired by training and experience; its execution demands a decisiveness of action that is not required in any other discipline. The military professional usually is faced with a task that somehow has to be accomplished. To do it, he relies on a fairly reflex set of reasoned responses which, if not intellectually the best, quite often pragmatically are correct. There is no time to ponder abstractions at length in the fashion of the intellectual. Practical insistence on problem solution, to which Schlesinger refers, was born of necessity, not of intellectual poverty.

When he becomes involved in formulation of state policy, the military professional faces a whole new set of values which in a sense erode his conviction of the correctness of his military point of view. Huntington avers that "politics is beyond the scope of military competence, and the participation of military officers in politics undermines their professionalism." On the other hand, the real world about him has involved the military professional in just that sort of activity, and from it he cannot remain aloof. In the field, he is exposed to economic and social problems in a way best expressed by Deputy Assistant Secretary of Defense Edward L. Katzenbach, Jr., in these words:

The military [mind] today . . . has to be able to think in terms of training missions the world over, a more complicated problem than is faced by any other profession because he may be training at one time in South America, at another time in the Far East, and at still another in Africa or in Europe. He [the military professional] has got to know more than most economists in terms of international economics, and he must know village politics, and he must know the history of regions, theology of peoples, what motivates them, what they think about; he must know what they want to be so that he can help them. . . .

And in a broader view of the same problem President Kennedy charged the military profession in these terms:

You [military professionals] must know something about strategy and tactics and logic . . . economics and politics and diplomacy and history. You must know everything you can about military power, and you must also understand the limits of military power. You must understand that few of the important problems of our time have, in the final analysis, been solved by military power alone. . . . You must be more than servants of national policy, you must be prepared to play a constructive role in the development of national policy, a policy which protects our interests and our society and the peace of the world.

Thus, the civilian intrudes into a field once considered purely military, and the military professional is called in to sit in councils that are debating social, economic, and political issues. This innovation forces him to develop a new depth and breadth of perception about his profession, his traditions, and his nation. Finally, in his new role of economic, social, political, and military adviser at levels from the seat of government to the primitive village, the professional must seek new strategies, new tactics, and new doctrines to meet the conditions that he finds in each place.

The Road Ahead

Is the American military professional ethic that was developed in the late nineteenth century out of date for the last half of the twentieth?

Fundamental as it was, reflecting a long period of thought and introspection, the American pre-nuclear military ethic probably was as useful and valid in 1945 as it was in 1914 on the eve of World War I. From nuclear weapons to the management of defense, however, science and technology in recent years have generated conditions which challenge the traditional role of the military in American society.

On the other hand, whatever its shortcomings may have been, the traditional military code still meets two essential requirements: first, it provides the rationale and disciplines for successful combat with an enemy on the field of battle; second, its underlying sense of devotion to a cause provides the motivation for men to seek and remain with the profession in the absence of traditional total war, performing often odious and increasingly hazardous tasks often for only token reward. If we are to construct a new philosophy—an ethic for the future, it must continue to meet these two requirements.

The traditional essence of military competence is leadership of men in battle. In the past, leadership by and large has been uni-service. Its development has been based on the idea that clearly defined objectives will be specified by a superior command. Its action programs—doctrine and tactics—have been oriented to military goals. It has been the product of extensive military education and training, and it has been directed by an organizational structure designed to tie the whole together in meaningful combat.

The essential character of modern war, however, seems quite different. First, it tends to be more and more joint in organization, deployment, staff, and command. Second, it embodies more comprehensive and centralized direction from the top; limiting, shaping, and even directing action in the field. Third, it embraces new leadership patterns, requiring greater technical-managerial competence on the one hand, yet demanding retention of traditional values on the other. Fourth, it increasingly is affected by decisionmaking and analysis techniques that question the utility of traditional staff processes, even of the staff system itself. Finally, it requires a new breadth and depth of

understanding and ability in a far broader group of skills—economic, social, political, military, from the Pentagon to the hamlet.

To achieve these skills, the military education system again must be summoned to broaden the base of joint knowledge and to expand the academic programs of the service and joint schools. The education system also must be looked to for interagency orientation. It must broaden the corporate sense of the military to include identification with other agencies that are seeking common goals in their implementation of the nation's policies. Education must provide a clearer understanding of management and leadership techniques in industry, in science, in business, and in battle. Finally, both education and organization must set to work to provide the strategy, the tactics, and the doctrine by means of which the military profession successfully can seek the nation's changing goals. If there are suitable substitutes for winning in modern war, these must be identified early, and communicated clearly to those who face the crucial task of deciding what the job is, how to go about it, and when the job is to be done.

Essentiality of the Military

The United States military profession is a product of the liberal society that it serves. Coming from the liberal social system of the democracy, changing in attitude as social attitudes in society change, the military professional reflects his background in the nation's education systems, as well as his professional military education and training.

The military professional often sees himself in the Hamiltonian heritage of nationalism; he has a strong sense of duty, bravery, and purposeful action for his nation. Traditionally, he regrets that these cherished values seem to have become obscured, and longs for their return. But he cannot restore them, he cannot revive them, he cannot win society to their call. For if he does, he has grown out of his role of service to the state, and may cease to exist.

Nonetheless, the professional military man, and even his traditional attitudes, are a necessary ingredient in American society. His is the voice of caution in the winds of idealistic international argument; the reminder that although domestically creative, the liberal tradition has a poor record in foreign policy and national security matters. His is the voice reminding the nation that wars are fought by people for the control of people; that men afoot, men on and in the sea, men aloft are the essential strength of the nation's security. Above all, in this time of crisis, he must strive to understand to be understood. Again and again he must reconsider what it is that makes him and his profession distinctly military; what he has that others have not. For only by so doing can he come to a deeper appreciation of the unique contribution that he and his profession can make to America, and ultimately to all mankind.

Book Reviews

DATA WARS

Small Wars, Big Data: The Information Revolution in Modern Conflict

By Eli Berman, Joseph H. Felter, and Jacob N. Shapiro with Vestal McIntyre

Reviewed by Dr. Emile Simpson, research fellow, Harvard, Belfer Center for Science and International Affairs

The authors of *Small Wars, Big Data* combine a social science approach to the study of asymmetric conflict with the use of large bodies of empirical data—big data—to provide a series of practical operational-level recommendations for would-be counterinsurgents.

On the back cover, Anne-Marie Slaughter tells us this approach “heralds a revolution in conflict studies, one that finally brings development, defense, and diplomacy together at the operational level.” Unless one takes the term revolution in its literal rather than colloquial sense, this assertion is ahistorical, oblivious to the fact that a data-driven social science approach to conflict, which evaluated not only military but civilian activity in a series of metrics, was used extensively by Robert S. McNamara’s Pentagon during the Vietnam War.

While the authors acknowledge Vietnam was an “obvious failure, one that has often been used to discredit the idea of quantitative metrics for conflict,” their argument is that this approach has value in asymmetric wars today (324). Do they succeed in making this case? To my mind, on their own terms, they do; but it is important to understand what those terms are.

Their argument runs like this. In symmetrical war, the struggle is primarily over territory, whereas in asymmetric war, the struggle is over people. Insofar as these conflicts are fundamentally about governing territory, not just holding it, asymmetric conflicts are information-centric insofar as the goal of the government and the rebel party is to gain the support of the civilian population, which in turn requires information from and about the civilian population.

From this premise, the book runs through a series of aspects of counterinsurgency operations, which are analyzed from a social science point of view, by testing propositions against large data sets. The key findings are

- making it safer for civilians to share information—for example by extending cell phone coverage—leads to less violence;
- projects to gain the support of the civilian population should be modest in size, secure, and conditional on behavioral change from both the population and government;
- security and small-scale aid projects complement one another in terms of reducing violence, in conjunction with efforts to reduce civilian casualties; and



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- increasing economic activity in such warzones can just as well stoke predatory violence as alleviate deprivation by increasing incomes.

A reader may retort that some of these findings are intuitive, which negates the need to prove them scientifically. But that attitude would miss the point that if some of these findings are common sense (for example, if you cause civilian casualties, you create new insurgents), they took a long time to become common practice. In both Afghanistan and Iraq, had such lessons been heeded from the outset, large insurgencies might have been avoided. In this respect, the authors have performed a valuable service in providing masses of objective, empirical data that supports the validity of some of the doctrinal innovations in recent US counterinsurgency doctrine.

Of course, one must equally note the authors' arguments are limited to their own terms, which is essentially operational-level counterinsurgency doctrine. That is to say, the authors frequently emphasize their project is to identify "what works," which naturally discounts the particularities of individual conflicts and may vary substantially at the strategic and policy level. Thus, one may successfully reduce violence, as the 2007–08 surge did in Iraq, but nonetheless leave the country at the mercy of Shia militia, and increase the power of Iran in Iraq. Does this mean that counterinsurgency in Iraq worked? It's a question of perspective.

Ultimately, the need to account for the fact that there is a hierarchy of perspectives through which to analyze asymmetric conflict addresses the points of difference in the well-known and well-trodden debate over counterinsurgency doctrine in the past decade. The critics of counterinsurgency doctrine claim it does not solve the problem, and that may well be true at the strategic level. Conversely, any situation in which counterinsurgency doctrine is needed in the first place is likely to be one in which there has been a very fundamental political breakdown in the society in question, which has produced the insurgency. In this context, counterinsurgency is best understood as a combat dressing to stop catastrophic bleeding, not a form of plastic surgery that, through "nation building," produces a new society in the West's image.

This seems to me to be where the authors are coming from. They all have extensive experience in the field as practitioners, are offering hard-earned lessons to other practitioners who face insurgencies, and are likely fully aware that counterinsurgency as an operational approach may deal only with some branches of the problem of an insurgency. For the roots of all insurgencies are political, and countering them requires a political strategy into which operational doctrine can fit.

Without such a political strategy, you have Vietnam: the focus on operational success without a theory of victory.

LIKE WAR

**Hybrid Conflicts and Information Warfare:
New Labels, Old Politics**

Edited by Ofer Fridman, Vitaly Kabernik, and James C. Pearce

Reviewed by Dr. Alma Keshavarz, associate, Small Wars Journal—El Centro

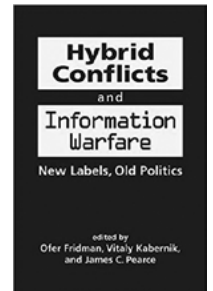
This book is a compilation of essays written by Western and Russian scholars on the nature of hybrid war and information warfare. The dynamic makes for an interesting read as the authors provide analysis through the prism of either a Western or a Russian scholar. The book is strategically organized into three sections with two chapters by Western authors, two by Russian authors, and a chapter by James C. Pearce.

The chapters focus on the changing nature of warfare, particularly information warfare and hybrid war. Russia and the Islamic State are used essentially as case studies to demonstrate the importance of hybridity and information warfare in today's conflicts. A number of authors in the book, beginning with David Betz, build from Frank Hoffman's definition of hybrid war as a mixture of conventional, irregular, terrorism, and criminality. Therefore, hybridity is the convergence of various modes of warfare.

For Russian scholar Georgy Filimonov, hybrid warfare “describes a situation where an external controlling power brings the protest-potential masses . . . and different types of destructive opposition forces . . . to the forefront of the fight against adversary political regimes” (25). He applies his theory to academic, professional, and military perceptions of the Color revolutions, and argues Russia perceives hybrid warfare differently. Western nations view hybrid warfare as part of “intelligence” in warfighting that incorporates irregular tactics, special operations forces, cyber, political, and economic spheres as well as popular protests (28). For Filimonov, hybrid warfare “blurs the line between war and peace by intentionally destabilizing not only individual states, but also entire regions, without a clear declaration of war” (32).

Another Russian scholar, Vitaly Kabernik, distinguishes between war and warfare by Russian military thinking and uses three cases to show the stages of hybridity, and the lessons learned by the Russian military: the partisan movement during the Great Patriotic War, the Soviet engagement in Afghanistan, and the Chechen conflicts.

The second part of the book addresses the role of social media in information warfare and hybrid war. The authors analyze how new technologies allow groups to take advantage of large-scale information dissemination. Matthew Armstrong resurrects the idea of the US Information Agency. He explains the organization was a “tool of information warfare while the Russians waged political warfare across nonmilitary fronts” that can be valuable today (114). Russian scholar Radomir Bolgov examines legal and doctrinal framework of information warfare policy and various other Russian-state policies.



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The final part of the book strictly discusses information warfare by the Islamic State. Charlie Winter opens the section with an analysis of official Islamic State propaganda published between October 16, 2016, and January 24, 2017. He specifically examines the opening and the completion of the campaign to recapture east Mosul. The brief address of various social network outlets used by the Islamic State also offers details into the types of propaganda that was spread across international borders.

The Islamic State's military capability and tactics are also addressed throughout this final section to establish how the group utilized information warfare to conduct hybrid war and to pursue individuals in the North Caucasus. By 2015, the group declared the area a province and conducted four terrorist attacks in Dagestan by early 2016.

The Islamic State's media enterprise is important to this section, and to the whole book, as the authors develop a case study showing the growing importance of the information space. Interestingly, Russian language ranks third, behind Arabic and English, in Islamic State propaganda efforts. Craig Whiteside includes the history of the Islamic State from the forming of Abu Musab al-Zarqawi's group, to the aftermath of his death, and the Caliphate's expansion between 2011 and 2014. Whiteside discusses major media organizations, such as the Amaq News Agency, al-Naba, and the Al-Hayat Media Center, and provides valuable data on the group's media output.

The book concludes as James C. Pearce revisits the preceding chapters and provides further analysis on the significance of hybrid wars. Ultimately, the definitions of hybridity are "multidimensional and integrate many different aspects of fighting into a single domain" that perpetuate confusion and inhibit states from combating this form of warfare (250). As Pearce notes, "Labels matter, but the contents of conflicts and warfare have been overlooked as a result" (254). Overall, this book is a great read for those interested in information warfare. But as the concept of hybrid warfare continues to emerge across military, academic, and professional settings in the West and Russia, this book importantly distinguishes the various perspectives.



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\$28.00

Messing with the Enemy: Surviving in a Social Media World of Hackers, Terrorists, Russians, and Fake News

By Clint Watts

Reviewed by Dr. Robert J. Bunker, adjunct research professor, Strategic Studies Institute, US Army War College

Messing with the Enemy details the growing power of social media as an informational medium that can be manipulated by both state and nonstate groups for illicit purposes, as a form of conflict, and even in order to engage in indirect warfare. This book should be considered more of a practitioner work than an academic or theoretically focused one. The author, Clint Watts, has an applied background as a former Army officer, an FBI special agent, and an independent consultant—with later affiliations including the Combating Terrorism Center at West Point

as well as the FBI's Counterterrorism Division and National Security Branch. He is presently associated with the Foreign Policy Research Institute and George Washington University.

The work is greatly influenced by his operational experience and contrary nature—one marked by a red-teamer's creativity, an inability at times to play nice institutionally, and a disdain for bureaucratic protocols as it relates to threat group social media manipulation, resulting in a kind of mind-hacking (that is, twenty-first century social media based psychological operations) (16). As a result, the book benefits from the discussions and injects related to his unique career experiences. Nevertheless, a tension exists between the insights gained from his real-world counterviolent extremism and counter-Russian propaganda activities and his personal (and family) experiences, that seem out of place at times (243–46).

The work is divided into ten chapters. No index, acronyms, or terms section are provided. The first seven chapters focus on examples and case studies related to the book's topical focus. Chapter one provides vignettes of the author's social media capers as an al-Shabaab operative and West Pointer cadet, chapters two and three focus on Islamic State and al-Shabaab social media use, and chapter four looks at the troll phenomenon, with an emphasis on the rise of Russian trolls. Chapter five provides short accounts of WikiLeaks, the Harmony database (a counterterrorism informational depository program), and cartel tracking blogs in Mexico as they relate to information leakages, fusion, and informal online news sources.

The sixth and seventh chapters look at Russian meddling in the 2016 US presidential elections and then provide an after-action analysis of this incident which portrays how social media has become more important as a new source for the American public than mainstream media respectively (155).

The eighth chapter looks at the America's lackluster counternarrative and counterinfluence attempts and how our twentieth century bureaucratic approach is ill-suited to the more networked challenges facing us with a few exceptions such as West Point's Combating Terrorism Center's *Militant Ideology Atlas*. The ninth chapter is the most important—providing a theoretical framework building upon constructs related to long-tailed, preference bubbles, social inception, and other socio-psychological and business elements—but comes late in the text.

The tenth chapter provides some general guidance concerning how democracies, corporations, and citizens can survive in a world dominated by social media's dark underside of fake news, troll farms, botnets, and propaganda campaigns (both foreign and domestic in origin). Components of the work that stand out are its recognition that social media

- allows our citizens—spurred on by Russian active measures—to align themselves within virtual and physical “preference bubbles” to create deep divisions in our society;

- empowers authoritarian states, corporations, and aspiring despots to social engineer populaces into believing their hidden policies are in actuality their own preferences; and
- turns machine learning/artificial intelligence into the nuclear weapons of information (such as social media) warfare (214, 230–31, 232–33).

In summation, *Messing with the Enemy* gets high marks for its readability, its insider perspective on the nefarious side of social media, and for helping us to better understand our opponents' use of it against us but lower ones for its strategic treatment of this subject matter. The author's discussion of both his own and others use of tradecraft—such as rationalize, projection, minimize and ideological subversion—is also fascinating (67, 227). The book is also well priced. It would benefit, however, from both the inclusion of an index and a combined glossary and acronym listing. At the War College and National Defense University level, this work would not be considered appropriate as a primary course text given its more operational and at times subjective approach, but it should be used as a support to one such as *LikeWar* (Singer and Brooking, 2018) or an equivalent work. I could, however, readily see its use at the Command and Staff College and Academy level and for individual professional military reading.



Boston: Houghton Mifflin
Harcourt, 2018
416 pages
\$28.00

Like War: The Weaponization of Social Media

By P. W. Singer and Emerson T. Brooking

Reviewed by Dr. Robert J. Bunker, adjunct research professor, Strategic Studies Institute, US Army War College

Like War—written by P. W. Singer, a senior fellow at the New America foundation and author of *Wired for War* (2009) and *Ghost Fleet* (2015), and Emerson T. Brooking, an expert on conflict and social media—is an intellectual tour de force focusing, as its subtitle states, on the weaponization of social media. The book, which addresses the blurring of war, technology, and politics, advocates the perspective that conflict in the real world and the virtual world are increasingly overlapping and influencing one another. In essence, “Just as the internet has reshaped war, war is now radically reshaping the internet” (19). A basic thesis of the work is grounded in David Ronfeldt and John Arquilla’s early work *Networks and Netwars* (RAND Corporation, 2001, 182–83):

These new wars are not won by missiles and bombs, but by those able to shape the story lines that frame our understanding, to provoke the responses that impel us to action, to connect with us to at the most personal level, to build a sense of fellowship, and to organize to do it all on a global scale, again and again (Singer and Brooking, 21).

This work builds upon these core principles:

- First, the internet has left adolescence.
- Second, the internet has become a battlefield.
- Third, this battlefield changes how conflicts are fought.

- Fourth, this battle changes what “war” means.
- Fifth, and finally, we’re all part of this war. (21–22)

The book is divided into nine chapters. The thematic foci are (1) introductory remarks concerning *Like War*; (2) internet context as a disruptive technology; (3) social media and information proliferation as a double-edged sword (truth transparency and fake truths); (4) authoritarian regime use of censorship and disinformation, (5) fake truths and the botnets to spread them; (6) *Like War* combatants (ISIS and Hollywood entrepreneurs) and attributes (emotion, authenticity, community, and digital flooding); (7) *Like War* components and description; (8) digital freedom, censorship, social media companies, neural networks, and artificial intelligence (AI); and (9) a conclusion with *Like War* rules and liberal democratic response suggestions. The work’s notes are extensive (107 pages), though sentence fragment linked rather than numeric based, and the index (20 pages) is well developed.

Some of the book’s components include short discussions about the #Pizzagate conspiracy meme in which enslaved children were said to be held in a sex dungeon under a pizza restaurant tied to a presidential campaign, the infamous Pepe the Frog meme used in a political campaign and by racists, and the initial concept of “digital serfs”—that is, early AOL dial-up modem volunteers who received cut-rate or even no-charge internet access for providing the company free labor.

Given the importance of the *Like War* construct, the rules isolated by the authors are listed below:

- First, for all the sense of flux, the modern information environment is becoming stable.
- Second, the internet is a battlefield.
- Third, this battlefield changes how we must think about information itself.
- Fourth, war and politics have never been so intertwined.
- Fifth, we’re all part of the battle. (261–62)

Likewise, the more important points that need to be addressed are as follows:

- For governments, the first and most important step is to take this new battleground seriously.
- Today, a significant part of American political culture is willfully denying the new threats to its cohesion. In some cases, it’s colluding with them.
- Accordingly, information literacy is no longer merely an education issue but a national security imperative. When someone engages in the spread of lies, hate, and other societal poisons, they should be stigmatized accordingly.
- Those who deliberately facilitate enemy efforts, whether it be providing a megaphone for terrorist groups or consciously spreading disinformation, especially that from foreign government offensives, have to be seen for what they are. (261–66)

From a social media analytical perspective, the work focuses primarily on Facebook, Twitter, and YouTube. Myspace is rightfully treated in its legacy capacity with Instagram, Reddit, WeChat (Chinese), and WhatsApp also getting varying levels of coverage. The media outlet Breitbart is also addressed quite well in the work along with the activities of the innovative open-source intelligence using the Bellingcat investigative team. Even more importantly, however, the social media brilliance of the Trump presidential campaign is described—with its Steve Bannon and Cambridge Analytica link—reportedly allowing it big data mining on 220 million Americans for precision vote targeting purposes.

Two items the book could benefit from would be a detailed glossary of social media specific terms—such as “sockpuppets” (fake online identities) and “astroturfing” (creating the appearance of grassroots support)—and more material on the actual and projected impact of AI and deep learning systems on social media manipulation (111, 142). While the book has done an excellent job presenting the recent history related to the weaponization of social media and the contemporary environment, more analysis of neural network-trained chatbots and other machine-driven communication tools (MADCOMs) would have been most valuable—especially if such a deeper treatment might have yielded additional governmental policy suggestions to combat authoritarian and radical Islamist uses of *Like War* directed against the West.

Still, even with these slight demerits, I highly recommend this book as a must-read for American strategic thinkers interested in this topical area. The work is fair, balanced, well-researched, and well-written, and helps to illuminate a new facet of twenty-first century warfare. This new facet is one that, as foreign interference in the 2016 US presidential election and subsequent disinformation campaigns directed at our NATO allies attest, is only expected to become increasingly more common. From this reviewer’s assessment, *Like War* is a more mature expression of *Netwar* as, decades later, many more data points support the contention that the internet will be, or now has been, weaponized.

CONTEMPORARY CONFLICTS

Why Terrorists Quit: The Disengagement of Indonesian Jihadists

By Julie Chernov Hwang

Reviewed by Dr. Audrey Kurth Cronin, School of International Service,
American University

Julie Chernov Hwang's monograph seeks to understand why some Indonesian jihadists have stopped engaging in violence, and to tease out broader lessons that apply to terrorist disengagement in other contexts. It is based on extensive field studies, including more than 100 interviews with 55 jihadists who were members of seven groups operating in eight cities. Concise, well-written, and the outcome of years of on-the-ground research, this is not your typical dry, theoretical academic tome. It has sharp thinking, frank expression, and excellent editing. The author has done the hard work, and the reader benefits.

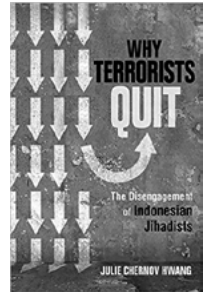
Chernov Hwang identifies four factors important to the disengagement process. I would summarize them as group dynamics, context, social ties, and personal development—not a particularly new theoretical framework. But what is fresh, rich, and invaluable is the evidence, colorful interviews, and wealth of details to explain and support each factor. I know of no other book on Indonesian disengagement that offers such robust research.

After a literature review, the first section fleshes out the reasons some Indonesian jihadists have turned away. The first is disillusionment with the group's tactics and leaders. Chernov Hwang describes individual jihadists repulsed by the targeting of civilians, for example, or gradually finding their leaders misguided, weak, or astrategic.

The second is a perceived change in the threat, or in the likelihood of achieving a group's aims—for example, one man responded to a reduction in incidents of Christian militias attacking Muslims. The threat had dissipated, so his services were less needed. Another left because the popular backlash made bombings counterproductive. Chernov Hwang's evidence seems to indicate, in Indonesia at least, good local governance can change jihadists' perspectives and behaviors. Jihadists' unwavering commitment to ideology is nowhere to be found in this book.

Building non-jihadist human connections is the third factor. The most important tie the author finds is new friendships, including with former antagonists (57). She relates a poignant story of an imprisoned jihadist who befriended Daniel, the only Christian in the prison, began to realize he was not evil, and turned away from his group leaders' teachings.

Lastly, Chernov Hwang finds former Indonesian jihadists often seek a more normal life, wanting to marry, get a job, and start a family. As soldiers do, jihadists bond with one another. Sometimes that brotherhood is what keeps them fighting. The author finds a key element in successful disengagement is building even stronger bonds with friends, business associates, and family, to displace former comrades.



Cornell University Press,
2018

230 pages

\$39.95

It is refreshing to read a terrorism book describing an optimistic pathway out of violence. The meat of it—the middle four of the eight chapters—traces individual stories of specific operatives. Here many interesting tidbits are offered. A jihadist named Anas, for example, shared: “I became addicted to it. We have to be aware that jihad is addictive. Some people say that violence is like opium” (82). Case studies of “B.R.” (who served time for killing a prosecutor, was released, and rejoined his old guitar band), Ali Imron (who is still in prison), and Ali Fauzi (who was influenced by a workshop bringing terrorists and their victims together) follow next.

Illustrating that some jihadists are irreconcilable, the final story is about “Yuda,” who is still committed to violence. Twenty-two members of Yuda’s family were killed in the Walisongo school massacre of 2000, where Christian militia members slaughtered at least 165 Muslim civilians. Between 2004 and 2006, Yuda bombed churches, mutilated schoolgirls, and personally executed a priest. The police killed his brothers, and unlike the others, Yuda’s family did not pressure him to quit. After his capture, Yuda said the police had tortured him. Yuda is driven by his desire for vengeance, particularly against the Indonesian police and security forces.

The book concludes with an analysis of the actions of the Indonesian government, civil society groups, and already disengaged individuals, and this is where the pay dirt for policymakers is. Chernov Hwang points to a lack of funding and data collection on the part of government programs, which have had limited success as a result. She contends the highly publicized activities of Densus 88 (the Indonesian police counterterrorism team founded in 2003), initiated in the aftermath of the 2002 Bali bombing, were better at gathering intelligence than reintegrating jihadists into society (145). Local government efforts to provide job training and funds for business start-ups were too small-scale, she argues. In July 2010, the government established the Indonesian National Counter-Terrorism Bureau; but again, the author argues, disengagement and aftercare were underfunded.

Chernov Hwang is more complimentary of the efforts of disengaged jihadists to help fellow jihadists leave and the work by private groups, such as Search for Common Ground and the Institute for International Peace Building, that supports a small number of former jihadists but follows them very closely over many years. Elements of success for all of the civil society programs, the author argues, include in-depth research on the participants, long-term trust building, individual needs assessments, a focus on professional development, and hands-on learning instead of top-down lecturing. Above all, she advises staying away from “ideological hot-button topics,” which is exactly what the Saudi deradicalization program emphasizes.

No book is perfect, and this one could have dug deeper in its analysis. An assessment of the level of resources required for these recommendations would have added heft. Robust aftercare is a wonderful idea but expensive and labor-intensive. It seems unfair to speculate about what a great government program would look like based on small, highly tailored civil society initiatives that might be hard to scale up. I do not know: I wonder what Chernov Hwang thinks. I would have welcomed a recognition that state resources are constrained, plus

an awareness of the broad choices and trade-offs government officials, unlike nongovernmental organizations, must always make.

This book makes an excellent contribution to the study of counterterrorism by providing an in-depth case study of how Indonesian terrorists give up violence. Senior members of the defense community will find it well worth their time.

Our Latest, Longest War: Losing Hearts and Minds in Afghanistan

Edited by Aaron B. O'Connell

Reviewed by COL James W. Bogart, board member, Army Review Boards Agency

This cautionary tale illuminates the contributing factors of both disregarding culture and eschewing the idea of nation building that have led to failure during 13 years of combat operations in Afghanistan. As the US defense strategy prepares to shift from cultural engagements to preparations for large-scale combat against competitors such as Russia and China, lessons from Afghanistan necessitate consideration for cultural planning before, during, and after large-scale combat. Aaron B. O'Connell's anthology, *Our Latest, Longest War: Losing Hearts and Minds in Afghanistan*, presents a reference for leaders at all levels to consider for current and future operations through the use of nine case studies that seize upon different aspects of the Afghan War, and the history of warfare in Afghanistan in general.

Chapter one focuses on the political arenas in both the United States and Afghanistan. Ronald E. Neumann provides his experience as the ambassador to Afghanistan from 2005–7, an infantry officer in Vietnam, and as a career foreign service officer the political dysfunction of Washington that impacted outcomes in Afghanistan. Colin Jackson, associate professor of strategy and policy at the US Naval War College and a Reserve lieutenant colonel with deployment experience as executive officer to International Security Assistance Force (ISAF) deputy chief of staff of operations in 2011 supports the overarching thesis in chapter two. Jackson utilizes a five-act structure in explaining the highs and lows of the Afghan War history from 2001 to 2014 and the cessation of combat operations.

In chapter three, Martin Loicana, chief of the historical office at Supreme Headquarters Allied Powers Europe, and Craig C. Felker, a retired US Navy captain and former chair of the US Naval Academy's history department, focus on the reasons for failures in training the Afghan National Security Forces throughout Operation Enduring Freedom in Afghanistan. Continuing with failures of training Afghan forces in chapter four, former Captain Pashtoon Atif of Afghanistan National Police in Kandahar, Afghanistan discusses the history of training Afghan police and cultural misunderstanding of policing by Afghans and international policing organizations.

Authors for chapter five and six, provide insight into reconstruction and development and rule of law and governance in Afghanistan.



Chicago: University of Chicago Press, 2017

400 pages

\$30.00

Lieutenant Commander Jamie Lynn De Coster, PhD candidate at Tufts University, explains the failures of reconstruction and development due to internal competition between organizations responsible for supporting the Afghan government in chapter five. In chapter six, two army officers with PhDs in international affairs and relations, argue that there were three persistent problems that impacted rule of law and governance. Colonel Abigail T. Linnington, who served as advisor to the commander of the Rule of Law Field Force in Afghanistan, Combined Joint Interagency Task Force 435, and Lieutenant Colonel Rebecca D. Patterson, who served as strategic advisor to the ISAF commander from 2011 to 2012, offer their deployed and academic experience regarding rule of law and governance.

Marine Corps Captain Aaron MacLean, managing editor for the *Washington Free Beacon*, argues “certain characteristics of liberalism bear a critical share of the blame for the most recent disaster in Afghanistan” in chapter seven (213). Chapter eight’s author, Lieutenant Commander Daniel R. Green, offers a success story with Special Operations Forces building security at the local village level. Benjamin F. Jones, a retired lieutenant colonel and dean of the College of Arts and Science at Dakota State University, focuses on the transition of security responsibilities from ISAF to the Afghan government and the Afghan security forces in chapter nine. Jones’s experience as a member of the Strategic Transition and Assessment Group from 2011 to 2012 enables the reader to follow the difficulties in the transition process.

This book illustrates the need for senior members of the defense community to internalize the multiple lessons about cultural biases and misunderstanding that guide how they think and act, versus those of allies. Acknowledging the US military will engage in future operations as part of a coalition, leaders must know with whom they are working (at all levels of operations) by asking how allies think and conduct themselves. This is a lesson in cultural understanding captured at the small unit level that requires permeating through multiple levels of command, both military and civilian. O’Connell and the other authors provide lessons from Afghanistan that argue for continued cultural understanding in order to avoid cultural failures now and in the future.

CIVIL-MILITARY RELATIONS

Four Guardians: A Principled Agent View of American Civil-Military Relations

By Jeffrey W. Donnithorne

Reviewed by Dr. Lionel Beehner, research director, US Military Academy's Modern War Institute

The study of civil-military relations can have a hamster wheel-like quality to it. Everyone dusts off their dog-eared copies of Huntington whenever a civil-military crisis occurs. America does not suffer coups, so all is hunky-dory, goes one interpretation. Yet, civil-military crises, like trolley cars, appear with enough regularity to make scholars take notice.

Civil-military relations can be motivated by a gap between those who serve and those who do not, by interagency turf wars, or by maintaining the military as a professional and apolitical institution.

Regardless, there is sometimes a feeling that the debate has barely budged since 1957, when Huntington introduced his normative theory of how military professionalism ought to work. Discussion followed in the decades to come, as Morris Janowitz countered that military professionalism was inadequate; soldiers going back as far as the Revolutionary War era were integral to the fabric of society and should not be garrisoned from the masses. Peter Feaver, one of Huntington's pupils, also challenged his mentor by noting that neither military isolation nor civilian objective control guarantees sound strategy or professionalism given civil-military relations, at its heart, is a principal-agent conundrum motivated by rationalist material interests. What is required of principals (civilians), economists tell us, is greater monitoring of the agent (military), a narrower gap in preferences, rewards for compliance, or punishment for shirking.

Nevertheless, this interpretation is also found wanting, writes Jeffrey W. Donnithorne. In his new book, he challenges both Feaver and Huntington. Regarding the former, he suggests the decision by agents to comply or shirk is not a simple binary. This theory appears to assume that the military only executes, and not advises—although this insight is not especially original, as Feaver and Dubik point out. Yet, often military leaders are involved heavily in the advising stages of a policy decision, a recipe for both friction within the armed services and between the military and its civilian overseers. In this way, military leaders are motivated by a shadow of the future and seek to lock in favorable policies advantageous to their service.

This introduces new insights: if a policy is seen as lax or unenforceable, opposition may be tepid. Or sometimes policies proposed by the principal lack coherence, make implementation by the agent, even with the best intentions, unfeasible. The question for military leaders is not whether to comply, but how. This goes in spades in an environment teeming with ambiguity. An observable implication of this theory is that, in an operating environment against Nazis or Soviets, we should

Baltimore, Maryland,
John Hopkins University
Press, 2019

288 pages

\$49.95

expect less civil-military friction. Yet in one teeming with peripheral or peacekeeping operations, where the military is outsourced as a constabulary force to defend against caravans of migrants, American Indians, or Mexican banditos, we might expect civil-military relations to be more contentious—this is not a new theory. But a variant of one proposed by Michael Desch.

Third, and here is Donnithorne’s major contribution: there is a yawning gap within the services when it comes to institutional biases, norms, and desired ends, which affect compliance. The drum of each service beats to its own idiosyncratic rhythm, and syncopating their parochial interests can be daunting under the best of circumstances. Political science, in its efforts to be ever parsimonious, does scholarship a disservice by neatly assuming the military as a monolith, when in fact there are “four guardians” with vastly different perspectives, cultures, and institutional biases.

Donnithorne’s book is a methodological tour de force. To test his hypotheses, he divides his model between stages on the X-axis (advising versus executing) and policy coherence on the Y-axis (high versus low) and draws on two cases: the execution of *Presidential Directive 18* to create the Rapid Deployment Joint Task Force (1977–83) and the passage of the Goldwater-Nichols Act of 1986.

The book, however, is not without flaws both of commission and of omission. First, at the heart this theory is that culture matters and each of the four guardians has ingrained culture through which it filters its civil-military relations decisions. Yet, this definition of culture feels incomplete. The author assumes culture is fixed, yet culture is likely endogenous to civil-military relations crises or other key events—such as war. One wishes he had engaged with more of the literature on military culture by Theo Farrell and Elizabeth Kier, among others. The Pentagon may never look like Google, but we should not assume its culture is immutable.

Second, largely absent from his analysis is politics and partisanship. Donnithorne’s first case, the creation of what would become Central Command, was spearheaded by young staffers in Carter’s National Security Council unversed in military science, which may explain why its early phase was incoherent and the process dragged on for six years. Yet one cannot divorce this from politics. Democratic administrations are often perceived to be less interested in the deployment of decisive conventional force and appear to prefer to intervene for more ambiguous ends, whether for peacekeeping (Somalia), humanitarianism (Bosnia), or preventing a migration crisis (Haiti). Republicans, by contrast, are motivated more by hard power and realpolitik, which lend to a black-and-white worldview and more decisive action. The military top brass generally prefers the latter viewpoint.

Methodologically, I wish Donnithorne had selected cases that might vary the structure of the international system. One imagines the international system’s distribution of power influences the coherence of policy. Maybe under conditions of, say, multipolarity, civil-military relations is just really challenging because any policy will be seen as lacking specificity or too challenging to execute or enforce. Both of Donnithorne’s cases come at the waning years of the Cold War, so

maybe his theory only holds explanatory purchase under conditions of bipolarity? Also, if his theory applies to wartime conditions, another case, perhaps Feaver's treatment of the "surge" might be included.

What about alternative hypotheses? Maybe poor civil-military relations has nothing to do with service culture at all. But rather the unique attributes and oddities of the civilian and military leadership at that moment, a point he only mentions in passing on page 213?

Finally, I struggled with the book's title. Beyond the cheeky double entendre and nod to Feaver, it felt like Donnithorne was essentially implying that the services are principled, when in fact we know they are like any other rent-seeking outfit in Washington—motivated by turf, profits, and preserving their autonomy. How is that principled?

These are minor quibbles. Donnithorne's chapters on the four services should be required reading for any young cadet or midshipman, as they nicely encapsulate their quirks. Is it not strange, Donnithorne wonders, why West Point's grounds are speckled with statuary to its greatest generals—though Sylvanus Thayer, the "Father of the Military Academy," was a colonel, not a general—whereas the US Air Force Academy is littered with aircraft.

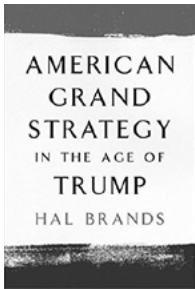
Donnithorne's book is a welcome addition to the crowded field of civil-military relations. With more contributions like his, we may yet get off the civil-military relations hamster wheel.

GRAND STRATEGY

American Grand Strategy in the Age of Trump

By Hal Brands

Reviewed by Dr. J. Thomas Moriarty a professorial lecturer within the School of International Service at American University



Washington, DC: Brookings Institution Press, 2018

256 pages

\$25.99

The demand for change, real, substantive change, is not in itself an uncommon and or even unreasonable desire—especially when it comes to American grand strategy. If we were to engage in an open and honest evaluation of United States foreign affairs since the end of World War II, one could easily testify to the many triumphs of United States diplomacy while, at the same time, acknowledging the United States diplomatic record during this time is hardly flawless. Moreover, here lies the problem: regardless of whether you are a critic or a proponent of United States international engagement, you will not have a hard time massing a considerable amount of evidence to reinforce your worldview.

President Trump has made clear his desire for a new direction in US foreign policy. His critics are no less determined to maintain our current course. So where do we go from here? Over the years, there has been no shortage of academics, strategists, and former government officials who have sought to answer this question. Yet Hal Brands's book, *American Grand Strategy in the Age of Trump*, stands out among the pack.

Brands, one of the leading authorities on American grand strategy, is the author of several noteworthy books on the subject, including the outstanding *What Good Is Grand Strategy? Power and Purpose in American Statecraft from Harry S. Truman to George W. Bush*. His latest book is actually a compendium of essays he has published over the last few years that seeks to provide a thorough and historically grounded appraisal of the Trump administration's vision of American foreign policy. It is important to note this book's targeted audience is advanced, well-read scholars, and practitioners of American grand strategy; although those who are new to this field will also find this book enjoyable and educational, the learning curve will be high. In order to fully appreciate the nuances of grand strategy that underlie this book, I would recommend that this not be the first book on the subject you read.

Brands begins with a spirited defense of the globally engaged, post-1945 American grand strategy and critiques a popular alternative grand strategy known as offshore balancing. He then proceeds to examine and unpack President Trump's "America First" campaign rhetoric, which Brands argues closely follows a Fortress America grand strategy that would see the United States fundamentally reverse its commitment to maintain the international order, pursue economic nationalism, and forgo multilateralism in favor of unilateral engagements. Brands provides a careful, fair, and thorough admonishment of this type of thinking. Yet it is not Brands' critique of the Fortress America grand strategy that makes this book of great value; rather, it is his proposal for a new, or more accurately, a revised grand strategy called "better

nationalism,” which seeks to improve upon, not abandon, a globally engaged United States grand strategy.

Brands is complimentary of the post-1945 global order the United States helped to create. At the same time, he is not blind to the growing populist tendencies developing within the United States and Europe. He does not accept all of the Trump administration’s concerns, nor does he completely reject all of them. He accepts a globally engaged American strategy but is unafraid to pinpoint that need to be improved. Whether Brands’s more nationalistic internationalism (partially practiced by the Nixon and Reagan administrations), is the best strategy for the US is debatable. What is not debatable is that the author’s approach to critical thinking and strategy development is the clear and central accomplishment of this book.

Brands identifies some challenges in implementing a better nationalistic grand strategy, including upsetting allies and partial disruption of the international order, and executing such an approach would require extreme skill and sophistication by the United States. Brands is no doubt correct about the challenges in attempting to execute such a grand strategy, but he spends little time in explaining how to overcome these challenges. If the United States failed in its attempts to implement a better nationalistic strategy or undertook a scaled-down version of it, the results could be even worse than any alternative grand strategy. In short, there are consequences for failure; as such, a more deliberate examination of the obstacles to successful implementation of “better nationalism” represents both the main drawback of this book and a wasted opportunity for Brands.

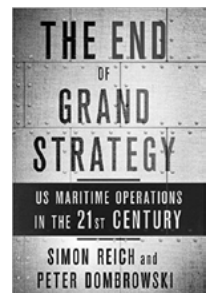
Nonetheless, the thoughtfulness, relevance, and contributions of this book to the field of American grand strategy more than outweigh any of its shortcomings. Brands’s commitment to sustained and sophisticated scholarship is very much appreciated and welcomed. I highly recommend this book.

The End of Grand Strategy: US Maritime Operations in the 21st Century

By Simon Reich and Peter Dombrowski

Reviewed by Dr. Sarandis Papadopoulos, Secretariat Historian, Naval History and Heritage Command

In the past, the United States “did” grand strategy well. Whether George Washington’s harmonizing of military operations and coalition relations to gain Colonial independence, Abraham Lincoln and Ulysses Grant’s complementary efforts to defeat the Confederacy’s will and ability to resist, or the triumvirate of Franklin Roosevelt, George Marshall and Ernest King administering a global war, Americans have long known how to match ways, means, and ends. Due to the complexity of today’s challenges, however, and the ever-present desire to control world events, according to Simon Reich and Peter Dombrowski’s *The End of Grand Strategy: US Maritime Operations in the 21st Century* that ability is now gone.



Washington, DC: Brooks Institution Press, 2018
252 pages
\$30.00

Their evidence to make that diagnosis is how current-day American naval power satisfies US government interests.

This monograph is built upon a solid cross-section of recent literature and government reports, leavened with interviews. Unsurprisingly, the American navalist Alfred T. Mahan appears in the text several times, although the Briton Julian Corbett does not. The work seeks to explain the inability, even impossibility, of crafting an American grand strategy.

The argument in *The End of Grand Strategy* showcases a tyranny: US naval operations reflect unconstrained national wishes. Reich and Dombrowski explain these ambitions using six case studies: maintaining Arabian Gulf access; conducting exercises to meet an unfolding Indo-Pacific challenge; managing alliances or coalitions to fend off terrorists and pirates; preventing nuclear, chemical and biological proliferation; confronting an indeterminate Arctic end state; and stemming illicit flows of drugs and people across the oceans and Caribbean (chapters 3–8). The tyranny is that the military is all the US government has to address these challenges, in part reflecting then-General James Mattis's 2013 comment to Congress, "If you don't fund the State Department fully, then I need to buy more ammunition ultimately." To the authors, the current environment is so complex, and so demanding, every post-Cold War administration will commit the US Navy, Marines, and Coast Guard, without reference to any single ways-means-ends calculus(32).

Setting strategic priorities is impossible in such a climate, given the challenges' multiplicity and the operational loads they impose. Instead, all six case studies match one of three durable American strategic approaches: a primacist slant the authors call "hegemony," a multilateralist role they call "sponsorship," or a noninterventionist "retrenchment." Within each strategic attitude, two variants are outlined here, yielding six strategies which have coexisted across all twenty-first century presidencies. As the object of this book, the US sea services consequently work in a world of plural strategies not a singular one. Even in our state of relative peace, the services work hard and can never win, all to declining effect and straining readiness (7). In such a light, conceiving a grand, unified approach, World War II's "Germany first" or Cold War containment, is out of reach, making an effort to create one so unworkable the authors call it "presumptuous" (161).

Such a conclusion is destined to challenge Reich and Dombrowski's colleagues, political economists and international relations theorists, whom they characterize as creating strategy deductively, that is from the top down. Instead, *The End of Grand Strategy* assembles its arguments inductively, looking at operational case studies and generalizing divergent strategies from them. Such a method has a strong appeal to this reviewer.

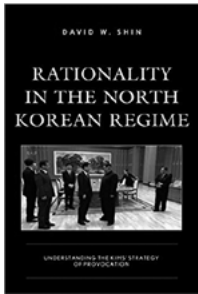
The approach here is provocative, but not prescriptive; there is no solution offered in the book to the current American strategic ways-means mismatch (41–42). Its case studies read well, with chapter 6, "Navigating the Proliferation Security Initiative and Informal Sponsorship" teaching much. That segment discusses the American-initiated regime for controlling weapons of mass destruction using naval power and, more importantly, the level of operational brokering each mission requires. To the last point, the appended list of Partnership

Security Initiative exercises is particularly welcome. An example of ad hoc sponsorship, the Partnership Security Initiative commands international acceptance, while oceanic geography demands much effort by the sea services to fulfill its needs.

But there are concerns about the book's portrait of our strategic moment. Today's environment is complex, but not unique in American naval experience. Governments have always used navies to influence events ashore. In fact, today's strategists could compare how the 1930's US Navy eked out the resources to prepare for high-end challenges during peacetime.

Similarly, *The End of Grand Strategy's* conclusion prompts discomfort, suggesting that, if properly resourced, a hegemonic primacy "should" become America's grand strategy (emphasis in original, 177). In response, the strongest question this reviewer can pose is whether a grand strategy has a defensive end or an offensive one. Reich and Dombrowski do not discuss whether a defensive role is the stronger strategic stance. Using military force solely to defend America's economy and social well-being, as part of international good behavior, is primarily defensive. If American seapower was cast as its "ways," such a sponsorship tack would broaden mission legitimacy and could lower the demand for US naval resources. Given that deterring conflict is a central US goal, the more combat credible friends the nation has, the more secure it will be.

To sum up, in its diagnosis *The End of Grand Strategy* offers much; scholars and the policy community need to take its argument into account when debating strategy. Setting priorities is absolutely needed, and current arguments are stilted. While flawed, this book starts us on fixing that discussion.



Lanham, Maryland:
Lexington Books, 2018
354 Pages
\$110.00

Rationality in the North Korean Regime: Understanding the Kims' Strategy of Provocation

By David W. Shin

Reviewed by Dr. Andrew Scobell, senior political scientist, RAND Corporation

The regime in Pyongyang is not crazy, and Kim Jong-Un is not a lunatic. While these assertions are articles of faith for most scholars and analysts who study North Korea, for web surfers seeing photographs of the chubby cartoonish leader of Democratic People's Republic of Korea (DPRK) and casual cable news viewers watching footage of parading Korean People's Army soldiers goose-stepping in formation, Kim appears a crackpot and North Korea seems a bizarre place.

Which set of perceptions is accurate? Author David Shin puts this question to the test. The result is a scholarly volume of more than 300 pages that examines ten case studies of Pyongyang's "provocations" between 1950 and 2015. For each case, Shin looks to assess whether DPRK actions were rational based upon his determination that an action was premeditated and driven by a clear strategy. The author spends more than a dozen pages at the outset exploring the meaning of "rationality." This is not wasted effort since the variable tends to be seen in strictly dichotomous terms: someone is either rational or irrational. But as Shin notes, rather than perpetually clear-eyed and calculating, emotions are part and parcel of the logic of rational decision making. Moreover, the calculus of rationality varies by decisionmaker and context.

The author asserts—quoting Keith Stanovich—"rational beliefs and actions are supported by strategies" (2). Thus, for each case examined, "The preponderance of the evidence must demonstrate that at least one of the Kims and/or the core North Korean elites . . . deliberately planned and executed the provocation" (17). In other words, a provocation is part of a coherent strategy. But discerning intent is no simple matter in a country without a free press, where it is not possible to interview senior officials or conduct archival research. Shin does well to comb the range of available evidence, most of which are secondary sources.

Shin concludes that North Korea is rational—or at least mostly rational—in 9 out of the 10 cases he examines: 6 in the Kim Il-Sung era (1950–94), 2 in the Kim Jong-Il era (1994–2011) and 2 Kim Jong-Un era (2012–present). In only one case does the author detect significant irrationality: the 1987 bombing of Korean Air Flight 858. The nine core chapters that examine the 10 case studies are extremely dense and detailed making it quite challenging for a reader to discern the degree of rationality driving each provocation. Fortunately, in the concluding chapter the author includes a helpful table that allows the reader to review the key elements of each provocation and see where Shin comes out.

For this reviewer, one major disappointment is that the author is not as explicit as he could be in defining who exactly constitutes the "North Korean regime" and how best to characterize it. Shin comes closest 17 pages into his book where he explains—almost in passing—that in each case study he assumes that the key decision-makers are Kim Il-Sung, Kim Jong-Il, Kim Jong-Un, or "core North Korean elites" (17).

Nevertheless, the reader is never completely clear about who made every decision to execute a provocation and what kind of regime the decision-makers are a part of. Shin does observe on the very last page of text that North Korea is undergoing a “post-totalitarian transition,” but he does not specify when this transition began (292).

Shin considers some key implications of his findings and several of these are worth noting. The good news is that since the North Korean regime is rational, war is avoidable, Pyongyang is deterrable, and “Washington can pursue diplomacy with realistic goals” (290). The bad news, as Shin observes, is that the denuclearization of North Korea may not be achievable at least in the short term. After all, why would a rational Kim Jong-Un be eager to negotiate away his greatest asset?

RUSSIA

Russia's Military Revival

By Bettina Renz

Reviewed by Dr. Andrew Monaghan, Oxford Changing Character of War Centre,
Pembroke College, Oxford

Cambridge: Polity, 2018

249 pages

\$64.95

Bettina Renz, an associate professor of politics and international relations in Britain, has performed an important service with *Russia's Military Revival*. In a concise but thorough and wide-ranging monograph, she offers both a succinct critique of the more alarmist Western assessments of Russian military capability, its uses in Moscow's foreign policy, and a well-structured, coherent overview of Russia's defense capabilities. The book's five chapters, which are supplemented by a useful biography, present an argument built on a wide range of academic and primary sources.

Chapter 1 sketches historical background, examining the nexus between military power and foreign policy and four persistent factors that shape Russian foreign policy: great-power status, sovereignty, imperial legacy, and multilateralism. Renz underscores the point that a strong military is an essential feature of Russia's great-power status and self-perception. Equally, she emphasizes the significance to Moscow of sovereignty: the collapse of the USSR presented the Russian leadership with a crisis of statehood. Consequently, the importance of maintaining sovereignty has emerged as a key principle and top priority in Russian foreign policy. She quotes President Putin: "True sovereignty for Russia is an absolute necessity for survival" and recognizes Moscow's need for armed forces able to fight simultaneously in "global, regional and—if necessary—in several local conflicts to guarantee Russian security and territorial integrity no matter what the scenario" (31–32).

Chapter 2 also establishes a longer-term context, but it looks at Russian military reform in more depth. Renz colorfully quotes Pavel Grachev, then defense minister, who noted Russia inherited "nothing more than ruins and debris" from the USSR, and elaborates the twenty-year struggle to transform the former Soviet military into a force fit for the twenty-first century (53). It was a struggle beset by political neglect throughout the 1990s, and one that, for all the progress since 2008, remains incomplete, particularly in terms of manpower and the defense industry's ability to deliver.

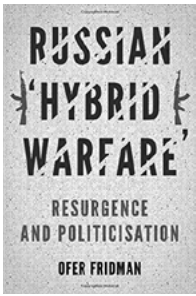
The third chapter offers a descriptive review of Russia's other force structures, describing the Ministry of the Interior, the Federal Security Service, the Ministry for Emergency Situations, and the recently formed National Guard. This is an important part of the book—too few Western analyses attempt to think of the relationship between Russia's armed forces and those that deal with internal order and new security challenges for which the military is ill-equipped to deal. As Renz notes, the link between Russia's internal and external security is poorly understood in the Euro-Atlantic community, not least because some of these forces and capabilities do not fit readily into existing analytical frameworks.

The fourth chapter looks at the annexation of Crimea and Russia's intervention in Syria in the longer-term context of Moscow's use of military power since the 1990s. Indeed, the author observes Russian authorities have regularly used military power in pursuit of a variety of policy objectives since the early 1990s, and the deployment of the Russian military beyond Russia's borders is therefore nothing new. Moscow has used military power both to cooperate with others and to strengthen its position in multilateral institutions.

Chapter five explores Russian military thinking. Offering a critique of what has become known as "Russian hybrid warfare" or the mythical "Gerasimov Doctrine," Renz is clear: these terms are not useful, since they have been stretched to cover all kinds of Russian behavior. Instead, she points out that Russian military thinking often differs from that in the West, citing, for instance, the lack of a consensus in Russia to mirror the prevalent Western post-Cold War view that conventional wars were a thing of the past. Russian strategic priorities differ and military thought builds on a rich homegrown theoretical history: Soviet military theorists produced influential and innovative work that was often well-ahead of that being done in the West. Renz also sketches out various groups of thought to illustrate the divergent views within the Russian military establishment about the changing character of war, the debates over the relationship between manpower and technology, and the kind of conflicts likely to erupt in future.

Despite the various debates, reforms, and visible improvements, Renz emphasises the strong sense of long-term evolutionary continuity in Russia's military revival, especially with regard to the importance of large-scale conventional warfare. There is no evidence, she argues, of a fundamental turnaround or paradigm shift in Russian views of the utility of force this decade. Better capabilities may offer more opportunities to use force, but do not necessarily generate a willingness to use it in aggressive, expansionist war-making. Russia's military revival, she suggests, owes as much to internal insecurity and stability as about fighting wars. Moreover, while there are clear improvements in terms of capabilities, Renz makes it clear that Russia's capabilities are not yet in a position really to challenge Western and especially US military capabilities substantially.

Historians may protest at Renz's use of phrases such as "throughout history" and "as lessons of the past reveal," and others may suggest Renz does not sufficiently explore how the Russian leadership has sought to address the manpower and defense industry problems to which she points. Moreover, there are noteworthy gaps in the analysis—NATO's Libya campaign is hardly mentioned, and the war in eastern Ukraine, the question of developing the armed forces as part of deterrence, and the establishment of the National Defense Control Center are all only very lightly touched upon. The latter is a particularly significant feature not only of Russian defense but of contemporary state strategy-making. Reference to more of the significant personalities in the Russian defense and security sector would also have added color. Nevertheless, this book offers both a useful critique and solid platform for further developing thinking about Russia's military revival—it is recommended reading for those coming to terms with Moscow's role on the international stage.



New York: Oxford
University Press, 2018
288 pages
\$40.00

Russian “Hybrid Warfare”: Resurgence and Politicisation

By Ofer Fridman

Reviewed by Dr. Christopher Spearin, professor, Department of Defence Studies of the Royal Military College of Canada located at the Canadian Forces College

In his monograph, Ofer Fridman tackles a pressing question given the current rocky state of the West’s relationship with Russia: even though the West and Russia employ the term “hybrid warfare,” why do they still talk past one another? To handle this question, Fridman first offers the intellectual genealogy of the term for each party before turning to why the hybrid warfare concept has been weaponized and politicized by each. This approach speaks both to the growing prominence of the term among Western and Russian analysts, media outlets, and practitioners and to why understanding is often a function of comparing apples and oranges.

To expand, the first part considers the trajectory of the intellectual experience in the West. This approach’s benefit is allowing the reader to step back and see the forest for the trees. The book initially highlights Frank Hoffman’s work in the early 2000s, a stance that was largely military oriented and focused upon the operational level with no particular adversary in mind. The book explores why this initial ideational delimitation came about and how, over time, the Western understanding blossomed to become more multifaceted and to be seen as ideally descriptive of Russian activities.

The detraction of this approach is that anchoring the text on Hoffman’s work, however important, does not capture the entire intellectual experience. True, Fridman recognizes some of Hoffman’s contemporaries in the second chapter. But this exploration is incomplete given the light referencing to authors in the second and third chapters that Hoffman himself identified as important. In short, the reader helpfully sees the forest, but it may in fact be denser than what is presented.

The second part presents the commensurate Russian experience. On the one hand, what the reader will find useful here, coming after the Western presentation, is the resulting appreciation of the wider nature of *gibridnaya voyna* (hybrid war) with its emphasis on multiple actors and avenues for state power and the downplaying of the military tool. Additionally, the distinction here is worthwhile given the bundling and overlap of terms—such as new generation warfare, Gerasimov doctrine, and gray-zone conflict—that Westerners often use to frame the Russian approach. Put differently, the book contributes to a much-needed discernment.

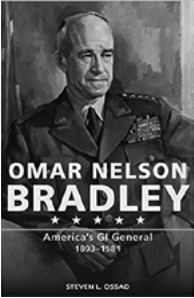
On the other hand, the reader will have to look elsewhere to consider how past Soviet practices play into contemporary Russian thought. Certainly, Fridman states that he wants to investigate how concepts impact political events and policy-making rather than the opposite. He contends the current Russian endeavor does not engage the legacy of Cold War era “active measures.” Moreover, he asserts the reader should do likewise: “Remember that while some Russian actions can be conceptually described as an adaptation of active measures to twenty-first-century realities, the differences between them are similar to the

differences between the means and methods of the First and the Second World Wars” (4). Fair enough, but whereas Fridman’s examination of the Western conceptual approach dates mostly to developments since the end of the Cold War, he offers in the Russian context many pages examining the impact of Evgeny Messner, a thinker born in the nineteenth century. Perhaps a caveat about applicability is in order here too.

The book’s third part—its most beneficial—reveals how the term hybrid warfare moved into each camp from the ideational to the political realms, thus allowing the concept to gain momentum and the differences between the two approaches to become acute in very public ways. In Fridman’s framing of the Western case, NATO’s embrace of the concept and the subsequent framing of Russia through this lens have a threefold rationale. One is to spur on the organization’s revitalization by confronting more than just so-called traditional military challenges. Another is to underscore that NATO is a key defender of Western values. The third rests largely with the initiative of NATO’s newer Eastern European members to ensure the organization’s other members appreciate and respond to the historical fears and the contemporary challenges they confront. As for the Russian example, though the concept may be much more expansive in regards to nonmilitary activities, Fridman argues the Russian military nevertheless advances *gibridnaya voyna* because it assists in attracting additional resources to the armed forces overall. What is more, applying *gibridnaya voyna* in order to best capture Western activities vis-à-vis Ukraine and elsewhere helps solidify Russian public opinion and provide support to Russian political institutions and policies.

Altogether, though one might quibble with how the author has engaged the intellectual history of hybrid war, the book nevertheless provides a useful illustration of how the Western and Russian camps diverge in both their thinking toward a guiding concept and in their application of it.

BIOGRAPHY



Columbia, MO: University
of Missouri Press, 2018
492 pages
\$36.95

Omar Nelson Bradley: America's GI General, 1893–1981

By Steven L. Ossad

Reviewed by Dr. Conrad Crane, chief of historical services of the US Army Heritage and Education Center, US Army War College.

No important figure in American military history needs a good biography more than General of the Army Omar Bradley. He carefully controlled his narrative while alive, authoring or coauthoring any books about him, and his second wife, Kitty, carefully guarded his image after his death. Historians like Martin Blumenson and Rick Atkinson chipped away some parts of the Bradley façade. But until now, no one has attempted a comprehensive, objective treatment of the longest-serving five star general. Steven Ossad is a retired Wall Street technology analyst who has also written a well-received biography of Major General Maurice Rose, and this most recent effort won the Society for Military History's 2018 award for the best military biography. Ossad's fresh perspective on Bradley's early life and military career after World War II has hopefully launched more contemporary analyses of the general's impact on the United States and its Army, but this book will hardly be the last word on Omar Bradley.

Ossad relies heavily on interviews and accounts by Bradley and his closest confidants, with particular focus on Thomas Bigland, Bernard Montgomery's liaison officer, torn by conflicting loyalties to both Army Group commanders but very frank in his observations. So it is not surprising the book is mostly sympathetic to its subject, though Ossad admits Bradley was vain, took slights very personally, and held grudges for decades.

The book does very well covering Bradley's early life and his West Point career. A skating accident while a youth ruined his teeth, and for the rest of his life he was concerned about his appearance and reluctant to smile. At West Point he excelled in sports and his first impressions of many key subordinates in World War II were established on playing fields there. He was mentored in his early military career first by Edwin Forrest Harding and later by George Marshall. Bradley taught mathematics at West Point and tactics at the Infantry School, building relationships and his reputation. He proved particularly adept at creating and solidifying organizations, ranging from the 28th Infantry Division as the war was beginning, to the II Corps in Tunisia, the 12th Army Group in Northwest Europe, and the Veteran's Administration after the war ended.

Ossad argues Bradley was one of the best American corps commanders of the war, excelling in Tunisia and Sicily, and Dwight Eisenhower's best Army Group commander in northwest Europe, though that comparison is always with Montgomery, ignoring Jacob Devers. The author also takes every opportunity to deflate the image of George Patton. Ossad thinks Bradley deserved his moniker of "the soldier's general," though the best evidence offered is just that too many people believed it for it not to be true.

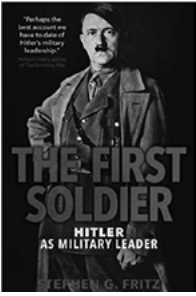
While the author admits Bradley was quick to relieve subordinates that trait is explained away as mimicking George Marshall. Ossad does not address Daniel Bolger's accusation of a zero-defects mentality in Bradley's commands. The author agrees with critics that Bradley should have fired First Army commander Courtney Hodges, however. Ossad also eviscerates Bradley for poor leadership during the Battle of the Bulge, and assigns him great responsibility for the bombing shortfalls at the beginning of Operation Cobra. On the other hand, the book quickly exonerates its subject from any blame for failing to close the Falaise Gap.

The section on the planning for Cobra is well done, showing Bradley almost as Montgomery, meticulously planning a complicated operation. The 12th Army Group was the largest field command in American history, and Bradley deserves much credit for organizing and running it. Though, as anyone who has read David Eisenhower's book on his grandfather at war realizes, by 1945 Ike's biggest prima donna was not Patton or Montgomery, it was Bradley.

The most valuable contribution of the book is its coverage of Bradleys' tenure as a postwar chief of the Veteran's Administration, perhaps his greatest service to the nation. President Harry Truman tapped the reluctant general to take over the troubled and understaffed organization facing the return of millions of veterans and mastering the intricacies of the revolutionary legislation passed to help them, in what was described as a "frightful bureaucratic challenge." Truman received great political dividends from the appointment, while Bradley and Dr. Paul Hawley, former chief surgeon of the European Theater, created the "most advanced, accessible, equitable, and sustained health care system ever established for veterans by any nation or empire" (355). They also reformed administrative procedures for all Veteran Affairs programs, as Bradley brought in many of his 12th Army Group staff to help. He expanded the organization from 65,000 employees to over 200,000. Some of his impact is still evident, especially in decentralization. But over time, many of the problems he faced have returned.

Truman then appointed Bradley as first chairman of the Joint Chiefs of Staff. Ossad tries to argue for the general's impact on that office. It appears, however, the author was running out of steam, or facing pressure from his publisher to cut words, because he only really discusses two events, Bradley's hostile reaction to the "revolt of the admirals" and the relief of Douglas MacArthur in Korea. And the coverage of Bradley's career after leaving that position from 1953–81 is handled in three pages.

There is still much to be covered from that period, most very unflattering to the general. Before his first wife died in 1965, he had an affair with Kitty—Ossad mentions that, and they were a very contentious pair who shared a passion for horse racing. They destroyed archival documents deemed damaging to his image, torpedoed a project to build a Bradley Center in Carlisle that would have rivaled the MacArthur Memorial in a dispute over tax write offs for donations, and padded those donations by buying cheap silver plate that they inscribed with a "B" and then claimed it was family silver. Hopefully, other authors will now follow Ossad's lead and delve even deeper into the career and impact of this complex and important figure.



Yale University Press, 2018

480 pages
\$30.00

The First Soldier: Hitler as Military Leader

By Stephen G. Fritz

Reviewed by Dr. Richard L. DiNardo, USMC Command and Staff College

Undoubtedly, one of the most written about figures of the twentieth century is Adolf Hitler. The work under consideration here ranks as an excellent addition to that corpus of literature. The focus of Stephen Fritz, one of the more astute observers of the military history of the Third Reich, is on Hitler's career as a military leader.

Fritz begins with Hitler's understanding of military theory and history. Hitler was thoroughly conversant with the concepts of Carl von Clausewitz, and was also familiar, though how much remains debatable, with the geopolitical ideas of Karl Haushofer. A true autodidact, Hitler also read a fair amount of military history, economics, and the racist tracts of Volkisch writers. Some of this reading served Hitler well later as a military leader in that, as Fritz suggests, he generally had a better understanding of economics than his generals.

Perhaps the most written about aspect of Hitler's activity in World War II by military historians concerns his relationship with his generals. Fritz delves into this area with his considerable acuity, and emerges with some very nuanced arguments. Ideologically, Hitler had little opposition to brook. The majority of German generals shared much of Hitler's ideological outlook, as well as his expansionist and exterminationist aims.

On operational matters, Hitler more often than not, as Fritz points out, was willing to defer to his generals, even during the latter half of the war. While Hitler did not necessarily serve his subordinates well, Fritz argues Hitler was not well served by his subordinates either. The most notable person who comes in for rough treatment in this regard is Franz Halder. Chief of the General Staff from September 1938 until his dismissal in September 1942, Halder was in many ways the antithesis of Hitler militarily.

A professional soldier, Halder had spent his career in a long line of staff positions. The quintessential Frontkämpfer, Hitler was never averse to throwing his frontline service in Halder's face, suggesting he knew more about war than many of his generals. As a staff officer and operational thinker, Fritz's picture of Halder is unflattering, to say the least. Stolid and unimaginative, Halder was often unscrupulous enough to withhold information from Hitler, which he might have found useful in making decisions.

Operationally, Fritz notes Hitler, as even such postwar critics as Erich von Manstein agreed, was capable of the occasional shrewd insight. Hitler could read a map as well as many professional officers, and could offer well considered analysis of situations. What he often lacked was the kind of professional knowledge when it came to the management of large scale movements and what was possible to accomplish.

Oddly, Hitler and his generals shared two principal faults as military leaders. The first was a lack of understanding of strategy. While Hitler had a clear, if horrifying vision of what the post war world should look

like, he had no clear notion of how to get there. Hitler's blindness in this area was shared by his military advisors. Although many were graduates of the vaunted *Kriegs Akademie*, the school's curriculum—the only professional military education an officer received in his career—remained focused at the operational and tactical levels. Thus, after Operation Barbarossa faltered and the United States entered the war, neither Hitler nor his military advisors had the foggiest notion of how to proceed. Commanders themselves, most notably Manstein, at times confused strategy with operations. This was especially true during his time as commander of Army Group South, especially after the defeat at Kursk.

Another problematic area was logistics. While Hitler understood macroeconomics much better than his generals, he did not understand logistics, and the impact that logistics could have on operations. In this, however, Hitler was not alone. The planning and conduct of German military operations in both world wars was marked by the bad habit of often waving away potential logistical problems, seemingly believing such issues would solve themselves. This approach, often based on faulty assumptions, eventually bore more risk than the Germans could deal with, especially when operations had to be conducted in areas with poor or underdeveloped infrastructure.

While coalition warfare was more the province of Hitler the Führer as opposed to Hitler the Feldherr, the subject gets very little play in the book. This is unfortunate, given the critical role Axis forces were earmarked to play in the 1942 campaign in Russia.

Ultimately, the picture of Hitler that emerges from Fritz's work is a very nuanced one. Although Hitler remained the committed ideologue to the end, even late in the war he could still come up with gifted insight. Too often, however, this was followed by raving self-delusion, which served to undermine whatever advantage may have been gained from the previous insight. This work, marked by the kind of meticulous research and well-supported argument that we have come to expect from Fritz, is a most welcome addition to the pantheon of World War II scholarship. Students of command and leadership at the highest levels, both in and out of uniform, will profit from this outstanding work.

The Spy and the Traitor, The Greatest Espionage Story of the Cold War

By Ben Macintyre

Reviewed by Dr. W. Andrew Terrill, Professor Emeritus, US Army War College.

Colonel Oleg Gordievsky of the Soviet intelligence service, KGB, was one of the most important Western spies in Cold War history. He was of incomparable value to the British intelligence service, MI6, and thru them to the CIA. Both President Ronald Reagan and British Prime Minister Margaret Thatcher were provided with his secrets and found them to be important for the shaping of their foreign policies. Gordievsky's personal story is also compelling, and is told brilliantly in



New York: Crown, 2018

358 pages

\$28.00

this volume, which legendary author John Le Carre' describes on the book's dustjacket as "the best true spy story I have ever read."

As a KGB junior officer, there was no indication that Gordievsky would eventually turn against the Soviet system and become a British spy. Rather, the organization viewed him as politically reliable and noted that his father and older brother served as career members of Soviet intelligence. Nevertheless, over time, Gordievsky's convictions about protecting the Soviet system were shaken by that country's ruthless actions. During his initial service as an overseas operative, he witnessed the construction of the Berlin Wall, and was shocked at the brutality used to prevent East Germans from escaping to the West. He was later equally concerned over the 1968 Soviet invasion of Czechoslovakia, which appeared to underscore Soviet hostility to any loosening of ideological rigidity within the Soviet Union and the other Warsaw Pact states.

Yet, perhaps the most significant event in Gordievsky's questioning of the Soviet system was his three-year overseas assignment to Copenhagen. There he thrived in an atmosphere of personal freedom, societal cheerfulness, and cultural openness, where he could indulge his passion for classical music, much of which was forbidden in the Soviet Union. As Soviet dogma became more threadbare to him, Gordievsky became disillusioned. His return to Moscow after his initial tour of Denmark only reinforced his contempt for the values of Soviet ideology. Later, on a second tour as an intelligence agent in Copenhagen, he made a series of oblique and subtle moves signaling that he was willing to work with MI6. When contacted by the British, Gordievsky indicated that he would serve as an ideological spy and initially refused to take money from them.

After service as a useful intelligence asset in Denmark, Gordievsky returned to Moscow, and his intelligence activities on behalf of MI6 essentially went dormant. British security officials believed that any intelligence collection activities in the Soviet Union would probably be doomed to failure as a result of the massive Soviet counterintelligence system within their own country. Unfortunately, Gordievsky's prospects for a new overseas assignment also seemed dim. His decision to divorce his ideologically committed wife and marry a younger woman seriously hurt his career and seemed to have condemned him to a career of intelligence drudgery with little prospect of promotion.

To dig himself out of these difficulties, he began to learn English. Eventually, after some bureaucratic maneuvering, Gordievsky was able to get himself assigned to the Soviet Embassy in London, where he was to serve as a Soviet intelligence agent under diplomatic cover. Unfortunately for the KGB, he quickly reestablished his relationship with MI6 in London, and began secretly meeting with his handlers. One of the more amusing aspects of this book is how British intelligence struggled to come up with ways to advance Gordievsky's career once he had been assigned to London, including finding pretexts to deport troublesome superiors and rivals. MI6 also supplied Gordievsky with some intelligence tidbits of limited value, which they called "chickenfeed," to pass along to his Moscow superiors and thereby prove his value at developing a network of secret agents. In return, MI6 was able to gain material of tremendous value from Gordievsky including intelligence

on Soviet operations throughout the United Kingdom and Scandinavia including Soviet attempts to meddle in British elections.

Macintyre maintains that some of the most valuable information Gordievsky provided to the West came during the build up to 1983 NATO exercise Operation Able Archer in Europe. This exercise simulated an escalating conflict between NATO and the Warsaw Treaty Organization that culminated with the wargame's mock use of nuclear weapons. The wargame came at a time when the Soviet Union was led by the deeply paranoid former KGB chief, Yuri Andropov, who was fearful of a US first strike by President Reagan. MI6 told the CIA that the KGB, which was anxious to please Andropov, assessed that the exercise was a prelude to the outbreak of war and that it was being used as a cover for the build-up to war. An internal CIA summary of Able Archer conducted years later assessed that these fears could have caused the situation to escalate, and "Gordievsky's timely warning to Washington via MI6 kept things from going too far" (182).

The traitor referenced in the title of this book is not Gordievsky, whom Macintyre considers a hero. Rather, it is rogue CIA officer Aldrich Ames who chose to address his ongoing financial difficulties by selling CIA secrets to the Soviet Union. These secrets included the identities of Soviet officials working for the CIA or MI6. While MI6 had never provided Gordievsky's name to the CIA, the organization's analysts were able to deduce it through a number of clues based on the intelligence passed on from the British. Gordievsky's identity was included as one of a number of agents betrayed to the Soviets and caused his immediate recall from London to Moscow.

As a KGB colonel, Gordievsky could not be imprisoned or tortured without strong evidence, but he was placed under intense surveillance and interrogated with drugs in an apparently unsuccessful effort to break him. Under these circumstances, Gordievsky chose to implement a longshot plan previously agreed upon with MI6. This plan involved an effort to escape from the Soviet Union via Finland. MI6 had never before exfiltrated a Soviet agent from their own country, and it seemed nearly impossible for them to do so this time. Consequently, the final portion of the book makes exceptionally exciting reading as it describes Gordievsky's desperate effort to escape.

Macintyre has written a number of previous books about espionage including three focused on World War II as well as an excellent biography of MI6 traitor Kim Philby. Consequently, the author knows a great deal about intelligence tradecraft and is effective and colorful at describing the mechanics of Gordievsky's actions as a KGB/ MI6 operative and the nature of the plan for him to escape from the Soviet Union (which the Soviets became aware of after the fact). In sum, this book is a pleasure to read as well as an important scholarly achievement that adds vital perspective on a number of aspects of the Cold War.

MILITARY HISTORY

1777: Tipping Point at Saratoga

By Dean Snow

Reviewed by Dr. Gregory J. W. Urwin, professor of history, Temple University



New York: Oxford
University Press, 2016
456 Pages
\$34.95

The Saratoga Campaign of 1777, which culminated in the surrender of 5,856 British, German, and Loyalist troops under Lieutenant General John Burgoyne, is generally hailed as the turning point in the American War of Independence—the victory that persuaded France, the mightiest power in Europe, to enter the conflict on the side of the infant United States. In this fast-paced history, Dean Snow focuses on 33 crucial days that fell between September 15 and October 17, 1777. That period witnessed the jarring general engagements at Freeman’s Farm (September 19) and Bemis Heights (October 7) in which Major General Horatio Gates’ mixed army of Continental regulars and militia from New England and New York bested its opponents and then subjected them to a siege that robbed Burgoyne of all hope.

Dean Snow is a professor emeritus of anthropology at Penn State University and an archaeologist by training. His interest in Saratoga dates to 1971, when he was a young assistant professor at the University of Albany. The National Park Service asked him to participate in the first of a series of archaeological projects at the Saratoga battlefield in preparation for the bicentennial festivities that would be held there six years later. For the next 45 years, Snow would survey the ground over which Burgoyne and Gates’ troops fought, examine the artifacts yielded by various archaeological digs, and immerse himself in the letters, diaries, reports, and memoirs left by the Saratoga campaign’s participants. Snow’s *1777* is both a labor of love and the result of intensive research.

Surprisingly, Snow did not produce the kind of exacting statistics-ridden, jargon-laden report that has become the hallmark of battlefield archaeology. He aims his book at a mass audience by crafting it as a narrative that conveys how the crucial phase of the Saratoga campaign was experienced by a few dozen participants. Snow characterizes his treatment as a microhistory, but it bridges the gap between microhistory and macrohistory. His cast of characters includes humble enlisted men and junior officers, along with battalion, brigade, wing, and army commanders. Snow tells his story through the eyes of these selected participants. His book is a tapestry of interwoven vignettes, each based on the accounts of one or more eyewitnesses. Snow keeps his material under tight control, permitting the reader to hop from one perspective to another without confusion, which is no small feat.

Authors of narrative history rely on observers who leave vivid testimony. Unfortunately, some of the most compelling anecdotes are spun by untrustworthy parties, and a historian needs to resist being seduced by suspect sources simply because they read so well. Snow makes this mistake with his heavy reliance on the memoirs left by Lieutenant Colonel James Wilkinson, Gates’s 20-year-old adjutant general. Snow acknowledges Wilkinson was an unprincipled opportunist who would

later betray his country to the Spanish after he attained high command in the US Army. Nevertheless, the author still takes a lot of what that untrustworthy rogue said at face value. The fact that Wilkinson's position enabled him to observe some of the most crucial events at Saratoga makes this inevitable, but one does not always know when the young staff officer spoke the truth or not.

For the most part, however, Snow handles his sources judiciously. He also treats the opposing forces at Saratoga with admirable objectivity. Snow believes any authentic history of the Revolutionary War must emphasize human endurance, and he empathizes with the soldiers on both sides as they faced a multiplicity of challenges and dangers. He also avoids the temptation of placing any of the senior commanders on pedestals. John Burgoyne comes across as a man driven by unflagging optimism until he finally realizes it is too late to save his beleaguered army.

Snow paints a complex portrait of Horatio Gates. Gates owed his rise in the Continental chain of command to the fact that he had served previously in the British army, and to his penchant for intrigue and political manipulation. His conduct throughout the campaign tended to be cautious, but that was sometimes dictated by valid logistical considerations. Major General Benedict Arnold receives the credit he richly deserved for the frenzied leadership and tactical acumen that broke Burgoyne's army at Freeman's Farm, but Snow resists the temptation to over romanticize the future traitor. He deftly highlights the overriding ambition, tactless zeal, prickly sense of honor, and quarrelsomeness that made Arnold a difficult subordinate.

Snow's description of battles and troop movements are supplemented by numerous maps, which makes it easy for readers to follow the action. On the other hand, however, he offers little analysis of the events he reconstructs with such panache. He seems content to tell his story and let his readers draw their own conclusions. Those who prefer their history in the form of entertainment will find *1777: Tipping Point at Saratoga* to their liking. Those with an interest in material culture will be disappointed by the many mistakes Snow makes in his depiction of Burgoyne's Redcoats.

Snow also misses an opportunity to make an important point regarding the development of the Continental Army. According to a long-cherished myth, the American regulars who bore the brunt of combat during the war's major battles did not acquire the skill and confidence to meet their British foes on equal terms until they underwent the ingenious training regimen orchestrated by Major General Friedrich, Baron von Steuben, at Valley Forge, Pennsylvania, during the winter of 1777–78. The problem with that interpretation is the Valley Forge encampment occurred after the British surrender at Saratoga. While Snow realizes Gates's Continentals proved more than a match for Burgoyne's Redcoats, Germans, and Loyalists at Saratoga, he neglects to explain why. That will have to wait for a future retelling of this decisive campaign.

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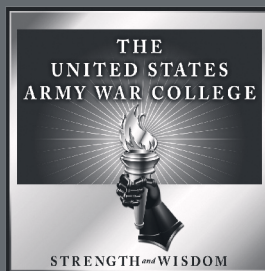
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