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ANNOUNCEMENT
Contemporary Strategy and Landpower Essay Award

The annual Contemporary Strategy and Landpower Essay Award recognizes and rewards authors outside the US Army War College for the most significant contributions on contemporary strategy and landpower in a volume of the US Army War College Quarterly, *Parameters*. The journal's editorial board selects winners based upon an article's analytical depth and rigor.

The Contemporary Strategy and Landpower Essay Award is made possible by the generous support of the US Army War College Foundation.

WINNERS FOR VOLUME YEAR 2022

First Place (Tie)

Colonel Zhirayr Amirkhanyan
"A Failure to Innovate: The Second Nagorno-Karabakh War"
Parameters 52, no. 1 (Spring 2022): 119–34
https://press.armywarcollege.edu/parameters/vol52/iss1/10/

Major John T. Pelham IV
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Second Place

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Third Place (Tie)

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From the Acting Editor in Chief

Welcome to the Summer 2023 issue of *Parameters*. The issue includes two *In Focus* special commentaries, a *Taiwan* forum, a *Clausewitz and Strategy* forum, a *Historical Studies* forum, and the *SRAD Director's Corner*.

Before I introduce the issue lineup, I would like to share two items with you. First, the US Army War College Press recently initiated *Parameters* Bookshelf—a new online feature that highlights select book reviews not included in the printed issues of the journal—to increase the number of book reviews published yearly. *Parameters* Bookshelf can be accessed on the US Army War College Press website at https://press.armywarcollege.edu/parameters_bookshelf/.

Second, to address budget constraints and the increasing costs of printing and mailing the journal, the US Army War College Press has cut its mailing list in half. All Press publications and *Parameters* are available at https://press.armywarcollege.edu/parameters/. If you would like to add your name/e-mail to our publication announcements or convert your print subscription to an online subscription, please send your name and contact information to the *Parameters* mailbox at usarmy.carlisle.awc.mbx.parameters.

In the first *In Focus* special commentary, "Responding to Future Pandemics: Biosecurity Implications and Defense Considerations," Diane DiEuliis and James Giordano argue that the evolving and expanding biothreat landscape challenges the Department of Defense's current approach to threats and prompts the need for modernized, improved preparedness and response to them. They contend the COVID-19 pandemic revealed specific weaknesses, including the Department of Defense's inability to sustain the military mission while meeting intragovernmental expectations to assist with civilian public health resources and services. In the second special commentary, "Understanding the Adversary: Strategic Empathy and Perspective Taking in National Security," Allison Abbe argues national security practitioners eed to understand the motives, mindsets, and intentions of adversaries to anticipate and respond to their actions effectively. She shows how perspective taking, the cognitive component of empathy, is the more necesary skill to develop and provides four ways strategists and practitioners can improve their insights into our adversaries' motives and mindsets.

The issue's first forum, *Taiwan,* features two articles. In "Taiwan's Food Resiliency—or Not—in a Conflict with China," Gustavo Ferreira and Jamie Critelli examine Taiwan's growing reliance on agricultural imports and its food stocks (that could endure trade disruptions for only six months) and claim the defense, intelligence, and diplomatic communities have overlooked this vulnerability in the strategic planning process. They conduct an in-depth study of Taiwan's ability to feed its population if a military conflict with China halts food production and imports. Their potential scenarios and findings underscore the urgency for US leadership and military

planners to develop long-term logistical solutions before a crisis occurs. In "The Strategic Importance of Taiwan to the United States and Its Allies: Part One," Luke Bellocchi presents four factors to consider in evaluating Taiwan's strategic importance to the United States and its allies. He shows why the United States should care and reviews a wide array of possible factors military and policy practitioners should consider when evaluating the current strategic environment. Part two of his article (to be published in a future issue) will build on part one and review policy statements related to changes in the Taiwan situation from the start of Richard Nixon's diplomatic detente with China to shifts since the start of the Russia-Ukraine War.

Our second forum, *Clausewitz and Strategy*, features one essay. In "Geniuses Dare to Ride Their Luck: Clausewitz's Card Game Analogies," Nicholas Murray posits that scholars have been using the wrong card games to analyze Carl von Clausewitz's analogies in *On War*, which has led to errors in understanding his ideas. By identifying the games Clausewitz discusses, Murray provides a more accurate interpretation of Clausewitz's original meaning for the study of war, as Clausewitz's writings provide the key ideas underpinning strategy development.

The third forum, *Historical Studies*, includes two articles addressing the role of adaptation and innovation throughout the Army's history. In "Change and Innovation in the Institutional Army from 1860–2020," John Bonin and James Scudieri analyze six case studies of institutional Army reforms to examine adaptation in peace and war. Their conclusions provide historical insights to inform current practices to fulfill the Army's 2022 Institutional Strategy. In "Innovation, Flexibility, and Adaptation: Keys to Patton's Information Dominance," Spencer French examines the historical record to show how the creative design of the Signal Intelligence and Army Information Services enabled General George S. Patton's Third Army in World War II to deliver information consistently and provides a model for considering the dynamics at play in fielding new and experimental multi-domain effects formations.

In the sixth installment of the *SRAD Director's Corner*, Eric Hartunian, the new director of the Strategic Studies Institute's (SSI) Strategic Research and Analysis Department, marks the 70th anniversary of the alliance between the United States and South Korea in his essay, "Recognizing the Increasing Importance of the US-ROK Alliance." He discusses the new yearlong partnership SSI has established with outside scholars to launch an examination of South Korea's growing importance to the US alliance system and security objectives across the Indo-Pacific region. The research developed through this partnership will contribute to our understanding of the nuances of Northeast Asia in the context of competition and avoid the current propensity toward miscalculations in the region.   ~CCC

Responding to Future Pandemics:
Biosecurity Implications and Defense Considerations

Diane DiEuliis and James Giordano

ABSTRACT: In an evolving and expanding biothreat landscape caused by emerging biotechnologies, increases in global infectious disease outbreaks, and geopolitical instability, the Department of Defense now faces challenges that alter its traditional approach to biothreats and prompt the need for modernized, improved preparedness for—and response to—potential biothreat scenarios. These challenges further complicate specific weaknesses revealed by the COVID-19 pandemic, including the Department's inability to sustain the military mission while meeting intragovernmental expectations to assist with civilian public health resources and services.

Keywords: biosecurity, biodefense, biological threats, preparedness and response

Over the past decade, three primary interactive factors have complicated the current widely evolving landscape of biodefense threats. First, emerging biotechnologies are radically leveling and expanding the pool of agents and techniques that bad actors could leverage as weapons. New techniques and technologies (such as gene editing and synthetic biology) could be used to modify extant pathogens or create others capable of incurring greater morbidity or mortality.[1] These technologies might initially be obscured by altered patterns of disease progression and thereby avoid early detection and response.[2]

Second, the frequency and unpredictability of emerging infectious diseases may increase given population expansion, climate change, and human encroachment into natural habitats where zoonotic jumps of disease can be more frequent. Third, such developments are occurring against a backdrop of an increasingly uncertain geopolitical landscape. For the past several years, the US government's biosecurity policy and governance efforts have exemplified the interactive nature of these factors by failing to keep pace with scientific advancements capable of generating novel risks and threats.

1. Joseph DeFranco et al., "Emerging Technologies for Disruptive Effects in Non-Kinetic Engagements," *HDIAC Journal* 6, no. 2 (Summer 2019): 48–55, https://hdiac.org/articles/emerging-technologies-for-disruptive-effects-in-non-kinetic-engagements/.
2. Diane DiEuliis and James Giordano, "Gene Editing Using CRISPR/Cas9: Implications for Dual-Use and Biosecurity," *Protein and Cell* 15 (2017): 1–2.

In addition, global population growth and environmental and geopolitical changes, including human migration, may render broader segments of the world's populace vulnerable to infectious disease outbreaks that could easily and rapidly escalate to major epidemic or pandemic proportions.

The conditions described above affect national security directly and indirectly, influencing the mission capability of the US Department of Defense (DoD) across all areas of responsibility domestically and abroad. These challenges alter the traditional DoD approach to biothreats and prompt the need for modernized, improved preparedness for and response to potential bio-incidents or biothreat scenarios. Although experts and officials knew about these issues before COVID-19, the pandemic revealed specific weaknesses in preparedness and response, including challenges posed by governmental requirements to sustain the DoD military response while assisting with civilian public health resources and services. In this article, we first examine the current biosecurity landscape and the weaknesses and challenges the pandemic revealed. This examination provides both a context and criteria for our recommendations on how to identify threats more effectively and efficiently and close vulnerability gaps in the future.

Changing Landscape of Biothreats

The advances made in emerging biotechnologies could "lower the bar" for the development of biothreats. The ability to create viruses de novo (from scratch) by accessing their genetic sequence information or to modify a variety of microbes (including viruses, bacteria, and fungi) to render them pathogenic (that is, having increased morbidity or lethality) are notable risks capable of enabling direct harms. The tools required for these manipulations have become more readily accessible to a wider range of actors, thereby diversifying the current and near-future potential operational environment. We contend that kinetic power to incur mass casualties and lethality and non-kinetic effects with the aim of focal or mass disruption (rather than overt destruction) may define this environment.[3] The aftermath of the COVID-19 pandemic has brought into stark relief the downstream, indirect repercussions of biothreat-induced disruptions, including economic and societal instabilities and distrust of public institutions. A competitor or adversary could seek to induce and exploit these repercussions through the threat or use of biological agents. Given current US governance models have not been coterminal with advancing biotechnologies, there are evident weaknesses, flaws, and vulnerabilities in domestic biosecurity that adversaries could target and (kinetically or non-kinetically) leverage in the near term.

As the global human population grows and infringes on natural environments, the potential for zoonotic transfer of infectious diseases also increases. Many disparate factors converge in this regard. Unprecedented human density in megacities puts pressure on infrastructures, sanitation, and hygiene, which are further exacerbated by ecological change and natural disasters. Indeed, the changing climate and human migration establish disease vectors (for example, zoonotic and insect-transmitted pathologies) capable of thriving and expanding their host ranges.

As disease vectors continue to increase, the military must devote more time and energy to considering how to address them in operations. In the last decade, the US military responded to five different infectious disease outbreaks, all while sustaining mission effectiveness during challenging conflict operations.[3] The threat of infectious disease varies considerably between combatant commands, depending on geographical epidemiological risk and the geopolitical environment. The latter is instrumental to the Department of Defense's understanding of an operational theater's health and security capabilities. This knowledge is vital, given that several countries either predict or have already experienced increased disease outbreaks. Although some countries have invested in high-containment research labs to prepare for and counter disease outbreaks, these laboratories can pose risks for accidental dissemination and the spread of novel pathogens.[4]

We must note that the same emerging technologies altering the biothreat landscape can mitigate the challenge of increases in the occurrence of infectious diseases. Indeed, bioscientific and technological advances are driving a growing bioeconomy—wherein a potential shift from petroleum-based manufacturing platforms to biotechnology-based platforms is underway.[5] The ability to produce high-value chemicals and materials offers a significant benefit to the industrial base that supports DoD requirements.[6] In the near future, the Department of Defense may be able to create various materials, devices, and tools for warfighters

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3. Thomas Cullison and J. Stephen Morrison, "Commentary: Bring DOD Fully into the Mix of Pandemic Preparedness and Response," Center for Strategic and International Studies (CSIS) (website), June 30, 2022, https://www.csis.org/analysis/bring-dod-fully-mix-pandemic-preparedness-and-response.
4. Diane DiEuliis and James Giordano, "The Need for Modernization of Biosecurity in the Post-COVID World," *mSphere* 7, no. 2 (April 2022): 8–14.
5. Peter Emanuel, Brian Feeney, and Diane DiEuliis, "Want to Grow the Economy? Try Fermenting It Instead," Institute for National Strategic Studies/National Defense University (website), March 11, 2021, https://inss.ndu.edu/Media/News/Article/2524839/want-to-grow-the-economy-try-fermenting-it-instead/.
6. Diane DiEuliis, Patrick Terrell, and Peter Emanuel, "Breaching the Department of Defense's Biotech Bottleneck," *Health Security* 18, no. 2 (April 2020): 139–44, http://doi.org/10.1089/hs.2019.0150.

that are based upon and affect their biology.[7] This biotechnological revolution could foster the creation of tools and methods of preparedness and response to future outbreaks. Developing medical countermeasures (such as RNA vaccines and better diagnostics) in the nonmedical milieu may also produce raw materials for supplies vital to the socioeconomic stability of a population. For example, during the pandemic, the need for active pharmaceutical ingredients was critical to the development of medicines. These ingredients, however, are only available through foreign and often single-source suppliers. The bioeconomy could be used to afford a novel means of production for these critical ingredients and enable their distributed manufacturing, providing for more rapid logistical use across the Department of Defense's broad areas of operation.

COVID-19 brought this fact into focus. One of our first observations at the beginning of the pandemic was that platforms for biotechnology, particularly those essential to medical and economic preparedness and response, must be "modernized."[8] Care for the sick and prevention of the spread of disease require treatments and vaccines. The capability to produce and manufacture these treatments and vaccines at scale quickly is critical, and the biosecurity sector must iteratively review, address, sustain, revise, or fortify these domains—and newly emerging ones—as needed to meet twenty-first-century biothreats. The need to develop and sustain advanced biotechnological abilities to test people rapidly and reliably and track the spread of the disease-causing agents is also crucial. Given the reliance on advanced and dual-use technologies to accomplish modernization, we argue the United States must improve traditional measures and methods of biosecurity (to address the expanding novel risk space effectively) and its preparedness and response platforms to provide protection effectively and efficiently from both natural and man-made threats.

Maintaining Readiness across DoD Response Capabilities

The COVID-19 pandemic clearly demonstrated that public health vulnerabilities can impact military readiness. The Department of Defense can and has assisted during domestic disaster events in accordance with the Defense Support of Civil Authorities. By sheer logistics, the Department of Defense is unmatched in its ability to support the nation during crises.

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7.   Joseph DeFranco, Maureen Rhemann, and James Giordano, "The Emerging Neurobioeconomy: Implications for National Security," *Health Security* 18, no. 4 (2020): 66–80.

8.   Diane DiEuliis et al., "Beyond 1918: Bringing Pandemic Response into the Present, and Future," Institute for National Strategic Studies/National Defense University (website), April 27, 2020, https://inss.ndu.edu/Media/News/Article/2165914/beyond-1918-bringing-pandemic-response-into-the-present-and-future/.

As shown during the pandemic, however, the Department of Defense must also ensure protection of the total force (active and civilian) domestically and abroad; the pandemic revealed force sustainment stressors and suggested potential vulnerabilities in DoD capabilities for force readiness. Fortunately, unlike the influenza pandemic of 1918–19, COVID-19 posed less of a threat to the younger, more physically fit population vital to the DoD mission. Yet, the COVID-19 crisis should provide a lesson for future threats that may affect the military population.[9]

Beyond examining and rectifying the appropriate balance between the needs of the force and the Defense Support of Civil Authorities' responsibilities, military leadership needs to examine the overlap of chemical and biological defense requirements of the force versus those focal to force health protection. Many of the public health provisions available and administered to warfighters are based on accepted and approved civilian health and therapeutic standards. It is also commendable that the Department of Defense is in the process of adopting ever-broadening definitions of *health* and *wellness*, to improve the health, wellness, and occupational protection of warfighter personnel.[10]

These definitions may not suffice for all scenarios worldwide where active-duty personnel can be exposed to exotic or rare diseases, and these same personnel face additional health risks stemming from chemical, biological, radiation, or nuclear (CBRN) exposures. The health challenges of novel diseases and current and emerging CBRN threats require updated and evolving medical and nonmedical assessments and interventions not necessarily identical (in type or extent) to those required for the general civilian population—these must be available to warfighters specifically. The unique needs of DoD personnel are not likely to be addressed or accommodated by Big Pharma or Big Tech, since they would be regarded as possible therapeutics for small likelihood (potential) events.

We assert that herein lies the paradox. This intersection of the health, medical, and counter-weapons of mass destruction most significantly impacted the military response to COVID-19. The Department of Defense had few internally crafted countermeasures or diagnostics, given that COVID-19 was a non-CBRN threat and not a biological weapon. Instead, it relied upon the quotidian aspects of force health diagnostics

9. Vikram Venkatram, Diane DiEuliis, and James Giordano, "The COVID Crisis: Implications and Lessons for United States'—and Global—Biosecurity," in *COVID-19: Analysing the Threat*, ed. Ajey Lele and Kritika Roy (New Delhi: Pentagon Press, 2020), 397–405.
10. Patrick Smith and Erin Sone, "Holistic Health and Fitness (H2F): Developing and Maintaining the Whole Soldier," Company Leader (website), October 3, 2020, http://companyleader .themilitaryleader.com/2020/10/03/holistic-health-and-fitness-h2f/.

and protections provided by civilian preparedness and response resources.[11] The delays and, in some cases, failures of diagnostic capabilities had the potential to compromise DoD missions (for example,the USS *Theodore Roosevelt* incident).[12] In light of this overlap between defense health protection and CBRN, requirements should be further examined to establish policy guidelines for how the overlap of biothreats should be best mitigated, given force health protection and chemical and biological defense are functionally and financially distinct silos.

Fortifying DoD preparedness and response capabilities could also serve civilian public health readiness and engagement needs. By fortifying warfighter capabilities to respond to a biological attack, the Department of Defense would also be creating valuable resources for a public health emergency that could compromise national safety and social stability, thus undermining national security. Taken together, these factors highlight the need to develop considerations that more precisely define DoD roles in biothreat scenarios. There is a need for better public health testing; such assessments would have facilitated more accurate predictions of COVID-19's spread within the military and afforded more salient insights into mission-specific group vulnerabilities across the Department of Defense. Gathering these insights could have better enabled the identification and allocation of human resources and services necessary to stabilize and sustain the DoD mission.[13] To delimit extant gaps in DoD readiness, the Department of Defense should focus on medical and other capabilities and tools to identify and treat bioweapon threats and naturally occurring diseases and ecological variables.

Operational International Landscape

As the multinational and multi-locale incidence and future threats of outbreaks increase and the international public health community pursues global health security standards, a number of countries have devoted greater investment in public health capabilities. Such investments include the establishment of biological research laboratories to study high-consequence

11.   Cheryl Pellerin, "DoD Chemical-Biological Program Has a Global Mission," US Department of Defense (DoD) (website), February 3, 2016, https://www.defense.gov/News/News-Stories/Article /Article/649239/dod-chemical-biological-program-has-a-global-mission/.
12.   Diane DiEuliis and Laura Junor, "Ready or Not: Regaining Military Readiness during COVID19," Institute for National Strategic Studies/National Defense University (website), April 10, 2020, https://inss.ndu.edu/Media/News/Article/2145282/ready-or-not-regaining-military -readiness-during-covid19/.
13.   Diane DiEuliis, N. B. Kohls, and James Giordano, "Of Nemesis and Narcissus: Lessons COVID May Provide for Enterprises—and Ethics—of Global Health Promotions and Biosecurity," in *Medicine and Ethics in Times of Corona*, ed. Martin Woesler and Hans-Martin Sass (Zürich: LIT Verlag, 2020), 323–29.

pathogens. While these enterprises are crucial, monitoring these laboratories' Biosafety Level 3 and 4 standards and their enforcement has been inconsistent and inadequate. Biological incidents arising in and emerging from these laboratories' activities can pose threats to US (and allied) force readiness. Department of Defense operational communities uniquely positioned around the globe can offer advantages in building partnerships to assist in creating and maintaining stronger biosecurity programs.[14] The Department of Defense's long-standing support of its Cooperative Threat Reduction Program, established after the fall of the Soviet Union to secure and destroy Soviet weapons of mass destruction, exemplifies such engagement. Historically, the program worked with partner nations to improve biological safety and security.[15] American efforts could benefit from current, and perhaps renewed, cooperative threat reduction relationships to focus on lessons learned from the COVID-19 pandemic.

Global Cooperation and Competition ("Coopetition")

While collaboration is vital, it is equally important to recognize and acknowledge the reality and domains of competition and conflict. As biotechnology becomes a strategic, disruptive endeavor for leveraging hegemony in various domains, countries that invest in dedicated biotechnology programs and industries will be more globally competitive in socioeconomic contexts and applications that could affect national stability and security.

Notably, China's government (through its direct engagement of research and commercial enterprises) has recognized this reality and its present and future implications for power balances and has established broadly funded tactical and strategic efforts toward becoming a global leader in biotechnology.[16] Indeed, China's political system enables the facile enjoining of government and private sectors to generate biomedical

14. Diane DiEuliis and James Giordano, "Balancing Act: Precision Medicine and National Security," *Military Medicine* 187, no. S1 (January-February 2022): 32–35, https://academic.oup.com /milmed/article-pdf/187/Supplement_1/32/42002338/usab017.pdf.

15. US Mission Geneva, "Fact Sheet on DoD Cooperative Threat Reduction (CTR) Program," US Mission to International Organizations in Geneva (website), April 4, 2022, https://geneva .usmission.gov/2022/04/04/fact-sheet-on-dod-cooperative-threat-reduction-ctr-program-biological-threat-reduction -with-partner-countries/.

16. Celeste Chen, Jacob Andriola, and James Giordano, "Biotechnology, Commercial Veiling, and Implications for Strategic Latency: The Exemplar of Neuroscience and Neurotechnology Research and Development in China," in *Strategic Latency: Red, White, and Blue – Managing the National and International Security Consequences of Disruptive Technology*, ed. Zachary S. Davis and Michael Nacht (Livermore, CA: Center for Global Security Research/Lawrence Livermore Press, 2018), 12–32.

instruments and technologies used to supply various countries with medical supplies, thus creating bioeconomic dependencies.[17]

The United States, and the Department of Defense in particular, will need to contend with this competition in the near and long term. Critical to this endeavor is the recognition that previously held constructs of a single global superpower may no longer be realistic or viable. Instead, it will be important to acknowledge the probability of multiple superpower nations, each of which establishes and exerts capability in particular domains. In this light, one possible tactical approach toward strategic stability may be to develop spaces and dimensions of cooperative competition. Within this paradigm, key aspects of national superpowers' capabilities to manifest dimensional hegemony are reliant, at least in part, upon (1) the explicit definition and demarcation of the parameters and extent of these power spaces, (2) other nations' cooperative sharing and contributions to these established interactive aspects of spaces and domains of power, and (3) the reciprocal exchange of goods, resources, and services necessary to sustain these spheres of interactive power to facilitate and fortify multinational interaction.

To do so effectively, however, will require a whole-of-government collaboration and whole-of-nation(s) involvement of the United States (with respect to harnessing intranational resources of the governmental, research, and commercial or economic sectors) and its allies. This coopetition would create an omnibus of bioeconomic capability that could then exert competitive influence in multi-superpower negotiations and global relations.[18]

Conclusion

Advances in biotechnology have broadened the scope of applications—hence, their use could lead to beneficial and harmful effects on public health and, by extension, national stability and security. These purposes, ends, and manifest effects must be addressed explicitly and realistically.

17. Vikram Venkatram and James Giordano, *Strategic Multilayer Assessment Special Topics Paper – The COVID Crisis: Implications for United States—and Global—Biosecurity* (Washington, DC: DoD Strategic Multilayer Assessment Group – Joint Staff/J-3/Pentagon Strategic Studies Group, April 22, 2020); and Vikram Venkatram and James Giordano, *Contagion: COVID-19's Impact on the Operational Environment* (Washington, DC: DoD Strategic Multilayer Assessment Group – Joint Staff/J-3/Pentagon Strategic Studies Group, April 2020).

18. James Giordano, Joseph DeFranco, and L. R. Bremseth, *Radical Leveling and Emerging Technologies as Tools of Non-Kinetic Disruption* (white paper), Invited Perspective Series: Strategic Multilayer Assessment (SMA) – Future of Global Competition & Conflict Effort, ed. Sarah Canna (Boston: NSI Inc., February 2020), 5–11; and John Wallbank and James Giordano, "Heeding Breaches in Biosecurity: Navigating the New Normality of the Post-COVID Future," *Mad Scientist Laboratory* (blog), September 24, 2020, https://madsciblog.tradoc.army.mil/271-heeding-breaches-in-biosecurity-navigating-the-new-normality-of-the-post-covid-future/.

Recently, statements on behalf of the United States at the Biological Weapons Convention have provided hope these issues will be raised to the international level for discussion.[19] Additionally, the COVID-19 pandemic has afforded a sentinel call for the Department of Defense to recognize how the biotechnology preparedness of the United States, its allies, and perhaps competitors is viable and effective and those aspects of organization and activity that need to be improved and secured. The pandemic has revealed potential vulnerability gaps between DoD preparedness for bioweapon threats and the general force—and public—health protection needs that should be further explored to protect readiness in and across all operations of the Department of Defense, governmental, and private-sector biosecurity communities. Ongoing efforts to update and further implement the *National Biodefense Strategy* and the creation of a "Biodefense Posture Review" could likely serve as appropriate opportunities to improve upon biodefense and biosecurity in light of these lessons learned.[20] Toward such ends, the United States and the Department of Defense must modernize biotechnology and health, medicine, and biosecurity to prepare for future potential outbreaks or pandemics in light of the pressing multinational competition emerging on the twenty-first-century global stage.

19.   Bonnie Denise Jenkins, undersecretary for arms control and international security, "Remarks to the 2021 Biological Weapons Convention Meeting of States Parties, Geneva, Switzerland," US Department of State (website), November 22, 2021, https://www.state.gov/remarks-to-the-2021 -biological-weapons-convention-meeting-of-states-parties/.

20.   Lloyd J. Austin III, secretary of defense, to senior Pentagon leadership, commanders of the combatant commands, defense agency and DoD field activity directors, memorandum, "Biodefense Vision," November 1, 2021, https://media.defense.gov/2021/Dec/03/2002903201/-1/-1/0/BIODEFENSE-VISION -FINAL.PDF.

Diane DiEuliis

Diane DiEuliis, PhD, is a distinguished research fellow at the National Defense University. Her research focuses on emerging biological technologies, biodefense, and preparedness for biothreats. Specific topic areas under this broad research portfolio include dual-use life sciences research, synthetic biology, the US bioeconomy, disaster recovery, and behavioral, cognitive, and social science as it relates to important aspects of deterrence and preparedness. DiEuliis has several research grants in progress and teaches various foundational professional military education courses. Prior to joining National Defense University, DiEuliis was deputy director for policy and served as acting deputy assistant secretary for policy and planning in the Office of the Assistant Secretary for Preparedness and Response (ASPR), Department of Health and Human Services. She coordinated policy in support of domestic and international health emergency preparedness and response activities, such as Hurricane Sandy and Ebola outbreaks. She was responsible for the implementation of the Pandemic All-Hazards Preparedness Act, the National Health Security Strategy, and the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE).

James Giordano

James Giordano, PhD, MPhil, is the Pellegrino Center Professor in the Departments of Neurology and Biochemistry; chief of the Neuroethics Studies Program; director of the Cyber-SMART Center's Program in Biotechnology, Biosecurity, and Ethics; chair of the Sub-Program in Military Medical Ethics at Georgetown University; and senior bioethicist of the Defense Medical Ethics Center (DMEC) and adjunct professor of psychiatry at the Uniformed Services University of Health Sciences. Giordano is senior fellow of the Project on Biosecurity, Technology, and Ethics at the US Naval War College; Stockdale Distinguished Fellow of Science, Technology and Ethics at the United States Naval Academy, and senior science advisory fellow of the SMA Branch, Joint Staff, Pentagon. He has previously served as Donovan Senior Fellow for Biosecurity at US Special Operations Command (USSOCOM); as an appointed member of the Neuroethics, Legal and Social Issues Advisory Panel of the Defense Advanced Research Projects Agency (DARPA); as research fellow and task leader of the EU-Human Brain Project Sub-Program on Dual-Use Brain Science; and as an appointed member of the Department of Health and Human Services Secretary's Advisory Committee on Human Research Protections (SACHRP).

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DiEuliis, Diane, and James Giordano. "Balancing Act: Precision Medicine and National Security." *Military Medicine* 187, no. S1 (January–February 2022). https://academic.oup.com/milmed/article-pdf/187 /Supplement_1/32/42002338/usab017.pdf.

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Understanding the Adversary: Strategic Empathy and Perspective Taking in National Security

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ABSTRACT: National security practitioners need to understand the motives, mindsets, and intentions of adversaries to anticipate and respond to their actions effectively. Although some authors have argued empathy helps build an understanding of the adversary, research points to its cognitive component of perspective taking as the more appropriate skill for national security practitioners to have. This article synthesizes previous research on the development and application of perspective taking in analysis and decision making and recommends four ways strategists and practitioners can enhance their ability to gain insight into adversaries.

Do you think Putin is a rational actor?"[1] Jake Tapper's question embodies a tendency to examine foreign policy and policymakers' decisions through a lens of rationality. A more useful starting point might have been, "What is important to Putin?"

Historians Zachary Shore and H. R. McMaster have called for strategic empathy as a tool for understanding adversaries and competitors to enable better prediction in the strategic environment.[2] Defined as stepping into the minds of others, strategic empathy may be essential to understanding the interests of, the motivations of, and the constraints on adversaries. Effective anticipation of and response to adversary actions requires a clear understanding of often ambiguous motives and intentions. Looking into Vladimir Putin's eyes or meeting a competitor face-to-face may have many benefits but

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1. Jake Tapper, "Interview with President Joseph R. Biden," CNN (website), October 11, 2022, 1:53, https://www.cnn.com/videos/politics/2022/10/12/joe-biden-full-exclusive-interview-jake-tapper -tapperctn-sot-vpx.cnn.

2. H. R. McMaster, "Developing Strategic Empathy: History as the Foundation of Foreign Policy and National Security Strategy," George C. Marshall Lecture Series in Military History, *Journal of Military History* 84 (July 2020): 689–97; and Zachary Shore, "A Sense of the Enemy," *Joint Force Quarterly* 65 (April 2012): 32–37.

would not be a particularly effective means to learn motives and intentions if those intentions include deception.[3]

Prior to Shore's and McMaster's calls for strategic empathy, Ralph K. White argued that "realistic empathy" would better enable Western observers to understand Soviet Communist motives and fears.[4] Similarly, William Ickes emphasized empathy's importance even more broadly, asserting that empathy characterizes "the most tactful advisors, the most diplomatic officials, the most effective negotiators, the most electable politicians, the most productive salespersons, the most successful teachers, and the most insightful therapists."[5] Ickes and other psychologists referred to empathy as "everyday mind reading," a simple term for a complex process of inference that combines observation, prior knowledge, memory and reasoning, and self-regulation to understand and relate to others.[6] Claire Yorke advocates for expansive empathy in grand strategy to consider not only the adversary, but also other actors who influence decision making or are impacted by strategic decision-making outcomes.[7]

The social and behavioral sciences' well-established body of research on empathy provides a solid foundation for national security strategists who seek to add strategic empathy to their skill sets. This article advances practitioners' skills for understanding adversaries and competitors and highlights those skills for development in national security education. This paper first synthesizes the literature to explore empathy *by whom, for whom,* and *for what purpose.* Second, previous research on empathy concepts provides direction for the practical application of strategic empathy and points to perspective taking as the key skill. The article then offers recommendations to develop perspective taking as a skill in practitioners, to improve perspective taking through collaboration in teams, and to address errors and uncertainty in perspective taking for strategic purposes. It also acknowledges the unique challenges and opportunities that

3.   Office of the Press Secretary, "Press Conference by President Bush and Russian Federation President Putin," White House: President George W. Bush (website), June 16, 2001, https://georgewbush-whitehouse.archives.gov/news/releases/2001/06/20010618.html.
4.   Ralph K. White, "Communicating with Soviet Communists," *Antioch Review* 27, no. 4 (Winter 1967–68): 458–76.
5.   William Ickes, "Introduction," in *Empathic Accuracy*, ed. William Ickes (New York: Guilford Press, 1997), 2.
6.   Jean Decety and Philip L. Jackson, "The Functional Architecture of Human Empathy," *Behavioral and Cognitive Neuroscience Reviews* 3, no. 2 (June 2004): 71–100.
7.   Claire Yorke, "Is Empathy a Strategic Imperative? A Review Essay," *Journal of Strategic Studies* (2022): 1–21, https://doi.org/10.1080/01402390.2022.2152800.

national security contexts present for the application of perspective taking. Finally, the paper identifies research gaps and challenges.

Empathy by Whom

Shore focused on empathy for understanding adversaries and highlighted its benefits for political scientists, policy-making elites, and intelligence practitioners.[8] Strategic empathy is also needed to work with partners and allies. Advancing a strategy of integrated deterrence, the *2022 National Security Strategy* goes beyond calls for the mere reinvigoration of security relationships and recommends integration with partners and allies to combine capabilities seamlessly.[9] Likewise, the same document notes that partnerships and alliances are its center of gravity.[10] Understanding the interests, priorities, and motives of partners and allies is therefore critical to the confrontation of shared security challenges, which makes strategic empathy a key enabler among leaders across the defense enterprise.

The *2022 National Security Strategy* and *National Defense Strategy* thus expand strategic empathy's relevance for leaders and strategic advisers. Through greater consideration of counterparts' motives, concerns, and intentions, strategic empathy can help leaders identify common ground and opportunities for influence and collaboration. Fortunately, empathy is already rooted in military competency frameworks. In recommendations for strategic advisers, the Center for Army Lessons Learned includes empathy among the principal attributes of model advisers working with foreign counterparts.[11] *Army Leadership and the Profession*, Army Doctrine Publication 6-22, includes empathy as an aspect of a leader's character and sets expectations that Army leaders will show empathy for subordinates within the organization and for

8.   Zachary Shore, "A Sense of the Enemy."
9.   Joseph R. Biden, National Security Strategy: October 2022 (Washington, DC: White House, 2022), 22, https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf.
10.   Lloyd J. Austin III, 2022 *National Defense Strategy for the United States of America* (Washington, DC: Department of Defense, 2022), 2.
11.   *Advising at the Senior Level: Lessons and Best Practices*, Handbook No. 19-06 (Fort Leavenworth, KS: Center for Army Lessons Learned, 2019).

external actors.[12] NATO research on multinational leadership similarly indicates empathy's importance as an interpersonal leadership competency.[13]

These documents provide a picture of whom (observer) empathy is expected in national security: strategic decisionmakers, strategists and strategic advisers, intelligence personnel, and leaders across levels. The breadth and number of practitioners across these categories suggest empathy should be a foundational skill for professional development. Next, empathy for which actors and for what purposes distinguishes strategic empathy from general empathy.

Empathy for Whom and for What

The primary difference between strategic empathy and empathy in general is for *whom* (the actor) and *for what* (the purpose) empathy is given. In empathy for whom, the relationship of the observer with the actor, or target of observation, is key. Organizational contexts for previous research on empathy have centered on health-care professions, psychotherapy, and other behavioral health contexts.[14] In these settings, empathy is viewed in terms of the health-care professional's goal of helping the actor (patient). Empathy is exercised for the actor's (patient's) benefit, and the observer and actor work to advance a shared interest in the well-being of the patient or client. Similarly, interpersonal contexts for empathy have centered on long-standing relationships such as friendships, marriages, or other partnerships. Partners have affiliative motives whereby they engage empathy to care for one another and maintain the relationship. In health-care and interpersonal contexts, shared interests or mutual benefits motivate empathy. By contrast, strategic empathy involves a relationship between an observer and an actor—a competitor, adversary, collaborator, or ally— with diverging interests.

The diverging interests between the actor and the observer result in a second important distinction: empathy *for what*. In strategic empathy, actors and observers may not share interests. Instead, the observer acts in the collective national interest while the actor has distinct or competing interests. The purpose of, or motivation for, strategic empathy therefore starkly contrasts with common conceptualizations of empathy for prosocial or affiliative empathy

12. US Army Training and Doctrine Command (TRADOC), *Army Leadership and the Profession*, Army Doctrine Publication (ADP) 6-22, (Washington, DC: TRADOC, 2019), 2-8, 2-12, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN18529-ADP_6-22-000-WEB-1.pdf.

13. Melinda Key-Roberts et al., "Integrated Framework of NATO Multinational Leadership Competencies," in *Leader Development for NATO Multinational Military Operations*, ed. Yvonne R. Masakowski et al., NATO Human Factors and Medicine Research Task Group 286 (Neuilly-sur-Seine, FR: NATO, September 2022).

14. Pauline Irving and David Dickson, "Empathy: Towards a Conceptual Framework for Health Professionals," *International Journal of Health Care Quality Assurance* 17, no. 4: 212–20, https://doi.org/10.1108/09526860410541531.

purposes. Thus, common understandings of empathy may be misleading. Empathy is highly contextual, and competitive motives can decrease empathy, or competitors may selectively engage different aspects of empathy to meet their goals.[15]

Dimensions of Empathy

Psychological definitions of empathy commonly include three dimensions: empathic concern, experience sharing, and perspective taking.[16] Empathic concern is the component most reflected in the popular understanding of empathy as synonymous with sympathy.[17] This concern is the compassionate aspect of empathy—caring for others' well-being. Empathic concern is an affective and motivational dimension of empathy, as it involves an observers' motivations to help others or to alleviate others' distress. Experience sharing refers to experiencing another's emotional state, which can occur independent of a cognitive understanding of an actor's perspective. An informal way to convey the two emotional dimensions is feeling *for* another (empathic concern) versus feeling *with* another (experience sharing).

Complementing emotional and motivational dimensions, the more cognitive skill of perspective taking is the attempt to understand the thoughts, feelings, and motives of a target without judgment or agreement.[18] As a separate topic of study, perspective taking is also known as *mind reading*, *theory of mind*, *mentalizing*, or *mental state inference*.[19] Perspective taking is the dimension most consistent with McMaster's framing of strategic empathy as "an understanding of the ideology, emotions, and aspirations

15.   Jamil Zaki, "Empathy: A Motivated Account," *Psychological Bulletin* 140, no. 6 (November 2014): 1608; and Adam D. Galinsky et al., "Why It Pays to Get inside the Head of Your Opponent: The Differential Effects of Perspective Taking and Empathy in Negotiations," *Psychological Science* 19, no. 4 (April 2008): 378–84.

16.   Mark H. Davis, "Measuring Individual Differences in Empathy: Evidence for a Multidimensional Approach," *Journal of Personality and Social Psychology* 44, no. 1 (July, 1983): 113–26; and Erika Weisz and Mina Cikara, "Strategic Regulation of Empathy," *Trends in Cognitive Sciences* 25, no. 3 (March 2021): 213–27.

17.   Natalie H. Longmire and David A. Harrison, "Seeing Their Side versus Feeling Their Pain: Differential Consequences of Perspective-Taking and Empathy at Work," *Journal of Applied Psychology* 103, no. 8 (August 2018): 894–915.

18.   Sharon K. Parker, Paul W. B. Atkins, and Carolyn M. Axtell, "Building Better Workplaces through Individual Perspective Taking: A Fresh Look at a Fundamental Human Process," in *International Review of Industrial and Organizational Psychology*, 23, ed. Gerard P. Hodgkinson and J. Kevin Ford (Hoboken, NJ: Wiley-Interscience, 2008), 149–96.

19.   Zaki, "Empathy," 1609; and Julio C. Mateo et al., *Framework for Understanding Intercultural Perspective Taking in Operational Settings* (Fort Belvoir, VA: Army Research Institute for the Behavioral and Social Sciences, 2016), 3.

that drive and constrain other actors."[20] Thus, strategic empathy is best understood as perspective taking rather than the empathy construct as a whole.

According to behavioral and neuroscientific findings, the three dimensions of empathy are related but distinct. They may be engaged simultaneously, for example, when a parent observes his or her child's discomfort during an illness. The parent cognitively understands the child's discomfort based on his or her own prior experience with those symptoms, often adopts the child's emotional distress, at least temporarily, and attempts to alleviate the discomfort.

Alternatively, empathy dimensions may be engaged separately. For example, a basketball fan may understand the disappointment that a fan of a rival team experiences when his or her team loses an important playoff game. The observer, however, might not personally feel a rival fan's disappointment, concern for that fan, or hope the rival team will win the next game to reduce his or her disappointment. Thus, perspective taking does not imply compassionate concern, though it can accompany it under some conditions.

The distinction between cognitive and emotional dimensions of empathy matters because engaging different dimensions of empathy has differing outcomes. In contexts where the observer's goal is to help the actor, experience sharing may benefit the actor but may produce distress in the observer. For example, a health-care professional who engages in experience sharing with her patient may be better able to assess the patient and gain his compliance with a treatment protocol, but she is more likely to experience compassion fatigue as a result.[21]

In contrast, perspective taking is also demanding but can benefit observers. In a business simulation, negotiators who engaged in perspective taking, but not empathic concern or experience sharing, were more likely to satisfy self-interests and find opportunities for joint solutions.[22] Even without the emotional demands of concern for the other, perspective taking remains cognitively demanding, and when given a choice, observers often avoid it.[23] Avoiding perspective taking and other dimensions of empathy, however, does not remove the need

20.   H. R. McMaster, "The Retrenchment Syndrome: A Response to 'Come Home, America?,'" *Foreign Affairs* 99, no. 4 (July-August 2020): 183–86.
21.   Weisz and Cikara, "Strategic Regulation of Empathy."
22.   Adam D. Galinsky et al., "Why It Pays to Get inside the Head of Your Opponent: The Differential Effects of Perspective Taking and Empathy in Negotiations," *Psychological Science* 19, no. 4 (April 2008): 378–84.
23.   C. Daryl Cameron et al., "Empathy Is Hard Work: People Choose to Avoid Empathy because of Its Cognitive Costs," *Journal of Experimental Psychology: General* 148, no. 6 (June 2019): 962–76.

to understand others' viewpoints, and alternative routes to understanding tend to be less accurate.

Who Has Empathy?

Whether defining empathy and its components as a skill or a trait, research has explored what individual characteristics are associated with higher levels of empathy. Although findings are mixed, Western observers may be at a disadvantage. In several studies, East Asian observers have repeatedly shown an advantage over US observers in correcting for egocentric biases that interfere with perspective taking.[24] Egocentric biases cause observers to project their own views onto others.[25] For national security strategists and practitioners, egocentrism and its cultural cousin, ethnocentrism, produce mirror imaging, in which observers project personal values, assumptions, and intentions onto others, thereby blinding themselves to the drivers of adversary decisions.[26]

The theory of mind that enables perspective taking emerges around the same time in children cross-culturally, according to comparisons between children in Beijing and age-matched children in North America.[27] Thus, the US deficit in correcting for egocentrism emerges later in the lifespan, suggesting it has sociocultural origins. If barriers to perspective taking are learned in adolescence or adulthood, then perhaps education can decrease them.

Turning to gender, traditional stereotypes suggest women show greater empathy than men, but scientific literature only partially supports this belief.[28] Some studies have found that women are higher in the component of empathic concern, but research has generally not found gender

24.   Klaus Kessler et al., "A Cross-Culture, Cross-Gender Comparison of Perspective Taking Mechanisms," *Proceedings of the Royal Society B: Biological Sciences* 281, no. 1785 (June 2014), 7–8, https://doi.org/10.1098/rspb.2014.0388; Shali Wu et al., "How Culture Influences Perspective Taking: Differences in Correction, Not Integration," *Frontiers in Human Neuroscience* 7 (December 2013): https://doi.org/10.3389/fnhum.2013.00822; and Shali Wu and Boaz Keysar, "The Effect of Culture on Perspective Taking," *Psychological Science* 18, no. 7 (July 2007): 600–606.
25.   Nicholas Epley, "Solving the (Real) Other Minds Problem," *Social and Personality Psychology Compass* 2, no. 3 (May 2008): 1455–74, https://doi.org/10.1111/j.1751-9004.2008.00115.x; and Rachel Karniol, "Egocentrism versus Protocentrism: The Status of Self in Social Prediction," *Psychological Review* 110 (July 2003): 564–80.
26.   Montgomery McFate, "The Military Utility of Understanding Adversary Culture," *Joint Force Quarterly* 38, no. 3 (July 2005): 42–48.
27.   Louis Moses, "Executive Functioning and Children's Theories of Mind," in *Other Minds: How Human Bridge the Divide between Self and Others*, ed. Bertram F. Malle and Sara D. Hodges (New York: Guilford Press, 2005), 11–25.
28.   Williams Ickes, Paul R. Gesn, and Tiffany Graham, "Gender Differences in Empathic Accuracy: Differential Ability or Differential Motivation?," *Personal Relationships* 7, no. 1 (March 2000): 95–109.

differences in the accuracy of perspective taking or other social judgment.[29] For example, men and women perform equally on empathy-related tasks when rewarded with monetary incentives.[30] In other words, baseline motivation, not skill, likely determines gender disparities.

Other traits and abilities are associated with higher empathy. Individuals with higher general cognitive ability and the traits of openness, psychological stability (low narcissism), and tolerance for ambiguity tend to have greater judgment accuracy and perspective taking.[31] Traits such as extraversion also relate to empathy but may depend on whether the observer can judge from an interpersonal interaction, eliciting information from an actor in conversation.[32]

Overlap with Other Skill Sets

Empathy overlaps with other skill sets required by effective leaders and strategic advisers, such as emotional intelligence, cross-cultural competence, and systems thinking. This set is not comprehensive but reflects skills identified in guidance for professional military education. Although research on empathy has sometimes disaggregated its components, at other times research has examined empathy as a holistic construct. As a result, the sections below use the cited research's terminology.

Emotional intelligence is one superordinate construct that encompasses empathy. Daniel Goleman's definition of emotional intelligence includes personal and social competence, with empathy as a part of social competence.[33] He distinguishes recognizing emotions in others from managing relationships because seeing and feeling others' emotions (recognizing) may not imply knowing how to respond (managing). Empirical research has shown an association between emotional intelligence and greater empathic concern and perspective taking, but correlations are small enough to maintain distinctions among these constructs.[34] Other emotional intelligence models

29.   Richard A. Lippa and Joshua K. Dietz, "The Relation of Gender, Personality, and Intelligence to Judges' Accuracy in Judging Strangers' Personality from Brief Video Segments," *Journal of Nonverbal Behavior* 24, no. 1 (March 2000): 25–43.
30.   Kristi J. K. Klein and Sara D. Hodges, "Gender Differences, Motivation, and Empathic Accuracy: When It Pays to Understand," *Personality and Social Psychology Bulletin* 27, no. 6 (June 2001): 720–30.
31.   David C. Funder, "Accurate Personality Judgment," *Current Directions in Psychological Science* 21, no. 3 (June 2012): 177–82; and Judith A. Hall, Susan A. Andrzejewski, and Jennelle E. Yopchick, "Psychosocial Correlates of Interpersonal Sensitivity: A Meta-Analysis," *Journal of Nonverbal Behavior* 33, no. 3 (September 2009): 149–80, https://doi.org/10.1007/s10919-009-0070-5.
32.   Hall et al., "Interpersonal Sensitivity," 9.
33.   Daniel Goleman, Richard Boyatzis, and Annie McKee, *Primal Leadership: Unleashing the Power of Emotional Intelligence* (Boston: Harvard Business Review Press, 2013); and Daniel Goleman, *Emotional Intelligence: Why It Can Matter More than IQ* (New York: Bantam Books, 1994).
34.   Longmire and Harrison, "Seeing Their Side," 903–4.

similarly indicate empathy is related to, but distinguishable from, emotional intelligence as an ability.[35]
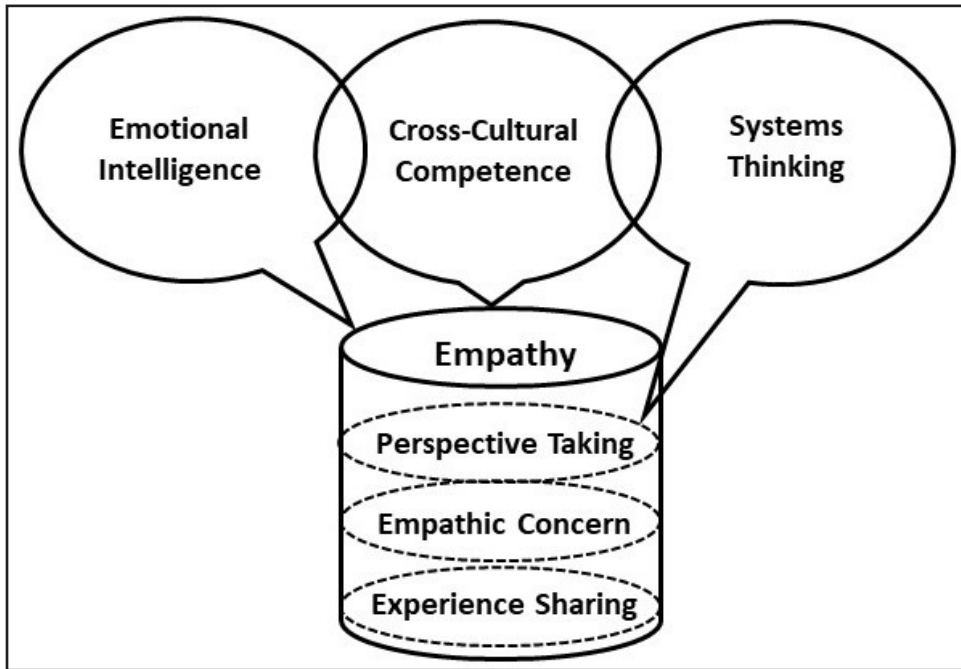
Figure 1. Relationships among empathy dimensions and related constructs

Cross-cultural competence is a second construct that includes empathy. By identifying characteristics Army leaders need to operate abroad, my colleagues and I noted the contributions of empathy (motivation) and perspective taking (a skill) to intercultural effectiveness.[36] Building on other research that identified cultural empathy as a multicultural personality trait, findings in one study showed cultural empathy was related to proficiency in foreign languages and interactions with foreign populations among Army soldiers and officers.[37] Further, higher levels of cultural empathy were associated with greater cultural intelligence and intercultural efficacy, a self-reported indicator of effectiveness in cross-cultural interactions.

A third superordinate construct, systems thinking, is a critical strategic leadership skill, and many systems thinking models explicitly include

35.   John D. Mayer, Peter Salovey, and David R. Caruso, "Emotional Intelligence: New Ability or Eclectic Traits?," *American Psychologist* 63, no. 6 (September 2008): 503–17.

36.   Allison Abbe, Lisa M. V. Gulick, and Jeffrey L. Herman, *Cross-Cultural Competence in Army Leaders: A Conceptual and Empirical Foundation*, Study Report 2008-01 (report, Arlington, VA: US Army Research Institute for the Behavioral and Social Sciences, October 2007).

37.   Allison Abbe, David S. Geller, and Stacy L. Everett, *Measuring Cross-Cultural Competence in Soldiers and Cadets: A Comparison of Existing Instruments*, Technical Report 1276 (Arlington, VA: US Army Research Institute for the Behavioral and Social Sciences, November 2010).

perspectives and perspective taking, empathy's cognitive dimension.[38] These models recognize that, in open systems, actors' and stakeholders' viewpoints differ based on their various positions within the system, and systems thinking requires an understanding of these diverging perspectives. Therefore, perspective taking would enable observers to identify more relationships and causal links in a complex system through adopting different lenses. For example, when planning interventions in the complex system of human migration following conflict or natural disasters, adopting the perspective of different actors in the system, including the migrants themselves, their national political leaders, and human-trafficking operators, would improve an observer's understanding of the dynamics driving behavior.

One study found a relationship between systems thinking and empathy on self-report measures.[39] As self-report may not be the most appropriate means to measure systems thinking, replication with alternative methods would be beneficial. Consistent with advocates of strategic empathy, some researchers have recommended teaching systems thinking by framing problems within learners' sociocultural contexts and asking learners to incorporate perspectives and historical backgrounds, among other considerations.[40]

These three superordinate constructs include other skills and abilities that potentially overlap beyond empathy alone, but research has rarely measured them together. One exception is research distinguishing cross-cultural competence (using the Cultural Intelligence Scale) from emotional intelligence.[41] Relative to emotional intelligence, systems thinking relies more on the cognitive dimension of empathy, perspective taking, than on emotional and motivational aspects of empathy. In comparison, measures of cross-cultural competence tend to include the dimensions of empathic concern and perspective taking.

The three skill sets of systems thinking, cross-cultural competence, and emotional intelligence increasingly appear in joint professional military

38.   Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Currency, 1990); Douglas E. Waters, "Understanding Strategic Thinking and Developing Strategic Thinkers," *Joint Force Quarterly* 63, no. 2 (April 2019): 113–19; Ross D. Arnold and Jon P. Wade, "A Definition of Systems Thinking: A Systems Approach," *Procedia Computer Science* 44 (2015): 669–78; Derek Cabrera and Laura Cabrera, *Systems Thinking Made Simple: New Hope for Solving Wicked Problems*, 2nd ed. (New York: Odyssean Press, 2018); and Jacob R. Grohs et al., "Assessing Systems Thinking: A Tool to Measure Complex Reasoning through Ill-Structured Problems," *Thinking Skills and Creativity* 28 (March 2018): 110–30.
39.   Adam C. Davis et al., "Systems Thinkers Express an Elevated Capacity for the Allocentric Components of Cognitive and Affective Empathy," *Systems Research and Behavioral Science* 35, no. 2 (2018): 216–29.
40.   Julio C. Mateo et al., *Systems Analyses of Real Events Practical Exercise Users Guide*, ARI-RP 2020-01 (Fort Belvoir, VA: US Army Research Institute for the Behavioral and Social Sciences, October 2019).
41.   Thomas Rockstuhl et al., "Beyond General Intelligence (IQ) and Emotional Intelligence (EQ): The Role of Cultural Intelligence (CQ) on Cross-Border Leadership Effectiveness in a Globalized World," *Journal of Social Issues* 67, no. 4 (December 2011): 825–40.

education guidance, providing at least indirect demand for the development of empathy in military officers. *The Joint Chiefs of Staff Vision and Guidance for Professional Military Education and Talent Management* (*Joint Chiefs of Staff Vision*) explicitly calls for the development of greater emotional intelligence in professional military education, stating,

> All graduates should possess critical and creative thinking skills, *emotional intelligence*, and effective written, verbal, and visual communications skills to support the development and implementation of strategies and complex operations.[42]

Calls for cross-cultural competence and systems thinking are less explicit but implied in Joint professional military education guidance. For example, the *Joint Chiefs of Staff Vision* notes the importance of cultural perspectives:

> We shall foster an environment where students are inspired to master the fundamentals of the art and science of war in an atmosphere and culture that encourages intellectual curiosity, stimulates critical thinking, rewards creativity and risk-taking, and *understands the value of multiculturalism and allied perspectives*.[43]

The Officer Professional Military Education Policy Implementation Manual recommends that learning outcomes include the evaluation of alternative perspectives, the synthesis of strategic thinking, and the understanding of ally and partner interests.[44] These outcomes reflect aspects of systems thinking and cross-cultural competence and support these attributes in joint and multinational leadership.

Is Empathy the Appropriate Construct?

As a multifaceted concept, the discussion of empathy in national security contexts risks confusion. One common misperception is that empathy only denotes empathic concern. Because popular writing on empathy has focused on its benefits for interpersonal and social contact, observers may assume that the term *empathy* is interchangeable with *compassion* or *sympathy* and

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42. Italics added, Joint Chiefs of Staff (JCS), *Developing Today's Joint Officers for Tomorrow's Ways of War: The Joint Chiefs of Staff Vision and Guidance for Professional Military Education & Talent Management* (Washington, DC: JCS, 2020), 4, https://www.jcs.mil/Portals/36/Documents/Doctrine/education/jcs_pme_tm_vision.pdf?ver=2020-05-15-102429-817.
43. Italics added, *Developing Today's Joint Officers*, 7.
44. JCS, *Outcomes-Based Military Education Procedures for Officer Professional Military Education*, CJCS Manual 1810.01F (Washington, DC: JCS, April 2022), appendix A, enclosure G.

may overlook its cognitive component.[45] Another misperception is that emotions are in opposition to rational military thought.[46] Sympathy for counterparts or adversaries can indeed be problematic among senior military leaders and advisers if it narrows the focus of decisionmakers or blinds them to their own interests.[47] Empathic concern also has certain disadvantages and limitations.[48]

The cognitive dimension of empathy—perspective taking—better fits the meaning of strategic empathy, as strategic empathy requires neither sharing another's emotions nor tending to another's well-being. It may therefore be appropriate to set aside the term *empathy* in favor of *perspective taking*. Strategic perspective taking may allow strategists and practitioners to maintain appropriate emotional distance while enabling the frame shifting required to understand an adversary's decision space.

In addition to the contrast discussed above, strategic empathy differs from the vast psychological research on empathy in at least two other important respects. First, the observer's physical and temporal distance from the adversary limits access and opportunities to collect accurate information. For example, the analyst or practitioner cannot see or hear Putin's live reactions to updates on operations in Ukraine. Attempts at perspective taking without accurate or current information reduces egocentrism but does not increase accuracy.[49]

Second, the observer acts in the collective national interest or on a strategic decisionmaker's behalf. As a result, consequences of mistakes reach far beyond observers and actors. As Shore argued, strategic empathy is a high-stakes endeavor, and an inaccurate understanding of adversary or competitor motivations can be catastrophic.[50] These contextual differences

45.   Goleman, *Emotional Intelligence*, 96; William Smiley Howell, *The Empathic Communicator* (Prospect Heights, IL: Waveland Press, 1982); and J. D. Trout, *Why Empathy Matters: The Science and Psychology of Better Judgment* (New York: Penguin Books, 2009).

46.   Samuel Zilincik, "The Role of Emotions in Military Strategy," *Texas National Security Review* 5, no. 2 (Spring 2022): 11–25, http://dx.doi.org/10.26153/tsw/24029.

47.   Christian Tripodi, "Peacemaking through Bribes or Cultural Empathy? The Political Officer and Britain's Strategy towards the North-West Frontier, 1901–1945," *Journal of Strategic Studies* 31, no. 1 (February 2008): 123–51.

48.   Jean Decety, "Why Empathy Is Not a Reliable Source of Information in Moral Decision Making," *Current Directions in Psychological Science* 30, no. 5 (October 2021): 425–30.

49.   Tal Eyal, Mary Steffel, and Nicholas Epley, "Perspective Mistaking: Accurately Understanding the Mind of Another Requires Getting Perspective, Not Taking Perspective," *Journal of Personality and Social Psychology* 114, no. 4 (April 2018): 547–71.

50.   Zachary Shore, *A Sense of the Enemy: The High-Stakes History of Reading Your Rival's Mind* (New York: Oxford University Press, 2014), 2.

and risks suggest a distinction between perspective taking and empathy in strategic and competitive contexts.

Shore framed strategic empathy as interpreting pattern breaks—knowing when a change in an adversary's actions signals an important shift. A single shift can nullify past predictions and large quantities of information. This view requires background knowledge of adversary behavior to recognize when the pattern has broken and highlights the importance of historical knowledge. Whereas other empathy concepts focus more on granular, in-the-moment emotion sharing or concern, strategic empathy draws from a broader range of time and information sources to make inferences. Knowing another person's mind is difficult even with routine personal interaction. It is all the more difficult from a distance and requires supporting expertise—including historical knowledge and familiarity with the strategic culture. In applying strategic empathy to China's actions within the first island chain, Major General Joel B. Vowell and Colonel Craig L. Evans argue for an understanding of geography, history, and domestic politics.[51]

Of course, applying empathy in high-stakes observations also requires accuracy. Measures of empathy and perspective taking often focus on motivation rather than skill and neglect accuracy. In recent years, intelligence analysis has pursued greater predictive accuracy and has applied lessons from the Good Judgment Project. Funded by the Intelligence Advanced Research Projects Activity, research on forecasting demonstrates the need for feedback, measurement, and accountability to improve judgment.[52] The same necessity applies to empathy. Practitioner judgments of policymaker motives and mindsets should be assessed for how well they correspond to new facts and information as they emerge.

Personality psychologist David C. Funder has theorized that some actors are more difficult to judge than others.[53] For example, judgments of Putin are likely more accurate than those of Kim Jong-Un, due to the relative volume of information available to Western observers and due to these leaders' relative tenure in power. Empathy and perspective taking depend on the information quantity and quality an observer can draw from. Earlier research on empathic accuracy relied on ground-truth knowledge by using interactions between

51. Joel B. Vowell and Craig L. Evans, "Operationalizing Strategic Empathy: Best Practices from Inside the First Island Chain," *Strategy Bridge* (website), November 16, 2022, https://thestrategybridge.org/the-bridge/2022/11/16/operationalizing-strategic-empathy.

52. Philip E. Tetlock and Dan Gardner, *Superforecasting: The Art and Science of Prediction* (New York: Random House, 2016); and Welton Chang and Philip E. Tetlock, "Rethinking the Training of Intelligence Analysts," *Intelligence and National Security* 31, no. 6 (February 2016): 903–20.

53.   Funder, "Accurate Personality Judgment," 178.

pairs in a laboratory.[54] In this case, researchers could compare reports from the actors themselves with the observers' assessments to establish ground truth. In national security settings, ground truth may be more difficult to obtain, and uncertainty is ever-present. Feedback is still possible in some forms, however, and careful analysis of a leader's past foreign policy decisions can be compared with his or her contemporaneous judgments, analyses, and estimates.

Improving Perspective Taking

The tendency to view adversaries and competitors in narrow and simplistic terms has been prominent in US approaches to counterinsurgencies during and since the Vietnam War. Although unmatched in conventional warfare, the United States has been slow to recognize and respond to adversary and partner patterns in irregular warfare and counterinsurgency.[55] For example, simplistic assumptions about the Afghan security forces and the failure to anticipate their rapid collapse during the withdrawal of US troops from Afghanistan demonstrate a misunderstanding of actors.[56] Anchoring on simplistic perceptions can be difficult to overcome, especially with limited access to information. Without timely insights around a pattern break or opportunities to talk directly with decisionmakers, attempts at perspective taking can exacerbate an observer's reliance on stereotypes.[57]

While perspective taking is not a panacea, research supports cautious optimism about perspective taking and its careful application. In addressing realistic empathy, White proposed a useful process applicable to perspective taking that provides 10 steps for practitioners to apply in their roles. Immersion in the available evidence and the application of systematic methods are among the first steps.[58] To advance and expand upon White's approach, I offer four recommendations here for practitioners and national

54.   William Ickes, *Everyday Mind Reading: Understanding What Other People Think and Feel* (New York: Prometheus Books, 2003).

55.   Thomas X. Hammes, *The Sling and the Stone: On War in the 21st Century* (Minneapolis, MN: Zenith Press, 2006); and John A. Nagl and Brian M. Burton, "Thinking Globally and Acting Locally: Counterinsurgency Lessons from Modern Wars – A Reply to Jones and Smith," *Journal of Strategic Studies* 33, no. 1 (February 2010): 123–38, https://doi.org/10.1080/01402391003603615.

56.   Jonathan Schroden, "Lessons from the Collapse of Afghanistan's Security Forces," *CTC Sentinel* 14, no. 8 (October 2021): 45–61.

57.   Nicholas Epley and Eugene M. Caruso, "Perspective Taking: Misstepping into Others' Shoes," in *Handbook of Imagination and Mental Simulation*, ed. Keith D. Markman, William M. P. Klein, and Julie A. Suhr (New York: Taylor and Francis Group, 2009), 295–309.

58.   Ralph K. White, "Empathizing with Saddam Hussein," *Political Psychology* 12, no. 2 (1991): 291–308.

security educators based on the evidence above and end with avenues for further research.

First, national security practitioners should pursue perspective taking rather than empathy's experience sharing and concern components. Perspective taking is empathy's most fruitful dimension for national security purposes, though with some qualifications. The benefits of perspective taking accrue with a healthy line of demarcation between personal and other interests. In other words, taking another perspective is a temporary state. Perspective taking is complete when a practitioner recognizes another person's view and then shifts back to his or her own view. This skill requires shifting in and out of others' perspectives—not adopting them— and aligns with developmental approaches to systems thinking in which an observer views the system from the perspectives of multiple actors. It is not enough to take on a different actor's point of view. Instead, systems thinking and perspective taking occur when practitioners move among viewpoints readily and can distinguish the differences and commonalities between them.

Second, practitioners should use feedback to improve their perspective taking.[59] In other settings, training has improved empathy, especially when that training included not only direct instruction, but also modeling, practice, and feedback.[60] In one study of forecasting, training to improve forecasting provided ongoing feedback on participants' accuracy, and the training effects exceeded the effect of participants' general cognitive ability, regardless of the training technique.[61] These findings are consistent with the large body of research on trainable cognitive skills and indicate that practice and feedback are key to improvement.[62]

In education, historical accounts can help guide perspective-taking development, where sufficient information is available to indicate actors' motives, emotions, and decision making. Educators could ask learners to assess actors' mental states at different points in the scenario based on the information available to an observer at the time. Providing learners feedback on how well their assessments align with information revealed later

59.   Debby Damen et al., "Lifting the Curse of Knowing: How Feedback Improves Perspective-Taking," *Quarterly Journal of Experimental Psychology* 74, no. 6 (June 2021): 1054–69.
60.   Emily Teding van Berkhout and John M. Malouff, "The Efficacy of Empathy Training: A Meta-Analysis of Randomized Controlled Trials," *Journal of Counseling Psychology* 63, no. 1 (January 2016): 32–41.
61.   Welton Chang et al., "Developing Expert Political Judgment: The Impact of Training and Practice on Judgmental Accuracy in Geopolitical Forecasting Tournaments," *Judgment and Decision Making* 11, no. 5 (September 2016): 509–26.
62.   Anders K. Ericsson, ed., *Development of Professional Expertise: Toward Measurement of Expert Performance and Design of Optimal Learning Environments* (New York: Cambridge University Press, 2009), 418.

or from corroborating sources can improve accuracy in perspective taking over time. As noted, however, judgments of motives and mindsets may involve greater uncertainty than predicting specific actions or quantitative outcomes, as in forecasting tournaments. When ground-truth feedback on perspective taking is impracticable, research indicates reading literary fiction can build empathy.[63]

Third, evidence points to the use of collaboration to improve perspective taking. A single leader, practitioner, negotiator, policymaker, or social scientist is unlikely to have sufficient insight and expertise to understand adversary or partner perspectives and forecast their actions. Rather, judgment of mindsets and motives must proceed as a team effort. As White recommended, drawing on others' expertise and consulting the best-informed observers improves the accuracy of judgments.[64] Perspective-enhancing teams may be an informal set of advisers or belong to a formal organizational structure (for example, the staff members who inform policy within the National Security Council or the Office of the Undersecretary of Defense for Policy).

Teams outperform individuals at judgment when members make independent contributions and reconcile diverging viewpoints together.[65] To ensure diverging viewpoints, teams should include diverse backgrounds. Shore and McMaster have recommended a prominent role for historians. Intelligence professionals, social scientists, and other experts on patterns and anomalies should also have a role. The higher the stakes of the decision or observations are, the more important it is to gather and reconcile insights from a range of experts and information sources.

Fourth, researchers recommend maintaining humility and recognizing uncertainty.[66] People often cannot predict even their own reactions. They often overestimate the extent to which they will act ethically and in their own interests in the future (for example, regarding new year's resolutions and adhering to health advice).[67] Strategists and practitioners should therefore

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63.   Raymond A. Mar, Keith Oatley, and Jordan B. Peterson, "Exploring the Link between Reading Fiction and Empathy: Ruling Out Individual Differences and Examining Outcomes," *Communications* 34, no. 4 (December 2009): 407–28; and Nicholas Buttrick, Erin C. Westgate, and Shigehiro Oishi, "Reading Literary Fiction Is Associated with a More Complex Worldview," *Personality and Social Psychology Bulletin* (July 2022), https://doi.org/10.1177/01461672221106059.
64.   White, "Empathizing with Saddam."
65.   Michael Horowitz et al., "What Makes Foreign Policy Teams Tick: Explaining Variation in Group Performance at Geopolitical Forecasting," *Journal of Politics* 81, no. 4 (October 2019): 1388–1404; and James Surowiecki, *The Wisdom of Crowds* (New York: Anchor Books, 2005).
66.   White, "Empathizing with Saddam," 295, 302.
67.   Leaf Van Boven and George Loewenstein, "Empathy Gaps in Emotional Perspective Taking," in *Other Minds: How Humans Bridge the Divide between Self and Others*, ed. Bertram Malle and Sara D. Hodges (New York: Guilford Press, 2005), 284–97.

not be expected to judge and anticipate others' motives any more accurately than their own. Shifting perspectives should occur with a recognition that errors are likely to happen, and furthermore, that they are often predictable, based on the practitioner's own views. Drawing on former Secretary of State Robert S. McNamara's retrospective insights into conflict in Vietnam, James Blight and Janet Lang argued that curiosity and the avoidance of moral simplicity address this ambiguity.[68] Decision-making processes should also include a phase that explicitly articulates probable misperceptions, both one's own and the adversary's.[69]

Research Gaps and Challenges for Further Research

The literature shows several gaps research can address to enhance the application of perspective taking for practitioners. First, researchers should more consistently distinguish perspective taking from the broader concept of empathy. Empirical research has demonstrated that the two skills have different implications for competitive contexts, but the literature has not consistently distinguished them, and measures of perspective taking are limited.[70] Research continues to rely on self-report measures of perspective taking, which may capture perspective-taking motivation rather than perspective taking as a skill.[71] One meta-analysis showed that empathy training increased objective measures of empathy (test scores) to a greater degree than self-report measures of empathy (ratings).[72] Although this research did not clearly distinguish empathic concern from perspective taking, its findings support the notion that perspective taking may be best developed as a skill rather than as a trait.

Another important research gap is the development and application of perspective taking. Although much research has examined the developmental aspects of acquiring the perspective-taking ability in children, limited empirical research has examined how adult practitioners can develop and implement it. Perspective taking is a complex cognitive skill for which higher education, professional training and education, job experiences, and self-development all likely play a role, but little research

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68. James G. Blight and Janet M. Lang, "Lesson Number One: Empathize with Your Enemy," *Peace and Conflict* 10, no. 4 (2004): 349–68.
69. White, "Empathizing with Saddam," 294–95.
70. Galinsky et al., "Why It Pays," 383.
71. Mateo et al., *Intercultural Perspective Taking*, 17–18.
72. Teding van Berkhout and Malouff, "Efficacy of Empathy Training," 7.

has examined how to develop the perspective-taking skill in adults and in national security contexts and conditions.

Shore and McMaster argued for two propositions that can be empirically tested: first, that strategic empathy better enables decisionmakers to predict and respond to the behavior of adversaries; and second, that the study of history is a central route to strategic empathy, relative to more quantitative data-based approaches.[73] These propositions raise important questions about the relative contributions of differing approaches. What, if anything, does strategic empathy or perspective taking add to national security practice and analysis that is not already in use? What is its incremental value— or does it contrast with existing approaches? Further research may provide new avenues for professional development in civilian education, military, and intelligence education. For example, amid growing emphasis on data analytics and science, technology, engineering, and mathematics disciplines, to what extent should programs maintain or increase time for history, literary fiction, and other humanities disciplines?

To develop strategic perspective taking, further research should also examine how to assess the perspective-taking skill. Performance measures for empathic accuracy focus on reading emotions, which may not fully capture the complexity of reading and inferring motives and cognition.[74] The study of perspective taking has made important advances through using controlled experiments, thereby manipulating perspective taking to test its causal effects.[75] Laboratory experiments of spatial or visual perspective taking are similarly notable for their contributions to the literature.[76] Although neither method readily lends itself to direct application for national security strategy, researchers can leverage them to understand how to develop and identify the perspective-taking skill among national security professionals.

In a third challenge, I renew Valerie M. Hudson's calls for interdisciplinary collaboration among international relations scholars and cross-cultural psychologists.[77] Political psychology has contributed key insights into realistic empathy and continues to thrive as a discipline but has room for growth in its application to foreign policy analysis. Greater connection would

73.   Shore, "A Sense of the Enemy," 5; and McMaster, "Developing Strategic Empathy," 695.

74.   Ickes, *Everyday Mind Reading*, 61.

75.   Eyal et al., "Perspective Mistaking," 567.

76.   Nicholas Epley, Carey K. Morewedge, and Boaz Keysar, "Perspective Taking in Children and Adults: Equivalent Egocentrism but Differential Correction," *Journal of Experimental Social Psychology* 40 (November 2004): 760–68.

77.   Valerie M. Hudson and Martin W. Sampson III, "Culture Is More Than a Static Residual: Introduction to the Special Section on Culture and Foreign Policy," *Political Psychology* 20, no. 4 (December 1999): 667–75.

benefit both fields of study. Such collaborations may inspire methodological diversity and yield advances in the development of perspective skills for national security contexts.

Conclusion

This article began with the question of Putin's rationality in the context of tactical nuclear weapons. Asking what is important to Putin potentially opens the aperture and might be followed with these questions: What means does Putin consider available to attain his priorities? How does he define success and failure, and what time span does he talk about most? How have his successes, failures, and personal and professional experiences shaped his views of risk? These questions may not differ dramatically from questions that other approaches might raise. Instead, the difference for strategic perspective taking and empathy is in an observer's recognition that personal cultural lenses and experiences may shape his or her answers, that the answers may require more information than is readily available, and that answers should be informed and adjusted by others with differing sources of information. If national security practitioners can maintain that recognition and a willingness to update their analysis as new input becomes available, they will likely find perspective taking an important addition to their toolkits.

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Taiwan's Food Resiliency—or Not—in a Conflict with China

Gustavo F. Ferreira and Jamie A. Critelli

ABSTRACT: The US military, intelligence, and diplomatic communities have overlooked a key vulnerability in their assessment of a potential military conflict between China and Taiwan—Taiwan's growing reliance on agricultural imports and its food stocks (except for rice) that could endure trade disruptions for only six months. This article assesses Taiwan's agricultural sector and its ability to feed the country's population if food imports and production are disrupted; identifies the food products that should be prioritized in resupply operations, based on Taiwan's nutritional needs and domestic food production; and outlines the required logistical assets. These findings underscore the urgency for US military planners to develop long-term logistical solutions for this complex strategic issue.

Keywords: China, Taiwan, food insecurity, resiliency, naval blockade

Recent increases in global food prices following the COVID-19 pandemic, crop failures in key producing countries, and the war in Ukraine have reminded many countries about the risks associated with dependency on food imports to feed their populations. As Taiwan industrialized its economy and developed key manufacturing sectors (such as the semiconductor sector), it also allowed structural risks to grow within its food supply system. Due to limited arable land and rapid urbanization, Taiwan's agricultural sector has remained relatively small. Consequently, the country's ability to feed itself has decreased over the years, and in 2018, it ranked as the 16th-largest agricultural importer, with food imports covering over two-thirds of its annual caloric intake.[1]

This import dependency varies across products and is remarkably high for feed grains and oilseeds (such as wheat, soybeans, or corn), commodities primarily consumed by Taiwan's food-processing and livestock

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1. "Taiwan – Country Commercial Guide: Agricultural Sectors," International Trade Administration/U.S. Department of Commerce (website), September 16, 2022, https://www.trade.gov/country-commercial-guides/taiwan-agricultural-sectors; Alex Beckman, "Opportunities for U.S. Agricultural Exports in Taiwan – International Agricultural Trade Report, Foreign Agricultural Service/U.S. Department of Agriculture (website), April 8, 2019, https://www.fas.usda.gov/data/opportunities-us-agricultural-exports-taiwan; and Troy Lai and Lucas Blaustein, "Taiwan: Taiwan Confident in Food Stocks as COVID-19 Disrupts International Trade," *Attaché Report* (GAIN), Foreign Agricultural Service/U.S. Department of Agriculture (website), April 14, 2020, https://www.fas.usda.gov/data/taiwan-taiwan-confident-food-stocks-covid-19-disrupts-international-trade.

sectors. The United States is the leading supplier of food and agricultural products to Taiwan because of a historically strong trade relationship. Australia, China, Japan, New Zealand, and Thailand are also important food suppliers.[2] In this context, Taiwan's food system has become extremely vulnerable to external threats, including a direct military escalation with China or a prolonged Chinese naval blockade in the Taiwan Strait.[3] Disruptions to this shipping route could bring Taiwan's vital food imports to a halt and force its people to change their diets dramatically by replacing higher-value food products (for example, meats or processed foods) with traditional staples, such as rice or sweet potatoes.

As a response, Taiwanese authorities have made food security central to the country's agricultural policy, with improvements in overall food security based on four levers: increasing domestic food production, increasing food inventories, increasing food supply-chain resiliency, and reducing reliance on imports. This policy faces important challenges, including a lack of competitiveness in international markets, an aging farming population, and the scarcity of arable land. Furthermore, boosting domestic food production depends on imported fertilizers, fuel, and other chemical inputs.[4]

Pundits increasingly highlight the importance of Taiwan modernizing its armed forces, forging alliances, and preparing to endure—or even break—a possible Chinese blockade by stockpiling fuel or planning for airlifts.[5] To our knowledge, however, Taiwanese leadership has not focused on one of the country's major vulnerabilities—a great dependence on imported food products. This study therefore fills the literature gap by (1) assessing the resilience of Taiwan's agriculture and its ability to feed the population in the context of a military conflict with China, (2) identifying the key food products that should be prioritized in resupply operations or early

2.   Beckman, "U.S. Agricultural Imports in Taiwan."

3.   Béatrice Knerr, "Food Security vs. WTO Membership in Taiwan," in *Proceedings of the 3rd Annual Conference of the European Association of Taiwan Studies* (*EATS*) (Paris: EATS, March 2006).

4.   Effendi Andoko et al., "Review of Taiwan's Food Security Strategy," Food and Fertilizer Technology Center for the Asian and Pacific Region (FFTC-AP) (website), September 10, 2020, https://ap.fftc.org.tw/article/2570.

5.   "How to Avoid War over Taiwan: A Superpower Conflict Would Shake the World," *Economist* (website), March 9, 2023, https://www.economist.com/leaders/2023/03/09/how-to-avoid-war-over-taiwan.

stock buildup efforts, and (3) exploring three different scenarios and possible solutions to strengthen Taiwan's food resiliency.

Agricultural and Food Self-Sufficiency Overview

Taiwan's agricultural sector has lost economic weight over the years. In 2019, it accounted for less than 2 percent of the country's gross domestic product (GDP) in comparison to 30 percent during the 1960s. It also employed only 4 percent of the total Taiwanese workforce. Such trends are normally observed in industrialized nations where economic policies increasingly focus on industrial development and services. Nevertheless, agricultural output typically continues to climb in these countries as fewer but larger farms become more productive. In Taiwan, however, for various reasons, the nation has gone from a surplus in agricultural trade during the 1980s to a heavy reliance on imports for most major food staples today.

The low availability of arable land has limited agriculture and food production across Taiwan. Agricultural production in 2018 used 520,000 hectares (nearly 1.3 million acres), falling short of the national target prescribed by Taiwan's Ministry of Interior of 740,000 to 810,000 hectares (1.8 to 2 million acres). Additionally, other lucrative economic activities (such as industrial production or urban development) often compete for the same limited available land. After all, Taiwan is approximately the size of Delaware and Maryland combined.[6] Furthermore, Taiwan's small-scale farming model hinders the agricultural sector's ability to compete in domestic and international markets. Contrary to what has happened in other industrialized nations, the average farm size in Taiwan has steadily dropped for decades. Farmers operating very small farms cannot achieve economies of scale, adopt new technologies, or employ certain large or expensive farm implements.[7]

As domestic food production declined, Taiwan's general food self-sufficiency rate fell to 32 percent during the 2010–12 world food price crisis. Prices for imported commodities (such as grains) increased dramatically, and the domestic food processing and livestock sectors

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6.   "Field Listing: Area - Comparative," in *The World Factbook* (Washington, DC: Central Intelligence Agency, 2021), https://www.cia.gov/the-world-factbook/field/area-comparative/.
7.   Andoko et al., "Taiwan's Food Security Strategy"; and Knerr, "Food Security."

struggled to stay in business. Taiwan narrowly escaped the crisis by depleting its national three-month grain stockpile.[8]

Following the crisis and recognizing the strategic importance of improving food self-sufficiency, the Taiwanese government took steps to increase domestic food production by revitalizing fallow land through subsidies, incentivizing farmers to plant grains, and encouraging the population to consume more rice, which is abundant in Taiwan.[9] Despite these efforts, Taiwan failed to improve the situation significantly, as the food self-sufficiency rate ranged between 31 and 35 percent during the 2009–18 period and hit 40 percent in 2020.[10]

The growing imbalance of food self-sufficiency levels across commodities adds another layer of complexity. For example, rice continues to be Taiwan's major crop in terms of land and labor—nearly half of all Taiwanese farmers grow rice. Years of policies involving public purchases, however, have led to rice overproduction and an increasing dependency on imports of other key commodities, such as wheat, corn, and soybeans.[11] A lack of storage management (for example, proper refrigeration or adequate packaging) and the discard of low-quality or damaged food have also undermined food self-sufficiency, resulting in high rates of food loss throughout the supply chain. For example, 40 percent of vegetables and fruits went to waste during 2018.[12]

As figure 1 shows, China's and Taiwan's planting and harvesting seasons vary across crops. A war during those seasons would greatly disrupt agricultural production in Taiwan, and favorable conditions for an amphibious attack (March–May and September–October) overlap with these seasons (April–May for planting and August–September for harvesting).[13] Furthermore, crop stock levels in Taiwan will be at their lowest levels during the weeks preceding the harvest window, as inventories are gradually consumed between harvest periods. Thus, grain stock levels in Taiwan will likely be at their lowest levels during the months

8.   Ching-Hsien Ho et al., "The Impact on Food Security and Future Adaptation under Climate Variation: A Case Study of Taiwan's Agriculture and Fisheries," *Mitigation and Adaptation Strategies for Global Change* 23, no. 3 (March 2018): 311–47, https://doi.org/10.1007/s11027-017-9742-3.
9.   Lee Wu-chung, "Promoting Self-Sufficiency in Food," *Taipei Times* (website), March 4, 2011, https://www.taipeitimes.com/News/editorials/archives/2011/03/04/2003497297; and "2014 Council of Agriculture (COA) Annual Report," COA/Executive Yuan, Republic of China (website), March 2015, https://eng.coa.gov.tw/ws.php?id=2504046.
10.   Andoko et al., "Taiwan's Food Security Strategy."
11.   Ching-Hsien Ho et al., "Impact on Food Security"; and Knerr, "Food Security."
12.   Andoko et al., "Taiwan's Food Security Strategy."
13.   "America and China Are Preparing for a War over Taiwan," *Economist* (website), March 9, 2023, https://www.economist.com/briefing/2023/03/09/america-and-china-are-preparing-for-a-war-over-taiwan.

of July and August, the latter of which also overlaps with the ideal time for an amphibious attack.
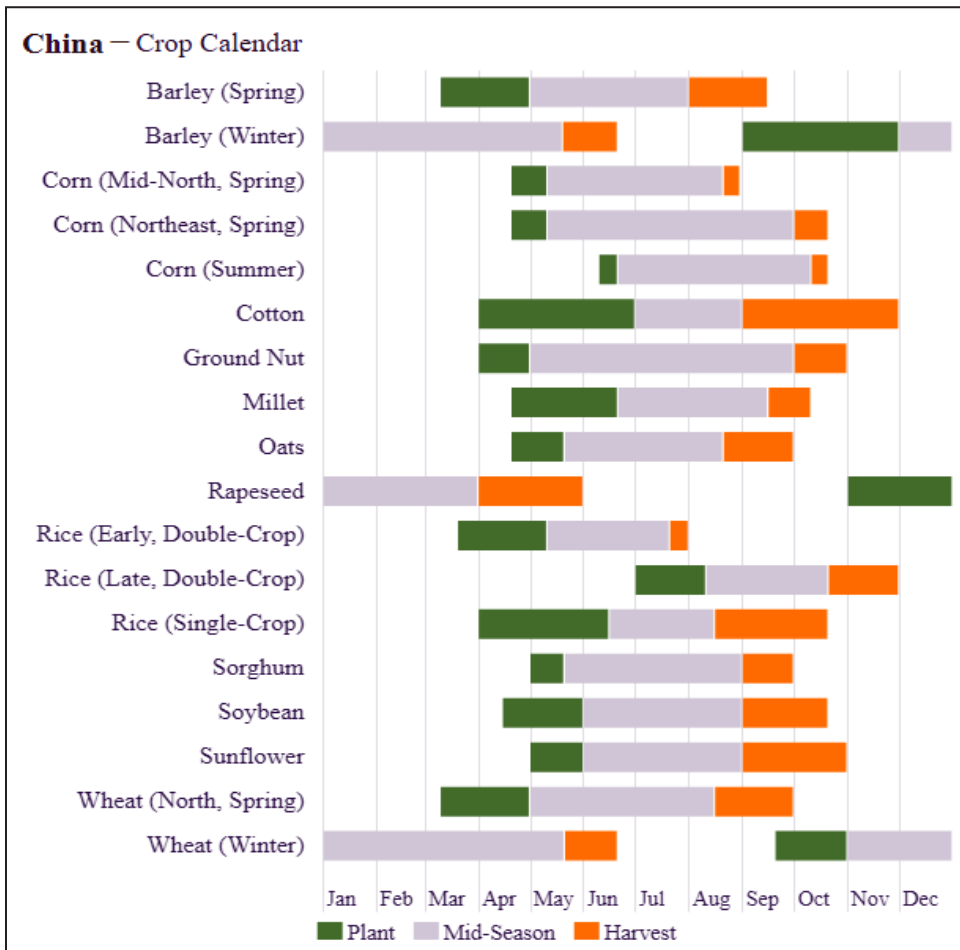
Figure 1. Crop calendar for China and Taiwan
(Source: "Crop Calendars for China and Eastern Asia," Foreign Agricultural Service/U.S. Department of Agriculture (website), n.d., https://ipad.fas.usda.gov/rssiws/al/crop_calendar/che.aspx)

Table 1a. Taiwan's food balance
(Source: Taiwan Council of Agriculture)

Commodity	International Trade					Disposal of Domestic Supply						
	Domestic Production	Import	Export	Change in Stocks	Domestic Supply	Feed	Seed	Manufacture	Waste	Food (Gross)	Extraction Rate (%)	Food (Net)
Cereals	**1,387**	**6,264**	**377**	**-227**	**7,335**	**4,520**	**14**	**189**	**44**	**2,568**	**82**	**2,095**
Rice	1,242	128	228	-242	1,218	4	14	39	13	1,148	88	1,010
Wheat	1	1,401	85	-48	1,365	36	0	67	25	1,237	74	909
Corn	143	4,419	1	64	4,497	4,298	0	24	5	170	-	170
Sorghum	1	65	-	-	65	40	0	26	-	-	85	-
Other	1	251	63	-	190	142	0	33	0	14	50	7
Starchy Roots	**291**	**1,560**	**218**	**84**	**1,563**	**11**	**3**	**0**	**104**	**1,445**	**47**	**683**
Sweet Potatoes	214	1	1	-	214	11	0	-	18	185	-	185
Cassava	1	1,214	179	58	978	0	-	0	49	929	18	167
Potatoes	62	337	2	27	371	-	2	-	37	331	-	331
Other	14	7	36	-	-	-	-	-	-	-	25	-
Sugars and Honey												
Sugars	56	634	73	-	-	-	-	2	-	583	-	583
Honey	13	4	5	-	13	-	-	-	-	13	-	13
Pulses and Oilseeds	**69**	**2,770**	**16**	**-32**	**2,855**	**315**	**5**	**2,027**	**25**	**483**	**98**	**475**
Soybeans	4	2,591	9	-32	2,618	315	2	1,967	19	314	-	314
Peanuts	50	13	1	-	62	-	4	24	1	34	75	26
Sesame	2	43	0	-	45	-	0	36	0	9	-	9
Other	13	123	6	-	130	-	0	0	4	126	-	126
Vegetables	**2,384**	**483**	**77**	**-**	**2,790**	**-**	**5**	**-**	**278**	**2,506**	**-**	**2,506**
Green Leafy	980	119	9	-	1,090	-	-	-	109	981	-	981
Roots	187	47	10	-	224	-	-	-	22	202	-	202
Bulbs and Tubers	585	111	8	-	688	-	5	-	68	615	-	615
Flowers and Fruits	589	184	49	-	724	-	-	-	72	652	-	652
Mushrooms	42	23	2	-	63	-	-	-	6	57	-	57
Fruits	**2,627**	**594**	**192**	**-**	**3,028**	**-**	**-**	**1**	**303**	**2,725**	**-**	**2,725**
Bananas	337	0	3	-	334	-	-	-	33	301	-	301
Pineapples	403	21	31	-	393	-	-	-	39	353	-	353
Citrus	466	81	33	-	513	-	-	-	51	462	-	462
Melons	207	1	1	-	207	-	-	-	21	187	-	187
Other	1,214	491	124	-	1,581	-	-	1	158	1,422	-	1,422

Commodity	Domestic Production	International Trade		Change in Stocks	Domestic Supply	Disposal of Domestic Supply						
		Import	Export			Feed	Seed	Manufacture	Waste	Food (Gross)	Extraction Rate (%)	Food (Net)
Meats	**1,645**	**473**	**8**	**12**	**2,099**	**-**	**-**	**82**	**42**	**1,974**	**-**	**1,974**
Pork	855	94	5	12	932	-	-	82	19	831	-	831
Beef	8	158	1	-	165	-	-	-	3	162	-	162
Sheep and Goat	2	22	0	-	23	-	-	-	0	23	-	23
Poultry	780	197	1	-	976	-	-	-	20	957	-	957
Other	-	2	-	-	2	-	-	-	0	2	-	2
Eggs	**488**	**3**	**3**	**-**	**488**	**-**	**-**	**-**	**10**	**478**	**-**	**478**
Fish and Seafood	**984**	**459**	**746**	**-**	**697**	**-**	**-**	**19**	**34**	**644**	**-**	**644**
Fish	722	250	632	-	341	-	-	11	16	313	-	313
Shrimp and Crab	21	74	4	-	92	-	-	5	4	83	-	83
Cephalopoda	152	47	104	-	95	-	-	1	5	90	-	90
Shellfish	76	68	4	-	140	-	-	-	7	133	-	133
Other	3	11	1	-	12	-	-	2	1	10	-	10
Dried (salted)	9	9	1	-	17	-	-	-	1	16	-	16
Milk	**461**	**240**	**8**	**0**	**694**	**-**	**-**	**-**	**5**	**688**	**-**	**688**
Fresh	461	53	0	-	514	-	-	-	5	509	-	509
Powdered	-	73	5	0	67	-	-	-	-	67	-	67
Other	-	115	3	-	112	-	-	-	-	112	-	112
Oils and Fats	**395**	**392**	**39**	**2**	**746**	**23**	**-**	**182**	**2**	**539**	**-**	**539**
Vegetable	**358**	**315**	**33**	**2**	**637**	**-**	**-**	**175**	**1**	**461**	**-**	**461**
Soybean	334	0	25	2	307	-	-	-	1	306	-	306
Peanut	7	0	0	-	6	-	-	-	0	6	-	6
Sesame	14	3	5	-	13	-	-	-	0	13	-	13
Other	3	311	3	-	311	-	-	175	0	136	-	136
Animal	**37**	**77**	**6**	**-**	**109**	**23**	**-**	**7**	**0**	**78**	**-**	**78**
Lard	37	3	0	-	40	11	-	7	0	22	-	22
Butter	-	28	0	-	28	-	-	-	0	28	-	28
Other	-	46	6	-	41	12	-	-	0	29	-	29

Table 1b. Taiwan's food balance
(Source: Taiwan Council of Agriculture)

Resupplying Taiwan with Food Products in a Conflict

This section assesses Taiwan's and its allies' ability to feed the island's population in the event of a military conflict with China, addresses three different research questions, and explores three possible scenarios.

Question 1: Given Taiwan's dependency on imported food, how resilient would its agricultural sector be in the context of a military attack and trade embargo by China?

Taiwan has been able to feed its population consistently through a combination of domestic food production and food imports. In 2019, daily per capita food supply in Taiwan averaged 2,958 kilocalories, which was sufficient to meet the country's minimum daily caloric per capita requirement of 1,896 kilocalories.[14] Without imports, however, Taiwan could not maintain that positive nutritional balance for long (see tables 1a and 1b).

Hence, the buildup of public food stocks has been a key component of Taiwan's food resiliency strategy. For example, during the COVID-19 crisis, Taiwanese authorities assured the populace the nation had enough food and agricultural commodity stocks to mitigate disruptions in agricultural trade for up to six months.[15] Taiwanese authorities have put a special focus on sustaining high levels of rice stocks through public purchases because the Taiwanese population consumes, on average, nearly 100,000 metric tons of rice per month.[16] Seasonal and annual rice stock levels vary; the early rice crop harvest normally begins in late July, while a second crop is harvested in October–November.

In April 2020, the US Department of Agriculture published a report indicating most of Taiwan's food stock levels would be sufficient to feed its population for up to six months, with one notable exception: with public stocks of 900,000 metric tons, rice is the only food product with reserves large enough to endure beyond six months.[17] It is important to note other sources present different levels of rice stocks lasting for longer periods of time.[18]

14.   Max Roser, Hannah Ritchie, and Pablo Rosado, "Food Supply," Our World in Data (website), https://ourworldindata.org/food-supply.
15.   Lai and Blaustein, "Taiwan."
16.   "Production, Supply, and Distribution," Foreign Agricultural Service/U.S. Department of Agriculture (website), n.d., https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery.
17.   Lai and Blaustein, "Taiwan."
18.   John Van Trieste, "Tsai Hopes to See Taiwan Achieve 40% Self-Sufficiency in Food," Radio Taiwan International (website), April 17, 2020, https://en.rti.org.tw/news/view/id/2003097.

Nevertheless, if China imposes a naval blockade, rice stocks would likely be depleted at a faster rate than currently projected, as a dearth of imports of other food products would force higher consumption of domestically produced rice and other staple crops. The current analysis assumes Taiwan would have enough food to feed its population during a naval blockade for six months. This important timeline should guide US military planners and other US government agencies when developing strategies to supply Taiwan with the food products necessary to remain in the fight.

Question 2: In the event of a naval blockade enforced by China, which food products should be prioritized in early stock buildup efforts or resupply operations based on Taiwan's nutritional needs and domestic food production?

Following Chinese military aggression, commercial trade in and out of Taiwan will be disrupted. In this contested environment, Taiwan's policymakers and military planners will need to prioritize certain products when they build up food reserves or engage in resupply operations. As shown in tables 1a and 1b, Taiwan's food production in 2021 totaled 21,436,000 metric tons in the following categories: fruits (12.3 percent), vegetables (11.1 percent), meat (7.7 percent), cereals (6.5 percent), fish and seafood (4.6 percent), milk (2.2 percent), eggs (2.3 percent), oils and fats (1.8 percent), starchy roots (1.4 percent), sugar and honey (0.3 percent), and pulses and oil seeds (0.3 percent). For many categories, Taiwan's food production does not meet domestic demand, with imports covering the shortfalls. Changing consumption patterns and diet preferences have driven much of this dependency. For instance, rice consumption in Taiwan decreased over the years, while consumption of imported wheat steadily increased.

Next, assuming a partial or complete disruption of commercial trade in and out of Taiwan, it is important to identify food products that should be prioritized in any efforts to build up stockages before a conflict or that should be included in US and allied resupply operations. These food products break down into broader categories based on two factors: (1) wide consumption of the food product by the Taiwanese population, and (2) a large volume of Taiwan imports due to the inability of domestic production to meet national demand.

Grains and Oil Seeds

In most societies, crop products are the primary source of food and calories, and Taiwan is no exception.[19] Grains and grain products (such as rice and flours) provide the main source of calories and cover 52 percent of Taiwan's daily required carbohydrates. The country became heavily dependent on imported grains and oilseeds, however, which now account for about 60 percent of its agricultural imports volume.[20] More specifically, wheat, corn, and soybeans account for the largest agricultural import volumes, as imports almost fully meet Taiwan's domestic needs for these commodities that totaled 8.4 million metric tons in 2021 (see tables 1a and 1b).

For decades, Taiwan's wheat consumption has increased, driven by a thriving baking sector that produces popular goods such as wheat noodles and buns. With negligible wheat crops, Taiwan relies almost exclusively on imported wheat for the production of wheat flour.[21] Almost all imported corn and soybeans are used as feed for Taiwan's livestock operations—mostly poultry and hog. Because of the large consumption volumes and near-complete dependence on imports, Taiwan and its allies should prioritize this food category in any planning considerations to increase the island's food resiliency.

Animal Protein

Meat and aquaculture/fish products are two main sources of animal protein, whereas oilseeds and hulled seeds cover Taiwan's consumption of vegetable protein. Protein sources have evolved over the years as a new diet aligned with other industrialized societies gradually replaced the traditional diet. In 1961, plant-based protein accounted for 74 percent of Taiwan's total daily protein supply, with animal-origin protein for the remaining 26 percent. Fast-forwarding to 2017, animal-origin protein accounted for nearly half the country's protein supply.[22] Furthermore, households in Taiwan now spend more money on meat products (mostly chicken and pork) than any other food category. As shown in tables 1a and 1b, domestic production meets larger shares of domestic consumption

19. *Organisation for Economic Cooperation and Development* (*OECD*)/*UN Food and Agriculture Organisation (FAO) Agricultural Outlook 2014* (New York: OECD/FAO Publishing, 2014), https://www.oecd-ilibrary.org/agriculture-and-food/oecd-fao-agricultural-outlook-2014_agr_outlook-2014-en.

20.   Ching-Hsien Ho et al., "Impact on Food Security."

21.   Troy Lai and Oscar Lin, "Taiwan: Grain and Feed Annual," *Attaché Report* (GAIN) TW2022-0018, Foreign Agricultural Service/U.S. Department of Agriculture (website), April 13, 2022, https://www.fas.usda.gov/data/taiwan-grain-and-feed-annual-7.

22.   Roser, Ritchie, and Rosado, "Food Supply."

of chicken and pork. Taiwan's beef production remains negligible, and imports sustain most beef consumption, with the United States being the top supplier.

With an annual consumption per capita of 39 kilograms (86 pounds), fish products account for a significant share (36 percent) of total animal-protein consumption. Taiwan's annual fish production averages 820,000 metric tons. Coastal and offshore fishing combined with aquaculture account for about 57 percent of Taiwan's demand for fishery products. Deep-sea fishing supplies over 5 percent of domestic demand while imports account for the remaining 37 percent. Despite being a crucial source of animal protein for the Taiwanese population, fish products are under threat. First, years of industrial pollution and overfishing have resulted in increased imports of fish and seafood products since 2006.[23] A Chinese naval blockade could certainly disrupt Taiwan's coastal and offshore fishing activities, deny the importation of fish products, and prevent Taiwanese aquaculture farm operations from securing grain-based meals.

Countering this threat comes with specific challenges. First, any buildup of national stocks of fish products would require large, costly refrigerated warehousing capabilities. Similarly, any US and allied attempts to deliver shipments of frozen fish products would require vessels with refrigerated containers. A logistically less complex alternative would be to prioritize the buildup of stocks of grain-based meals to sustain Taiwan's aquaculture farm operations.

Without some early actions, Taiwan could not maintain its current levels of animal protein consumption under a prolonged Chinese naval blockade. China would deny meat, seafood, and fish imports, and Taiwan's livestock and aquaculture sectors would run out of feed grains. This possibility represents the most serious threat to Taiwan's food security and underpins the importance of grain and oilseeds reserves and resupply options. Even if Taiwan decides to expand its grain and oilseeds stock storage capacity, large grain silos are expensive to build and would be vulnerable to Chinese attacks.

Chemical Inputs

An external disruption to Taiwan's food imports would force the country to return to a spartan 1940s-era diet of rice and sweet potatoes. This switch by itself would not be enough unless Taiwan manages

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23.   Ching-Hsien Ho et al., "Impact on Food Security."

to increase domestic agricultural production quickly. Such a boost in food production can only be achieved via higher yields or expanded cultivation. The scarcity of arable land limits the latter option. As to the former option, the war in Ukraine has shown how the disruption in the fertilizer trade caused a worldwide shortage and struggle to secure these key chemical inputs. Taiwan imported large volumes of chemical fertilizer in the 1950s until a domestic fertilizer industry emerged with the support of public policies and subsidies. Despite making progress, Taiwan continues to import chemical fertilizers and compounds (mostly urea and potassium chloride) from various countries, including China.[24]

In 2015, the annual volume of chemical fertilizers used was approximately 1.01 million metric tons, including ammonium sulfate and potassium chloride.[25] If Taiwan cannot secure a high enough volume of fertilizers, pesticides, and herbicides, local farmers will struggle to maintain yields and productivity. Therefore, Taiwan must build up sufficient stocks of chemical inputs to sustain and expand domestic food production during a Chinese naval blockade. Taiwanese authorities must manage these stocks and prioritize distribution to specific food producers based on strategic and nutritional considerations (for example, grain farmers get priority access to chemical inputs, unlike vegetable growers). Instead of waiting, Taiwan and its allies should prioritize the delivery of these inputs early in—or even before—the outbreak of conflict.

Other Food Products

Consumption of other important products common in the modern Taiwanese diet (such as apples, sugars, potatoes, or butter) completely or heavily relies upon imports.[26] For some of these products, much lower production costs in mainland China take away economic incentives to expand domestic production in Taiwan.[27] Finally, Taiwan consumes large volumes of mostly imported cassava. By volume, cassava imports in 2021 were only surpassed by imports of corn, soybeans, and wheat (see tables 1a and 1b). Cassava has an extremely limited shelf life

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24. "Economic Milestones," *Taiwan Today* (website), October 1, 1967, https://taiwantoday.tw/print.php?unit=8,8,29,32,32,45&post=13840.
25. I Han and Min-Hsien Yang, "Subsidy Policy Evolution to Chemical Fertilizers and Management Information System Processing in Taiwan," FFTC-AP (website), March 6, 2015, https://ap.fftc.org.tw/article/869.
26. Andoko et al., "Taiwan's Food Security Strategy."
27. Knerr, "Food Security."

(24–72 hours after harvest), making it impossible for Taiwan to build up strategic reserves of this starchy root.[28]

Question 3: Under three different scenarios, what logistical assets would Taiwan need to strengthen its food resiliency?

Three scenarios show the different levels of threats to Taiwan's food security. They include a partial or a complete naval blockade imposed by China and discussions about Taiwan and its allies' capabilities to support large-scale, fast-paced logistical operations that bring key agricultural products to the island. These scenarios are not exhaustive and are based on the realities on the ground and in the literature on this issue.

Scenario 1: China effectively denies US and allied food resupply operations.

Through shared land borders, the United States and other NATO members have supplied Ukraine with massive amounts of military equipment, ammunition, and other supplies. With Taiwan's island geography, a similar supply effort during a Chinese naval blockade may not be possible because the People's Liberation Army (PLA) Navy is now the world's largest navy, with 355 combat-capable vessels that can cover a large area. The PLA Rocket Force could also deny freedom of movement of any adversary's naval forces with its anti-ship ballistic missiles. In fact, the PLA Rocket Force's doctrine focuses on three objectives: (1) targeted destruction of major capital ships, (2) general aerial defense, and (3) the imposition of focused naval blockades.[29]

A report published by the Center of Strategic and International Studies think tank argues that once war starts, Chinese naval and air assets would make it extremely difficult and risky for cargo ships and airlifts to reach Taiwan. Moreover, China would attempt to capture major operational ports to use civilian merchant ships to supply its invasion of Taiwan and ease demands on its amphibious fleet.[30] The Taiwanese

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28. Rockefeller Foundation, *Cassava Innovation Challenge: Overview of Cassava Value Chain and Drivers of Spoilage*," https://www.rockefellerfoundation.org/wp-content/uploads/The-Rockefeller -Foundation-Cassava-Innovation-Challenge-Overview-of-Cassava-Value-Chain.pdf.

29. Benjamin E. Mainardi, "The People's Republic of China at Sea: A Sea Power Ascendant?" *Strife Journal* 17 (Winter 2022): 63–89.

30. Mark F. Cancian, Matthew Cancian, and Eric Heginbotham, *The First Battle of the New War: Wargaming a Chinese Invasion of Taiwan* (Washington, DC: Center for Strategic & International Studies, January 2023), https://www.csis.org/analysis/first-battle-next-war-wargaming-chinese-invasion -taiwan.

military would likely respond by blocking all these major ports and beaches with various obstacles, such as sea mines or sunken ships.[31] With all the major ports inoperable, the United States and its allies could no longer use them to unload critical food supplies. If cut off from external assistance, Taiwan would need sufficient food supplies before a conflict with China starts, which various actions and policies could achieve—with significant challenges.

Increasing Food Reserve Levels

As discussed, except for rice, Taiwan's food stockpiles would last approximately six months. While such stock levels may sustain Taiwan in a rapidly evolving kinetic conflict with China, they could fall short during a prolonged naval blockade. Improving Taiwan's food supply system resilience will require major investments in storage capacity. These investments could yield important returns beyond readiness for a military conflict and prepare Taiwan for other shocks, such as natural disasters, pandemics, or global food price spikes.

Recognizing the importance of establishing self-sufficiency in critical strategic industries, the Taiwanese government is fomenting strategic stockpiles of key materials, such as basic foodstuffs, medical supplies, crude oil, construction products, high-tech batteries, and resources and equipment used by the semiconductor industry. These efforts include a US$295 million investment to improve Taiwan's cold-chain infrastructure and enhance the country's ability to stockpile essential food products and handle temporary food shortages and price volatility.[32] These large storage facilities (grain silos or cold storage warehouses) are also vulnerable targets for the PLA Navy, Rocket Force, and Air Force. Thus, with US military and allied assistance, Taiwan's military must develop protective systems to defend this critical infrastructure from kinetic and cyber attacks.

Increasing Domestic Food Production

Taiwan can also become more resilient by increasing domestic food production. This effort will take time and require significant changes to the country's agricultural structure characterized by small farms and an aging farming population. Furthermore, limited farmland and agricultural labor will cap the expansion of traditional agricultural

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31.   "America and China."
32.   Oscar Chung, "Kept in Reserve," *Taiwan Today* (website), May 1, 2021, https://taiwantoday.tw /news.php?unit=8&post=200663&unitname=&postname=Kept-in-Reserve.

production. To circumvent these constraints, Taiwanese authorities should consider developing a victory garden program like those of the United States during World Wars I and II that could be activated during a military conflict and strengthen its food resilience against Chinese aggression. By the end of 1944, Americans established 20 million victory gardens that offset 40 to 60 percent of the annual fruit and vegetable production in the United States. The beneficial gardens utilized limited water and gray water in a crisis and recaptured nutrients typically discarded in a traditional sewage network.[33] With US and allied assistance, Taiwan could establish a nationwide victory garden program. The United States and its allies could provide training and extension services and the essential inputs (for example, gardening tools, seeds, or fertilizers) for the victory gardens.

Another approach would be the promotion of "closet gardens." In densely populated Taiwan, hydroponics would allow most households to produce leafy vegetables within the home.[34] Hydroponic vegetable production has a steep learning curve, however, and requires considerable up-front investment. Preferred hydroponic variants include Dutch bucket and Kratky culture systems due to their resilience against interrupted power sources.

Dutch bucket systems consist of three- to five-gallon pails filled with a slightly porous growth medium, growing a single vegetable. This method is commonly used for solanaceous (nightshade family) or brassicaceous (cabbage family) crops. These systems are watered one to four times daily with a defined nutrient solution.[35] Any effluent drains into a central holding tank and recirculates during the next watering.

Kratky culture consists of growing vegetables into mature vegetable size-appropriate containers that include 100 percent of the water and fertilizer the plant will need to reach maturity. These containers are always impervious to light. As roots grow into the water solution, the upper roots become aerial in nature, and the plant does not require

33. Laura Schumm, "America's Patriotic Victory Gardens," History Channel (website), August 31, 2014, last updated September 1, 2018, https://www.history.com/news/americas-patriotic-victory-gardens; and "Rosie the Riveter WWII Home Front: History and Culture," National Park Service (website), last updated October 27, 2022, https://www.nps.gov/rori/learn/historyculture/index.htm.

34. Rob Girling, "Home Hydroponics: Tech Trend or the New Victory Garden?" *Forbes* (website), June 30, 2020, https://www.forbes.com/sites/robgirling/2020/06/30/home-hydroponics-tech-trend-or-the-new-victory-garden/?sh=25b22d70545f.

35. Nisha Sharma et al., "Hydroponics as an Advanced Technique for Vegetable Production: An Overview," *Journal of Soil and Water Conservation* 17, no. 4 (January 2019): 364–71, https://www.researchgate.net/publication/330080392_Hydroponics_as_an_advanced_technique_for_vegetable_production_An_overview.

action oxygenation.[36] Dutch bucket and Kratky systems still require ideal light conditions for growth, but they do not need a system for nutrient solution oxygenation.

For these reasons, a specific hydroponic method to avoid is the nutrient film technique (NFT) since plants grown in this manner would expire within 30 minutes of the system losing electrical power. Pond culture and deepwater culture could also be utilized at scale if there is a backup means of oxygenating and recirculating the nutrient solutions. The ultimate goals of these programs should be to disperse the production of vegetables to the lowest level possible while using the most-resilient growing methods possible and reallocating as much vegetable-producing farmland as possible to grow grains.

With proper government and industry support, Taiwan could boost its production of vegetables and starchy roots. Moreover, such supply sources would be resilient to Chinese attacks because they comprise many small-size operations dispersed throughout the country. These initiatives would only increase domestic production in food categories where Taiwan already has high self-sufficiency rates (for example, vegetables) and would not address the country's dependency on certain food imports.

Scenario 2: The United States and its allies anticipate they can sustain limited resupply operations to Taiwan in the context of a Chinese naval embargo.

In line with the Black Sea Grain Initiative, which has kept critical grain corridors in Ukraine open to international buyers, China could allow limited maritime traffic to bring essential food products to Taiwan to avoid a major humanitarian crisis. For these food resupply operations to occur, China would have to allow maritime traffic across the Bashi Channel and the Sibutu Passage.

It is unclear, however, whether commercial shipping companies would be willing to operate in that region due to elevated risk and higher operational costs (for instance, exorbitant insurance rates and difficulties obtaining shipping letters of credit). In that case, US and allied navies may need to ensure the arrival of critical food supplies to Taiwan. This possibility raises the question of whether the US military and its

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36. B. A. Kratky, "Three Non-Circulating Hydroponic Methods for Growing Lettuce," in *International Symposium on Soilless Culture and Hydroponics*, ed. A. Rodriquez-Delfin and P. F. Martinez, *Acta Horticulturae* 843 (2009): 65–72, https://www.ctahr.hawaii.edu/hawaii/downloads/three_non-circulating_hydroponic_methods_for_growing_lettuce.pdf.

allies could replace commercial operators and rally a significant number of cargo vessels capable of carrying large quantities of bulk commodities. These replacements would include different classes of vessels to ship bulk cargo and containers, ranging from Handysize (15,000–35,000 metric tons deadweight) to Capesize (above 150,000 metric tons deadweight).[37]

Trade data reveals the logistical complexity and sheer size associated with supplying enough food to feed Taiwan's population for a long period of time. To illustrate, it would require 47 Panamax-sized vessels—the largest ship that can cross the locks of the Panama Canal—to bring in the volume of soybeans imported by Taiwan in 2021 (2.6 million metric tons). Furthermore, a Lockheed C-5 Galaxy aircraft, the US Air Force's largest and only strategic airlifter, has a maximum payload of 122 metric tons. Such large food import volumes rule out the possibility of a Berlin airlift–type operation, especially if China contests the airspace surrounding Taiwan.[38]

Most agricultural imports arrive in Taiwan through four ports with the logistical infrastructure needed to handle and store the products, such as port cranes for containers, grain silos, and cold storage for fresh fruits and vegetables (see figure 2).
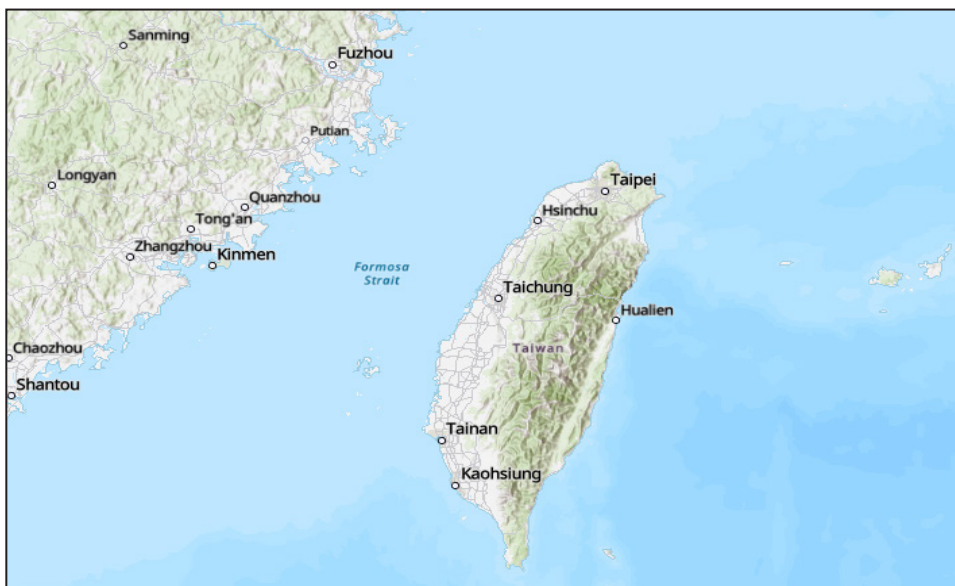
Figure 2. Taiwan's seaports and container terminals
(Source: US Army Corps of Engineers, Army Geospatial Center (website), https://www.agc.army.mil/Maps/)

37.   Soy Transportation Coalition, "Classes of Vessels and Cargo Capacity," n.d., accessed March 29, 2023, https://www.soytransportation.org/Stats/Ocean_VesselClasses.pdf.

38.   "Lockheed C-5 Galaxy Heavy Military Transport Aircraft," Flugzeuginfo.net (website), n.d., accessed March 29, 2023, http://www.flugzeuginfo.net/acdata_php/acdata_c5_en.php.

In 2019, the Ports of Keelung and Kaohsiung accounted for 77 percent of the value of Taiwan's agricultural imports. In contrast, the Port of Taipei played a marginal role, with a 5 percent share (see table 2). Thus, it would be essential for Taiwan to keep these ports operational or to expand their capacities to sustain food resupply operations.

Table 2. Value of Taiwan's 2019 agricultural imports by ports
(Source: Trade Data Monitor (website), https://www.tradedatamonitor.com/)

Port	Value (USD)	Share
Keelung	11,946,303,244	43.31%
Kaohsiung	9,369,524,621	33.97%
Taichung	4,793,120,684	17.38%
Taipei	1,476,199,870	5.35%
Total	**27,585,148,418**	**100%**

Trade data also shows that nearly 95 percent of agricultural imports arrived in Taiwan by sea routes, while the remainder was transported by air. Moreover, shipping containers accounted for 85 percent of the value of agricultural products transported by sea, with the remaining goods coming in bulk (see table 3). These shares vary widely across agricultural products. For example, a larger share of corn and soybean imports came in bulk, whereas 100 percent of vegetables, palm oil, and dairy products were transported in containers—some of which were refrigerated.

Table 3. Value of Taiwan's 2019 agricultural imports transported by sea and by subcategories
(Source: Trade Data Monitor (website), https://www.tradedatamonitor.com/)

By Sea Subcategories	Value (USD)	Share
Container	22,015,335,478	85%
Not container: bulk goods	3,762,047,076	14%
Not container: packed sundry goods	268,968,708	1%
Express delivery	46,649	0%
Mail	555,180	0%
Total	**26,046,953,091**	**100%**

Taiwan's heavy reliance on shipping containers represents another vulnerability because China is the world's top producer and exporter of shipping containers. Furthermore, Chinese companies now produce

80 percent of new containers, and China is the world's top handler of containers.[39] As a stark reminder of this risk, during the COVID-19 pandemic and its associated supply-chain disruptions, freight container rates on the Chinese-US East coast route increased by more than 500 percent and triggered important changes in the flow of goods worldwide.[40]

> *Scenario 3: The United States and its allies foresee an impending Chinese naval blockade and begin coordinating food resupply operations before the blockade is enforced.*

The last scenario involves the United States anticipating an imminent Chinese military invasion or naval blockade of Taiwan. In this case, the United States and its allies would have a limited window of opportunity to supply Taiwan with as many foodstuffs as possible before the disruption of maritime traffic to the island. Thus, time is essential, and Taiwan and its allies would have to contract or mobilize additional civilian and military maritime transportation rapidly to bring in additional food supplies before the conflict or blockade began.

Lieutenant General James W. Bierman Jr., commanding general of the III Marine Expeditionary Force and of Marine Forces Japan, stated that the United States and its Asian allies are attempting to replicate the groundwork done in Ukraine to support resistance against a Chinese invasion of Taiwan. This theater setting includes the pre-positioning of supplies and the identification of sites from which the United States and allies would support and sustain operations in Taiwan. Given its geographic proximity, the Philippines emerges as a suitable staging ground for the rapid deployment of US logistical assets.[41]

With limited time and logistical capacity, the United States and its allies would have to prioritize the transportation of the previously mentioned food products that would be critical for Taiwan to endure a prolonged conflict or naval blockade.

Finally, Taiwan would need sufficient infrastructure and supply-chain channels to receive, store, and distribute the sudden spike in imports

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39.   "How Dominant Is China in the Container Port Business?" *Zeymarine* (blog), April 14, 2022, https://zeymarine.com/how-dominant-is-china-in-the-container-port-business/.
40.   Roslan Khasawneh and Muyu Xu, "China-U.S. Container Shipping Rates Sail Past $20,000 to Record," Reuters (website), August 5, 2021, https://www.reuters.com/business/china-us-container-shipping-rates-sail-past-20000-record-2021-08-05/.
41.   Kathrin Hille, "US Military Deepens Ties with Japan and Philippines to Prepare for China Threat," *Financial Times* (website), January 9, 2023, https://www.ft.com/content/bf5362de-60a6-4181-8c2a-56b50be61383.

of voluminous food commodities. Otherwise, many of the precious imports may spoil and go to waste due to the vessels' long waiting periods at the shore, improper handling, or inadequate storage capacity.

Conclusions

For political and strategic reasons, food self-sufficiency and food security have been central issues in Taiwan's agricultural policy since the country established its independence. A declining agricultural sector and changes in diets and consumption patterns have made Taiwan more dependent on imported foods to meet its nutritional needs. Today, food imports account for more than two-thirds of Taiwan's annual caloric intake. This fact represents a major vulnerability since a Chinese military conflict and possible naval blockade would disrupt all commerce to and from the island. As a RAND report states, China would likely consider a naval blockade a lower-cost and lower-risk alternative to a full invasion of Taiwan. Furthermore, the report argues that any US or allied efforts to break the blockade would likely be unsuccessful and that China could endure the consequences of a prolonged confrontation much better.[42]

Reducing Taiwan's dependence on food imports would lessen Chinese leverage and buy Taiwan and the United States more time to consider military and diplomatic options. As shown here, Taiwan maintains sufficient food stocks to feed its population for six months. Steps to strengthen the island's food resiliency must improve domestic food production, expand food stocks, and plan for food resupply operations. Each of these options, however, comes with significant challenges.

This study identified food commodities (such as feed grains, animal proteins, and chemical inputs) that Taiwanese and American military planners should prioritize in pre-conflict stock buildup or resupply operations based on insufficient domestic production and the commodity's nutritional role in the Taiwanese diet. Then, three scenarios explored and assessed the ability of Taiwan's food supply chain to endure a partial or total Chinese naval blockade.

For the scenario assuming a total blockade, several solutions were discussed, including expanding food strategic reserves and increasing domestic food production prior to any level of conflict. Proposed strategies for boosting and decentralizing food production included the

42.   Bradley Martin et al., *Implications of a Coercive Quarantine of Taiwan by the People's Republic of China* (Santa Monica, CA: RAND Corporation, 2022), https://www.rand.org/content/dam/rand/pubs/research_reports/RRA1200/RRA1279-1/RAND_RRA1279-1.pdf.

implementation of a victory garden program or promotion of closet gardens via hydroponic production.

In the second scenario, where China imposes a long naval blockade but allows a limited influx of food products to Taiwan, it is unclear whether commercial shipping companies would risk operating in that area. Under these circumstances, the United States and its allies may need to fill in the gap and mobilize naval and air assets to transport food safely to Taiwan. Transportation of the necessary volumes would require a large number of vessels capable of carrying bulk cargo or containers.

In the scenario where Taiwan and the United States believe China will enforce a blockade, Taiwan and the United States would have to coordinate food resupply operations—while possible—in an expeditious way. Again, this situation would involve the mobilization of a large fleet of cargo vessels, the pre-positioning of supplies, and the identification of sites from which the United States could coordinate resupply operations. Finally, the success of these efforts would depend on Taiwan's ability to handle, store, and distribute the sudden influx of large volumes of food commodities.

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The Strategic Importance of Taiwan to the United States and its Allies: Part One

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ABSTRACT: This article presents four factors to consider in evaluating Taiwan's strategic importance to the United States and its allies and answers a question often raised at forums concerning the Indo-Pacific: "Why should the United States care" about this small island in the Pacific? The response often given is simply US credibility, and while this is an important factor, this article reviews a wider array of possible factors to consider when answering that question. The study of these factors should assist US military and policy practitioners in accurately evaluating the related strategic environment. Through a survey of official US policy statements and strategy documents across administrations, part two of this article (to be featured in a future issue) will examine the evolving US perception of Taiwan throughout the aggressive strengthening of China and during Taiwan's domestic political development into a full-fledged democracy.

Keywords: Taiwan, geopolitical, credibility, democracy, authoritarian

Audience members at discussions concerning the eastern Pacific's strategic environment often question why the United States should consider a small island to be of any national strategic significance. Many of these audience members and other interested readers are engaged in policy making and related activities critical to furthering US national interests. The People's Republic of China's (PRC's) recent military activities following the then Speaker of the House Nancy Pelosi's visit to the Republic of China (ROC) and ROC President Tsai Ing-Wen's visit to the United States should underscore Taiwan's strategic importance to them. The ongoing designation of the People's Republic of China as the United States' pacing threat and PRC designs on the Republic of China further stress its strategic importance. This article will unfold in two parts to give readers a stronger understanding of the region's geopolitical, commercial, ideological, domestic political, and policy elements and build a case for Taiwan's strategic importance to the United States. Part one will review four underlying factors to consider when contemplating Taiwan's importance. Part two will review recent changes to the strategic environment and current responses, including an analysis of recent *National Security Strategies* and statements concerning Taiwan.

Taiwan's Strategic Importance to the United States and Allies

Taiwan's strategic relevance is similar to that of Afghanistan, Germany (Berlin), Iraq, and South Vietnam. Few Americans can locate Taiwan on a map, let alone recognize its strategic significance. There were demonstrable reasons, retrospective justifications, and debatable rationales for US involvement in each of these conflicts or potential conflicts. Likewise, Taiwan is of strategic interest to the United States and its allies for four prominent reasons:

- Taiwan's location is geopolitically important to the United States and its allies but even more important to the People's Republic of China.

- Taiwan has commercial significance.

- Taiwan is a beacon of democracy to the people of China.

- The loss of Taiwan's democracy to authoritarianism would undermine our credibility, especially with our allies.

Geopolitical Location – A Realist View

Taiwan's geographic position between China and two major US allies—Japan and the Philippines, with South Korea close by—makes it a pivotal strategic military location.[1] Conversely, physical control of Taiwan would provide the People's Republic of China a geographic wedge between the two US allies and a gateway to the open ocean and would, by default, deny a counterforce from utilizing Taiwan's proximity to China as a military staging ground.

From Japan's perspective, the People's Liberation Army Air Force's recent encirclement of Taiwan often violates Japan's airspace, indicating an impending disregard for Japan's rights and perhaps imminent overt aggression against the same. Taiwan sits at the tail end of Japan's Ryukyu and Senkaku archipelagos, which include the Kadena Air Base on Okinawa.

1. *National Security Challenges and U.S. Military Activities in the Indo-Pacific Region: Hearings before the House of Representatives, Committee on Armed Services*, 117th Cong. (2022) (statement of Ely Ratner, Assistant Secretary of Defense for Indo-Pacific Security Affairs, Office of the Secretary of Defense), https://www.congress.gov/117/meeting/house/114487/witnesses/HHRG-117-AS00-Wstate -RatnerE-20220309.pdf; and Brendan Rittenhouse Green and Caitlin Talmadge, "The Consequences of Conquest: Why Indo-Pacific Power Hinges on Taiwan," *Foreign Affairs* (website), June 16, 2022, https://www.foreignaffairs.com/articles/china/2022-06-16/consequences-conquest-taiwan-indo-pacific.

Taiwan was part of Japan for many decades and has continuing cultural, social, and economic ties with it.

Okinawa is only 400 miles from Taipei, and the closest Japanese island is 70 miles away.[2] At least one former US government official has commented that any PLA attempt to take Taiwan by force would likely involve engagement with US forces on Okinawa because, from a PLA perspective, it would be folly to leave untouched such a large counterforce so close to the northern sector of a difficult amphibious operation.[3] If so, US forces in South Korea would likely be seen in the same way.[4] Japan itself would consider any large-scale military operations so close to its sovereign territory a vital threat. In fact, Japan protested recent Chinese missile testing that landed in its exclusive economic zone. Thus, the People's Liberation Army is likely to see that any military action against Taiwan could involve Japan or the Philippines—regardless of US troop presence in either country— and could quickly become a global engagement. It is unclear, however, whether the PRC political establishment would view it the same way, or at what point political considerations may overcome the risk of international involvement.

The Philippines, likewise, understands that Taiwan plays an important role in protecting its northern flank.[5] Many believe America's entry into World War II stemmed solely from the attack on Pearl Harbor but forget that Japan attacked and invaded the US Philippines simultaneously and that the Japanese amphibious assault originated from Taiwan. On December 7, 1941 (HST), Japan launched Zeroes from Taiwan that destroyed B-17 bombers and other key military assets at Clark Field.[6] About 180 miles away, at the same time, Japanese General Hisaichi Terauchi conducted the amphibious invasion of the Philippines

2.   Anthony Kuhn, "On Japan's Yonaguni Island, Fears of Being on the Front Line of a Taiwan Conflict," NPR (website), August 5, 2022, https://www.npr.org/2022/08/05/1115384641/japan -taiwan-china-yonaguni-island.

3.   Carl Ford, "The Ability of the PRC to Take Taiwan by Force" (presentation, Joint Forces Staff College, Norfolk, VA, November 30, 2022); Scott W. Harold and Satoru Mori, "A Taiwan Contingency and Japan's Counterstrike Debate," *RAND Blog*, July 23, 2021, https://www.rand.org /blog/2021/07/a-taiwan-contingency-and-japans-counterstrike-debate.html; and Rachel Oswald, "As China Threatens Taiwan, Okinawa Braces for War," Roll Call (website), October 19, 2022, https://rollcall.com/2022/10/19/as-china-threatens-taiwan-okinawa-braces-for-war/.

4.   Sungmin Cho, "South Korea's Taiwan Conundrum," War on the Rocks (website), December 31, 2021, https://warontherocks.com/2021/12/south-koreas-taiwan-conundrum/.

5.   Richard Javad Heydarian, "US-Philippines Drawing Closer on Defense of Taiwan," *Asia Times* (website), October 3, 2022, https://asiatimes.com/2022/10/us-philippines-drawing-closer-on-defense -of-taiwan/; and Joshua Bernard Espeña, "A 'Taiwan Dilemma' for the Philippines," Atlas Institute for International Affairs (website), September 26, 2020, https://www.internationalaffairshouse.org /a-taiwan-dilemma-for-the-philippines/.

6.   Sam McGowan, "Japanese Attack on the Philippines: the 'Other' Pearl Harbor," *Warfare History Network* (website), n.d., https://warfarehistorynetwork.com/article/japanese-attack-on-the -philippines-the-other-pearl-harbor/ (originally published in *WWII Quarterly* 3, no. 2, Winter 2012).

from Taiwan with four corps, starting with Bataan Island. This history bears on why the Philippines and Japan are concerned about Taiwan becoming a base of operations for an aggressive, large, and hostile neighbor.

Conversely, though unwilling to speak openly of offensive operations, many allies understand Taiwan's value for staging resources for and launching attacks on the People's Republic of China should kinetic hostilities ever break out. General Douglas MacArthur once called Taiwan an "unsinkable aircraft carrier and submarine tender," due to Taiwan's proximity to mainland China.[7]
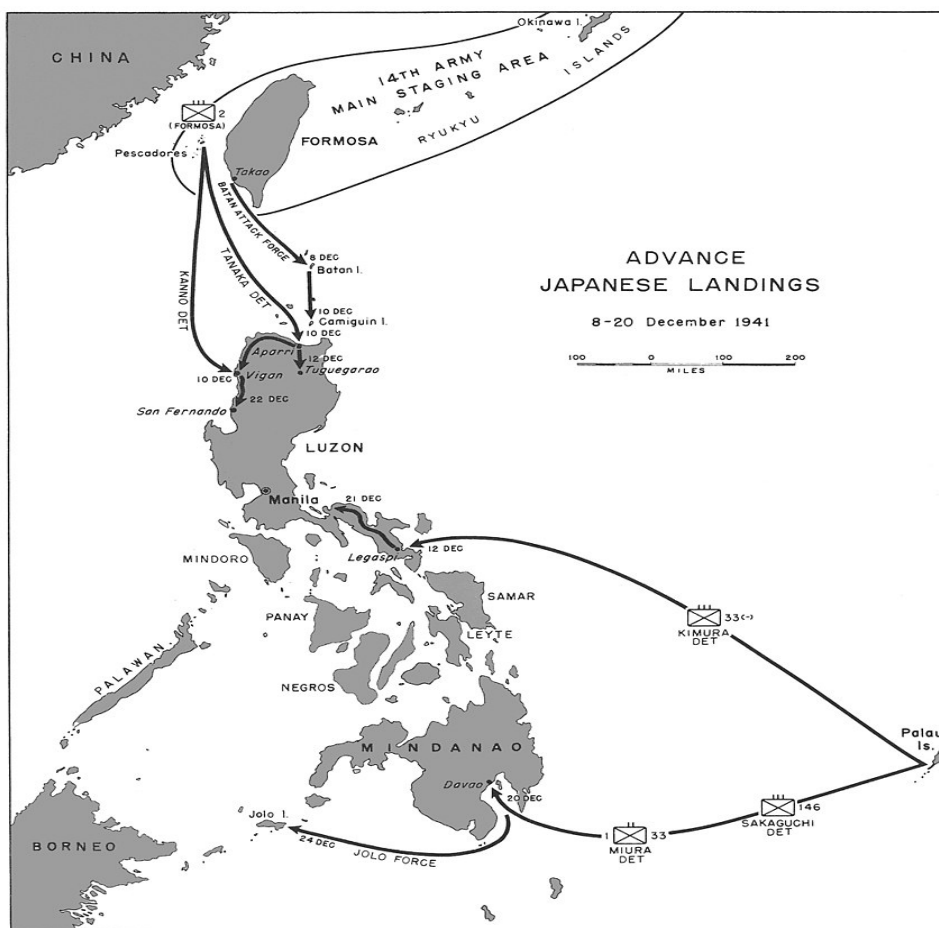
Figure 1. Japanese invasion of Philippines from Taiwan
(Map from Louis Morton, *The War in the Pacific: The Fall of the Philippines, 1953*, Washington, DC: Center of Military History, 1993, 99, https://history.army.mil/html/books/005/5-2-1/CMH_Pub_5-2-1.pdf)

7. Douglas MacArthur, memorandum, June 14, 1950, in *Foreign Relations of the United States, 1950, Korea*, vol. 7, ed. John P. Glennon (Washington, DC: Government Printing Office, 1976), https://history.state.gov/historicaldocuments/frus1950v07/d86, as quoted in Stanley Kao, "Letter: MacArthur's Unsinkable Aircraft Carrier 70 Years On," *Financial Times* (website), January 5, 2022, https://www.ft.com/content/22471013-a931-4e60-a8ee-29efba846ab4.

In addition to the broader geographic value all parties place on Taiwan, Japan and the Philippines view it as part of the critical first island chain depicted in figure 1. This island chain is a convenient geographic defensive containment line against an ever-aggressive PLA Navy (PLAN). Although not spoken of openly, this island chain provides land-based antiship missile points to deny a PLAN exit from waters close to PRC shores, should a conflict ever arise. With the continuing emergence of a PLAN blue-water fleet, maintaining an unbroken chain to prevent China from breaking out into the open ocean becomes even more geographically important.

From the PLAN perspective, Taiwan implicates long-term naval power projection and contested military control of the Pacific.[8] A PLAN coordinator has to consider the geography of the region hostile. Unlike the US coastline, there are many obstacles to breaking out for long-range fleet operations.[9] A scan of a regional map shows a PLAN fleet in a hostile environment is unlikely to move assets through the South Korea-Japan gap (that is, between two US allies) or through a multitude of islands controlled by the Philippines, another US ally. Heading south through numerous murky Indonesian and Malaysian island chains would take China far from any objectives in the central and eastern Pacific, and though Indonesia and Malaysia are not US allies, they are not currently PRC allies either. Movement through any unfriendly areas dotted with land-mass obstacles is treacherous.

At present, going through areas around Taiwan would appear to be the most reasonable alternative to breaking out a blue-water fleet into the open Pacific, regardless of which side controls Taiwan. Yet, in a hostile environment, this alternative would be precarious at best, as allied missiles based on any islands around Taiwan have ranges that could easily close any gap that a hostile fleet might travel.Indeed, Taiwan has the Hsiung Feng III anti-ship missile with a range of 298 kilometers, South Korea has the SSM-700K C-Star with a range of 600 kilometers, and US allies have access to the Tomahawk missile with a range of 185 kilometers and the Harpoon Block II missile with a range of 660 kilometers.

Even if the PLA Navy could penetrate the first island chain, it would have a difficult time returning to any home ports. This is one reason for the PRC's deep interest in gaining dual-use port access in south Pacific Island

8. Andrew Erickson and Joel Wuthnow, "Barrier, Springboards and Benchmarks: China Conceptualizes the Pacific 'Island Chains,'" *China Quarterly* (website), January 21, 2016, https://apps.dtic.mil/sti/pdfs/AD1002513.pdf.
9. Erickson and Wuthnow, "Barrier, Springboards and Benchmarks"

nations, such as Kiribati and the Solomon Islands, and in Indian Ocean locations, such as Djibouti, Pakistan, and Sri Lanka. Resupply of PLAN assets in these areas would allow for operations closer to the US mainland without having to return to a homebase. Even in a peaceful environment, the American public will soon see PLAN ships operating near the mainland US coastline, and some will question why the United States allowed their easy passage and sustainment to challenge freedom of navigation. In fact, just before the new year, a PLAN aircraft carrier group led by the aircraft carrier *Liaoning* sailed closer than ever to Guam.[10]
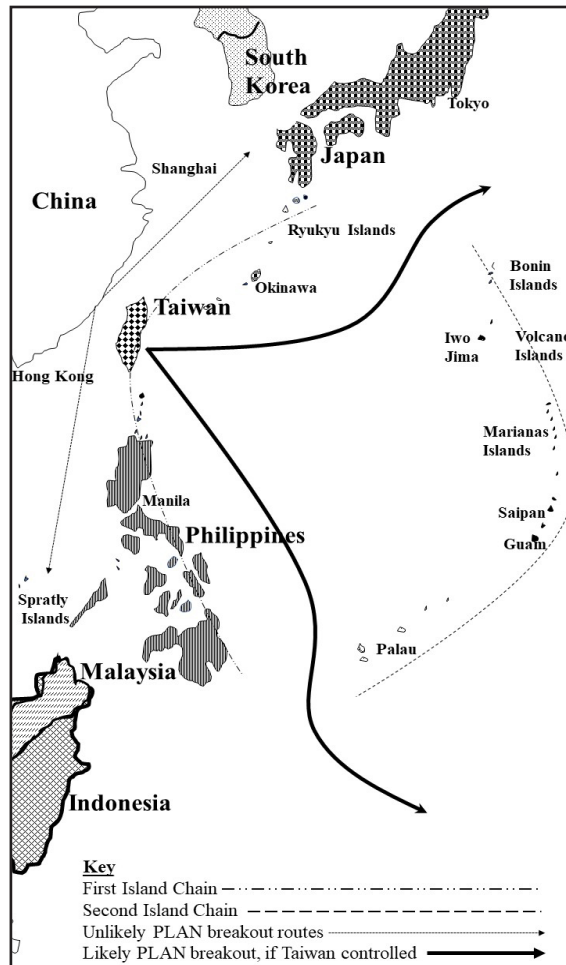
Figure 2. Difficult routes to the open Pacific from China
(Map created by author)

10.   Paul D. Shinkman, "China Sails Warships Near Guam in Warning to U.S. over Taiwan," *U.S. News & World Report* (website), December 29, 2022, https://www.usnews.com/news/world-report /articles/2022-12-29/china-sails-warships-near-guam-in-warning-to-u-s-over-taiwan; and Peter Suciu, "China Just Sailed an Aircraft Carrier Near One of America's Biggest Pacific Bases," 19FortyFive (website), December 30, 2022, https://www.fortyfive.com/2022/12/china-just-sailed-an-aircraft-carrier-near-one -of-americas-biggest-pacific-bases/.

Given this geographic layout, clearly control of Taiwan as a base of operations—by whatever means—is crucial to the PLA Navy's long-term geostrategic plan. By extension, in a militarily competitive scenario, the denial of Taiwan as a base for the PLA Navy is just as critical to the United States and its allies. Control of Taiwan would provide the PLA Navy a base of operations unhindered by ally-controlled areas on the first island chain—even if it would have to build artificial harbors and bases on the island's eastern side. Furthermore, by controlling Taiwan, the PLA Navy would create a buffer between the two main US allies—Japan and the Philippines—and obstruct coordinated operations between them and the United States. Falling back on the second island chain where US-controlled Guam and the Northern Mariana Islands lie might be a backup plan, but this porous line has large gaps and is easily penetrated. These geographic features are important from a military standpoint and impact what the EU High Representative for Foreign Affairs described as "the most strategic strait in the world, in particular for our trade," and the world's commercial shipping lanes.[11]

Commercial Importance

Taiwan's economic importance to the United States has been discussed widely in various forums, and this section provides a brief review.[12] In short, Taiwan is important to US, allied, and world economies due to its location, production size, and important role in the high-tech supply chain.

Geography

Taiwan's militarily important geographic location lies along main commercial shipping routes and is near several tiger economies. Over the past year, 88 percent of the world's largest container ships by tonnage traveled through the Taiwan Straits—and half the world's container ships

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11. CNA Brussels Staff Writer, "Taiwan Strait 'Strategic' for EU Trade, Borrell Says," *Taipei Times* (website), April 20, 2023, https://www.taipeitimes.com/News/front/archives/2023/04/20/2003798271.

12. For further reading, see "Transcript: Event: 'Why Taiwan Matters – From an Economic Perspective,'" Center for Strategic and International Studies (website), October 12, 2022, https://www.csis.org/analysis/why-taiwan-matters-economic-perspective; Joshua Meltzer, *Taiwan's Economic Opportunities and Challenges and the Importance of the Trans-Pacific Partnership*, East Asia Policy Paper 2 (Washington, DC: Brookings, January 2014), https://www.brookings.edu/research/taiwans-economic-opportunities-and-challenges-and-the-importance-of-the-trans-pacific-partnership/; and Yun-feng Pai, "Taiwan's Economic Success," *Journal of Third World Studies* 3, no. 1 (Spring 1986): 31–35, https://www.jstor.org/stable/45197199.

had done so by the time of Pelosi's 2022 trip to Taiwan.[13] The island is home to several of the 10-largest shipping fleets, including the highly recognizable Evergreen lines.[14] According to Maersk (another large shipping company), diverting around the island if China blockaded the strait would "add to the length of voyages and that would absorb a significant capacity," thereby disrupting commercial supply lines.[15] A recent Mercatus Center study found that insurance premiums for shipping in the Black Sea since the start of the Russia-Ukraine War have become cost-prohibitive, and any conflict over Taiwan would likely have a similar outcome. The study also found that each day of shipping delay equates to adding 1 to 2 percent to the cargo transshipment cost so that one week's diversion would equate to a 7 to 14 percent tariff.[16]

The weather also poses a significant risk. The region east of Taiwan has some of the most cyclonic activity worldwide, averaging 20 cyclones annually.[17] In a sense, the island provides a harbor-like shield to ships passing along the strait, and its separate status from the People's Republic of China keeps the passage open to traffic or at least provides a basis to contest any challenges to that freedom. A Chinese takeover of the island would squarely place this critical shipping lane in the hands of an authoritarian regime.

Economy

Although Taiwan is often compared to Belgium in terms of geographic size, Taiwan has a larger population and economy, and at US$669 billion gross domestic product, Taiwan's economy is four times larger than Ukraine's pre-war economy, the seventh-largest economy in Asia, and

13.   Kevin Varley, "Taiwan Tensions Raise Risks in One of the Busiest Shipping Lanes," Bloomberg (website), August 2, 2022, https://www.bloomberg.com/news/articles/2022-08-02/taiwan-tensions -raise-risks-in-one-of-busiest-shipping-lanes; and David Uren, "A Blockade of Taiwan Would Cripple China's Economy," *Strategist* (blog), August 8, 2022, https://www.aspistrategist.org.au/a-blockade-of -taiwan-would-cripple-chinas-economy/.

14.   Alcott Global consultancy, as cited in Marcus Lu, "Ranked: The World's Largest Container Chipping Companies," Visual Capitalist (website), July 26, 2022, https://www.visualcapitalist.com /worlds-largest-container-shipping-companies-2022/.

15.   Huileng Tan, "China Is Conducting Military Exercises in and around One of the World's Busiest Shipping Lanes after Pelosi's Controversial Taiwan Visit," Business Insider: Africa (website), August 4, 2022, https://africa.businessinsider.com/transportation/china-is-conducting -military-exercises-in-and-around-one-of-the-worlds-busiest/yycynfv.

16.   Christine McDaniel and Weifeng Zhong, "Policy Brief: Submarine Cables and Container Shipments: Two Immediate Risks to the U.S. Economy if China Invades Taiwan" (brief, Mercatus Center, George Mason University, August 29, 2022), https://www.mercatus.org/research/policy-briefs/submarine -cables-and-container-shipments-two-immediate-risks-us-economy-if; Harry Valentine, "Comparing Maritime versus Railway Transportation Costs," Maritime Executive (website), December 25, 2017, https://www.maritime-executive.com/editorials/comparing-maritime-versus-railway-transportation-costs.

17.   Jonathan Belles, "Which Countries Get Hit the Most by Tropical Cyclones?" Weather Channel (website), July 7, 2016, https://weather.com/storms/hurricane/news/tropical-cyclone-hits-by-country -typhoon-hurricane; and Varley, "Taiwan Tension Raise Risks."

the 16th-largest trading economy, exceeding US$90.6 billion in trade with the United States annually.[18] Its foreign reserves amount to about US$500 billion, and its foreign investment totals US$6 billion. Needless to say, a PRC takeover of Taiwan would significantly boost China's economy in terms of productivity and wealth. Taiwan's economy is not the only one at stake. All global economies are at risk. The second-largest (People's Republic of China), third-largest (Japan), and 10th-largest (South Korea) global economies are nearby and might be drawn into any military conflict in the region.[19] Further, the United States should be concerned about the PRC's ability to envelop any other regional economies into its growing economic orbit—which would amount to these economies being tied to PRC economic resource bases.

Supply Chain

As noted, Taiwan lies along a critical commercial shipping lane and is crucial to supply chains relying on that passage; however, Taiwan also has domestic-based industries vital to high-tech industries. One of the most notable segments of the Taiwanese economy is its semiconductor industry. While other countries, including the United States and the People's Republic of China, engage in semiconductor manufacturing, 60 percent of the total and 90 percent of the most sophisticated and best semiconductors are built in Taiwan.[20] These semiconductors are key components for cars, cell phones, and advanced computers, among other technologies.[20] During the COVID-19 crisis, chip shortages in 2021 resulted in US$60.6 billion in lost auto industry revenue alone.[21]

18. Statistica.com (Taiwan's economy was US$669B while Ukraine was US$156B in 2020); and "Country Comparisons - Real GDP (Purchasing Power Parity)," in *The World Factbook* (Washington, DC: Central Intelligence Agency, 2021), https://www.cia.gov/the-world-factbook/field /real-gdp-purchasing-power-parity/country-comparison; "Taiwan: US-Taiwan Trade Facts," Office of the United States Trade Representative, Executive Office of the President (website), n.d., https://ustr.gov /countries-regions/china/taiwan; and   Staff Writer, "Taiwan Ranks as World's 16th-Largest Trading Economy," *Taipei Times* (website), April 16, 2022, https://www.taipeitimes.com/News/biz /archives/2022/04/16/2003776667.
19. Insider Monkey Team, "22 Biggest Economies in the World in 2022," yahoo!finance (website), November 2, 2022, https://finance.yahoo.com/news/22-biggest-economies-world-2022-144215864.html.
20.   Ralph Jennings, "EU Seeks to Strengthen Taiwan's 'Silicon Shield' as Military Tensions with China Threaten Chip Supply," South China Morning Post (website), September 16, 2022, https://www.scmp.com/economy/china-economy/article/3192759/eu-seeks-strengthen-taiwans-silicon -shield-military-tensions; and "Special Report: Taiwan's Dominance of the Chip Industry Makes It More Important," March 6, 2023, *Economist* (website), https://www.economist.com/special -report/2023/03/06/taiwans-dominance-of-the-chip-industry-makes-it-more-important.
21.   Michael Wayland, "How Covid Led to a $60 Billion Global Chip Shortage for the Auto Industry," CNBC (website), February 21, 2021, https://www.cnbc.com/2021/02/11/how-covid-led-to-a-60-billion -global-chip-shortage-for-automakers.html; and Reuters, "Top US Spy Says Chinese Invasion Halting Taiwan Chip Production Would be 'Enormous' Global Economic Blow," Reuters (website), May 4, 2023, U.S. News & World Report (website), https://www.usnews.com/news/world /articles/2023-05-04/top-us-spy-says-chinese-invasion-halting-taiwan-chip-production-would-be -enormous-global-economic-blow.

Should a Taiwan conflict occur, chip shortages cannot be easily made up by capacity elsewhere due to the volume of chips and level of chip sophistication Taiwan provides.

There have been Taiwanese and other initiatives to offshore some of this production, but moving a semiconductor factory is difficult. Most of its value lies in workers' sophistication and know-how relevant to operating in a complex global supply chain. These workers are part of a free and dynamic market economy and demonstrate to the Chinese people what life and work look like in a free society.

Beacon of Democracy – A Liberalist View

Taiwan exemplifies a functioning democratic Chinese society. It is an embarrassment and a threat to the authoritarian PRC regime. Specifically, some argue that Taiwan demonstrates that a Chinese-based society can also be a liberal democratic society and that its existence directly affronts the Chinese Communist Party (CCP) arguments that China must be ruled through socialism with Chinese characteristics.[22] In recent congressional testimony, a labor camp survivor testified,

> [l]ook at what Taiwan has showcased for us, that the traditional Chinese values, they keep that very well, but they also live in a very vibrant democracy . . . so Taiwan's example is actually the sore [point] for the CCP, that's the main reason why they would like to take Taiwan over, to say that the Chinese people only deserve dictatorship.[23]

Democracies generally demonstrate to people living under authoritarian regimes that they have the freedom to criticize and hold their elected officials accountable and to choose their own leaders when the people are not well-served. Unlike the situation in other democracies, however, Mandarin is the most common language used by the media in Taiwan and on the mainland. People in China often view Taiwanese news and see Taiwan's example. Taiwanese soap operas, pop stars, and the like have fan bases in mainland China and remind viewers of the freedoms, choice, and dynamism free societies possess. A pipeline of social and political examples to the people of China operates as a counter gray zone activity

22.   Rana Mitter, "New Characteristics for Chinese Socialism? How a CCP Resolution Connects Xi to China's Marxist Past," *Foreign Affairs* (website), December 20, 2021, https://www.foreignaffairs.com/articles/china/2021-12-20/new-characteristics-chinese-socialism.

23.   *The Chinese Communist Party's Threat to America, Before the House of Representatives, Select Committee on the Strategic Competition Between the US and the Chinese Communist Party*, 118th Cong. (2023) (statement of Ms. Tong Yi), 51:56, https://www.rev.com/blog/transcripts/republican-led-house-committee-on-china-holds-first-hearing-transcript.

that authoritarian regimes desperately seek to suppress. A critical aspect of any attempt to curb authoritarian aggression is to lay the foundation for democratic change in a regime, and the United States and its democratic allies should support such an effort. Taiwan serves an important role in the future dynamics of how the people of China will develop their political future—perhaps as a democracy with Chinese characteristics.

Taiwan is also strategically important to the collective and self-defense of the United States and its democratic allies. At the beginning of her recent speech to the George W. Bush Presidential Center, Tsai quoted Chairman Oleksandr Merezkho of the Ukrainian Parliament's Foreign Affairs Committee, who stated, "The grand strategy of authoritarian regimes is to divide and destroy democracies one by one." Building on the statement, Tsai argues her case plainly:

> . . . [D]emocracies and the rules based international order are being challenged on a daily basis. . . . The dangerous potential of authoritarian regimes to corrode democratic institutions and tarnish human rights cannot be ignored. Russia's unprovoked invasion of Ukraine serves as a prime example. . . . [D]ictatorships will do whatever it takes to achieve their goal of expansionism. . . . [T]he Taiwanese people are very familiar with such aggression. . . . [Taiwan] has been confronted by increasingly aggressive threats from our authoritarian neighbor, . . . [f]rom daily military intimidations, gray zone activities, and influence operations, to cyber attacks and periodic attempts at economic coercion. . . . The menacing behavior of authoritarian regimes should be a wake-up call to all democracies. We must work together to strengthen our resilience and safeguard our values.[24]

The fall of Taiwan to China would be a net loss to democratic forces everywhere; a gain of some other territory could not easily replace a self-actualized democracy lost to authoritarianism. Afghanistan should

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24. Tsai Ing-wen, "The Struggle for Freedom: Remarks from Taiwan President, Tsai Ing-wen" (transcript), George W. Bush Presidential Center, November 16, 2022, https://www.bushcenter.org /publications/the-struggle-for-freedom-remarks-from-taiwan-president-tsai-ing-wen.

remind us that democracy is not fostered under the influence of a gun but must grow from the will of the people.

The Biden-Harris administration has begun to solidify mutual support among democracies by organizing and a "Summit for Democracy" in 2021 and 2023, to which Taiwan was invited.[25] The organization of these summits tacitly acknowledges that other international organizations may no longer be appropriate forums for promoting democratic ideals. The UN, though certainly a useful forum to promote peace and advance diplomatic solutions to world problems, was organized in a completely different environment, with fewer countries and a post-war anachronistic understanding of global power relationships. Although the UN has elements designed to promote democratic ideals, such as the UN Human Rights Council, the membership does not always exemplify or promote its ideals.[26] The rise of China and recent Russian aggression has essentially divided the world into two camps—authoritarian and democratic—though in a world not so easily defined as in the Cold War. The Biden summits attempt to rally democratic forces to resist PRC aggression on the political level. It may serve future administrations to shape these summits into a recognizable international organization to marshal democratic forces in the new global dynamic, especially if the UN can no longer accomplish that task. Inviting Taiwan signals the recognition of a new international order and that the United States stands by its democratic allies and partners.

Credibility to US Allies

Credibility among our allies is often touted as a reason for the United States to engage in global affairs. Credibility was the justification for US engagements in Kosovo and in Vietnam, and credibility is often invoked with regard to NATO's involvement in the current Ukraine crisis. In general, especially for our democratic allies, US assistance to like-minded states

25. State Department, "Summit for Democracy 2021: Invited Participants," U.S. Department of State (website), n.d., https://www.state.gov/participant-list-the-summit-for-democracy/; and "Briefing Room: Joint Statement between Costa Rica, the Netherlands, the Republic of Korea, the Republic of Zambia, and the United States on the Announcement of the Second Summit for Democracy" (press release, Washington, DC: White House, November 29, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/29/joint-statement-between-costa-rica-the-netherlands-the-republic-of-korea-the-republic-of-zambia-and-the-united-states-on-the-announcement-of-the-second-summit-for-democracy/.
26. "Membership of the Human Rights Council for the 17th cycle, 1 January–31 December 2023," United Nations Human Rights Council (website), n.d., https://www.ohchr.org/en/hr-bodies/hrc/current-members; and Patrick Wintour, "UN Vote to Ignore Human Rights Abuses in China Leaves West in Dead End," *Guardian* (website), October 6, 2022, https://www.theguardian.com/world/2022/oct/06/un-vote-ignore-human-rights-abuses-china-leaves-west-dead-end.

clearly signals whether democracies have a reliable security partner. So what does it mean for Taiwan?

To answer that question, one should analyze allies' views of the regional and perhaps global strategic environment, should Taiwan fall into the hands of the People's Republic of China.[27] It is not just a question of whether the United States would renege on a commitment should the People's Republic of China attack Taiwan, but also of the security situation in which our allies and partners would find themselves in such an event. The United States no longer has a mutual defense treaty with the government of Taiwan, but continuous arms sales and policy statements from at least two US presidents appear to have committed the United States to its defense. If these gestures prove bluffs, it is hard to imagine that many countries that would continue relying on the United States for their security. Some may go their own way, and some may default to what they see as the inevitable—being sucked into the PRC's economic and security orbit.

Since the start of the Ukraine conflict and its impact on the Taiwan situation, Japan has doubled its defense budget in a clear sign that it views its security is in peril.[28] Such spending will nearly surpass Russia's military budget.[29] Moreover, Japanese leadership has openly pushed for a change to the pacifist portion of Japan's constitution.[30] These moves are reactions to what the Japanese government has already labeled an *existential* threat to Japan itself—an attack on Taiwan.[31] Recently assassinated Japanese Prime Minister Shinzo Abe institutionalized the use of "important

27.   David Santoro and Ralph Cossa, eds., *The World After Taiwan's Fall, Issues & Insights* 53, SR 2 (Honolulu: Pacific Forum International, 2023), https://pacforum.org/publication/issues-insights-vol-23-sr2-the-world-after-taiwans-fall.

28.   Ben Dooley and Hisako Ueno, "Japan Moves to Double Military Spending, With a Wary Eye on China," *New York Times* (website), December 16, 2022, https://www.nytimes.com/2022/12/16/world/asia/japan-national-security-strategy.html.

29.   Fumio Kishida, *National Security Strategy of Japan* (Tokyo: National Security Council, 2022), as quoted in Lucy Craft, "Japan to Double Defense Spending, Gain Missile amid Regional Threats," *CBS News* (website), December 16, 2022, www.cbsnews.com/news/japan-defense-force-spending-budget-doubling-china-taiwan-north-korea/; and Isabel Reynolds, "Japan's Rising Defense Budget Is Now Nearly on Par with Russia," Bloomberg (website), December 5, 2022, https://www.bloomberg.com/news/articles/2022-12-06/japan-s-kishida-hikes-5-year-defense-spend-to-about-315-billion#xj4y7vzkg.

30.   William Gallo, "Japan's Abe Brought Lasting Change to Country's Defense Approach," VOA News (website), July 8, 2022, https://www.voanews.com/a/japan-s-abe-brought-lasting-change-to-country-s-defense-approach-/6650690.html; Donald Kirk, "Japan May Be Ready to Break Away from Decades of Pacifism," *Hill* (website), December 19, 2022, https://thehill.com/opinion/international/3779084-japan-may-be-ready-to-break-away-from-decades-of-pacifism/; and Hideki Kitami, "Survey: Record 56% of Voters Back Changes to Constitution," *Asahi Shimbun* (website), May 3, 2022, https://www.asahi.com/ajw/articles/14612968.

31.   Sanbeer Singh Ranhotra, "If China Attacks Taiwan, Japan Will Attack China," TFI Global (website), July 7, 2021, https://tfiglobalnews.com/2021/07/07/if-china-attacks-taiwan-japan-will-attack-china/.

partner" and "precious friend" with reference to Taiwan: "A Taiwan emergency is a Japanese emergency, and therefore an emergency for the Japan-US alliance."[32] He continued: "It is time to abandon this ambiguity strategy. The people of Taiwan share our universal values, so I think the US should firmly abandon its ambiguity."[33] It was reported that Japanese Prime Minister Fumio Kishida recently stated that "the front line of the clash between authoritarianism and democracy is Asia, and particularly Taiwan."[34] Japan, which has the world's third-largest economy, could and would defend itself if a theoretical loss of Taiwan tests US credibility. As a reemergent major military force, Japan would certainly change world power dynamics.

In contrast, South Korea has attempted to act as a pivot state since Russia's invasion of Ukraine, despite its long-standing mutual defense treaty with the United States and calls for greater ties.[35] South Korea initially resisted independent sanctions on Russia, citing that growing trade links were in line with South Korea's "more traditional stance of balancing between Beijing and Washington."[36] This stance has developed simply because of South Korea's geopolitical position and enormous trade ties with its giant neighbor, the People's Republic of China.[37] Although South Korea has recently gestured for greater ties with the United States, its long-term interests may gravitate toward China, and recent history might indicate a wait-and-see position should international support

32.   David Sacks, "Shinzo Abe Transformed Japan's Relationship with Taiwan to Counter Threats from China," *Asia Unbound* (blog), Asia Program, Council on Foreign Relations, July 13, 2022, https://www.cfr.org/blog/shinzo-abe-transformed-japans-relationship-taiwan-counter-threats-china; and Ben Blanchard, "Former PM Abe Says Japan, U.S. Could Not Stand by If China Attacked Taiwan," Reuters (website), November 30, 2021, https://www.reuters.com/world/asia-pacific/former-pm-abe-says-japan-us-could-not-stand-by-if-china-attacked-taiwan-2021-12-01/.

33.   Ken Moriyasu, "U.S. Should Abandon Ambiguity on Taiwan Defense: Japan's Abe," *Nikkei Asia* (website), February 27, 2022, https://asia.nikkei.com/Politics/U.S.-should-abandon-ambiguity-on-Taiwan-defense-Japan-s-Abe.

34.   Richard Haass and David Sacks, "The Growing Danger of U.S. Ambiguity on Taiwan Biden Must Make America's Commitment Clear to China—and the World," *Foreign Affairs* (website), December 13, 2021, https://www.foreignaffairs.com/articles/china/2021-12-13/growing-danger-us-ambiguity-taiwan.

35.   Scott A. Snyder, "In Brief: How South Korea's Foreign Policy Could Change under the New President," Council on Foreign Relations (website), March 10, 2022, https://www.cfr.org/in-brief/south-korea-election-new-president-yoon-foreign-policy.

36.   Andrew Yeo, "How Will South Korea's New President Approach Russia's Ukraine Invasion?," *Diplomat* (website), May 7, 2022, https://thediplomat.com/2022/05/how-will-south-koreas-new-president-approach-russias-ukraine-invasion/; Seong-Hyon Lee, "South Korean Angle on the Taiwan Strait: Familiar Issue, Unfamiliar Option," Stimson (website), February 23, 2022, https://www.stimson.org/2022/south-korean-angle-on-the-taiwan/; and Zaini Majeed, "South Korea President Yoon Accused of Avoiding Pelosi after Her Taiwan Visit Angers China," REPUBLICWORLD.COM (website), August 4, 2022, https://www.republicworld.com/world-news/rest-of-the-world-news/south-korea-president-yoon-accused-of-avoiding-pelosi-after-her-taiwan-visit-angers-china-articleshow.html.

37.   Konstantin Asmolov, "Details of the Economic Relations between PRC and South Korea in 2021," New Eastern Outlook (website), November 23, 2021, https://journal-neo.org/2021/11/23/details-of-the-economic-relations-between-prc-and-south-korea-in-2021/.

for Taiwan deteriorate. With about 28,000 US troops stationed in South Korea, the country would likely find itself embroiled in any conflict in the Taiwan Strait, if not a direct target of China's ire.

Conversely, a PRC-controlled Taiwan would strain US-Korean relations and lead the South Korean government to question the US alliance as China further further occupies the waters surrounding their country. Another formal US ally, the Philippines, has now seen a second president who has demurred in challenges with Beijing. Newly elected Philippine President Ferdinand Marcos has sought to ignore the International Court of Arbitration ruling concerning PRC territorial claims around Philippine waters. Other domestic dynamics, however, make the regional geopolitical situation difficult to navigate. The United States continues to supply the Philippines with armaments, and national security forces remain wary of any closer ties to an ever-encroaching People's Republic of China. In the past, the many ethnic Chinese who controlled a large portion of the economy had closer ties to Taiwan, but there are growing economic ties to the People's Republic of China. These loyal citizens of the Philippines may naturally grow enough PRC ties that the country's interests will change.[38] Like South Korea, a PRC-controlled Taiwan could cause the Philippines to become ever more ambivalent toward the United States.[39]

Although further away from Taiwan, Australia has vocally pushed back in the Taiwan Straits scenario. In a November 13 interview, Australian Minister for Defence Peter C. Dutton averred it would be "inconceivable that we wouldn't support the US in an action if the US chose to take that action" with regard to Taiwan.[40] In other words, even powers outside the immediate region find strategic value in Taiwan and are willing to go to war over it.

The bottom line is that the loss of Taiwan to PRC control will be seen as a signal by allies and partners that the United States can no longer run the show in the Pacific—at least not solely—and is unable to maintain a rules-based order in the Pacific. That momentum would be on the side of China, and countries in the region should go along to get along with the new sheriff in town. Even in peace time, however, this new balance of power would see a more expansive range for PLAN

38.   "Philippines – China Relations," Global Security (website), n.d., https://www.globalsecurity.org/military/world/philippines/forrel-prc.htm.
39.   Duyeon Kim, "If Taiwan Falls to China: Implications for the Korean Peninsula," in *World After Taiwan's Fall*, ed. David Santoro and Ralph Cossa (Honolulu: Pacific Forum International, 2023), 11, 47, 72, https://pacforum.org/publication/issues-insights-vol-23-sr2-the-world-after-taiwans-fall.
40.   Colin Clark, "Aussies Would Join US to Defend Taiwan: Defense Minister Says 'Inconceivable' They Wouldn't," Breaking Defense (website), November 15, 2021, https://breakingdefense.com/2021/11/aussies-would-join-us-to-defend-taiwan-defense-minister-says-inconceivable-they-wouldnt/.

operations along their (and US) coastlines.[41] The PLA Navy is already projecting its growing blue-water fleet around American coastal territories, such as Guam.[42]

Conclusion and Recommendations for Action

This article provided a forthright analysis of basic factors to consider when evaluating the strategic environment concerning Taiwan and related US interests, including the geopolitical, commercial, and ideological interests of the United States and its democratic allies and partners in managing a new great-power dichotomy between authoritarian and democratic states. The forthcoming part two will further analyze changes in this dynamic, to include a review of domestic politics in Taiwan, the One China Policy basis for the triangular relationship between China, Taiwan, and the United States, an analysis of statements of US presidents and in past and present *National Security Strategies*, and policy reactions to provocative Chinese military drills around Taiwan in response to Pelosi's Taiwan visit. Part one is contextual, presenting factors to consider regarding the island's importantance to US and allied policy objectives. Read part two of this article in a future issue. It will provide concrete recommendations on how to progress the US relationship between China-Taiwan in favor of democratic ideals.

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41.   Kristin Huang, "Chinese Navy Drills Reveal Greater Ability to Project Power Deeper into the Pacific, Analysts Say," *South China Morning Post* (website), January 7, 2023, https://www.scmp.com/news/china/military/article/3205906/chinese-navy-drills-reveal-greater-ability-project-power-deeper-pacific-analysts-say.

42.   Peter Suciu, "China Just Sailed an Aircraft Carrier Near One of America's Biggest Pacific Bases," 19FortyFive (website), December 30, 2022, https://www.19fortyfive.com/2022/12/china-just-sailed-an-aircraft-carrier-near-one-of-americas-biggest-pacific-bases/.

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Geniuses Dare to Ride Their Luck:
Clausewitz's Card Game Analogies

Nicholas A. A. Murray

ABSTRACT: Scholars have been using the wrong card games to analyze Carl von Clausewitz's analogies in *On War*, which has led to errors in understanding his ideas. This article identifies the games Clausewitz discusses, allowing for a more accurate interpretation of his original meaning for the study of war. Since Clausewitz's ideas underpin strategy development within service education systems, it is critical his ideas are fully understood in context.

Keywords: card games, luck/chance, genius, gambling, daring, probability, trinity, cheating

Carl von Clausewitz's argument that chance and probability play a central role in war is one of his most famous ideas and a component of his "paradoxical trinity," those elements crucial to understanding war's nature.[1] Knowing how Clausewitz sees the role of chance is central to understanding what he thinks war is. In *On War*, Clausewitz uses the analogy of card games to help explain the nature of war and the role of chance or luck, but he does not name the card games in question. This lack of specificity has led scholars and commentators to use bridge, poker, or blackjack as examples of card games mimicking war; likewise, game theory uses games like poker and chess as the "fundamental unit of analysis."[2] The problem with using these games to understand the role of chance and player interaction is that they were not invented or played in Germany until after Clausewitz's death, and they do not closely resemble the games mentioned in his writing. Thus, examples like poker, bridge, or blackjack are wrong given the context, and, therefore, the conclusions drawn from such analyses will not match his intended meaning. Furthermore, in Clausewitz's time, gambling and cards were rife with cheating, which is rarely addressed when discussing his ideas about chance, luck, and emotion. Omitting these contextual factors

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1. Carl von Clausewitz, *Vom Kriege: Hinterlassene Werke über Krieg und Kriegführung*, three volumes (Berlin: Ferdinand Dümmler, 1832–34), bk. 1, chap. 1, 1:31; and Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1989), bk. 1, chap. 1.
2. Paul Erickson et al., *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality* (Chicago: University of Chicago Press, 2013), 138.

is a major oversight, given Clausewitz's emphasis on situating theory within the historical context from which it emerged.

Clausewitz explicitly criticizes previous theorists for their lack of effective analysis of historical evidence and context.[3] Peter Paret, the late coeditor and co-translator of the English-language edition of *On War*, similarly admonishes readers that "Clausewitz's ideas are expressed in terms of the years in which they were written, and do not always readily translate into equivalents today."[4] To understand Clausewitz, we must correctly identify and analyze the specific games to which he alludes.

This article identifies faro, skat, and ombre as the gambling and card games Clausewitz references and considers what this choice, and the effect of cheating, means for understanding his ideas regarding luck, chance, the "paradoxical trinity," and war and strategy. Furthermore, if war resembles a card game where cheating is routine, these games must involve far greater chance and luck and far less control and predictability than the games often found in analyses of Clausewitz's writing.[5] Thus, there is a disconnect between how we think Clausewitz understood the problem of war and how he actually understood it.

Wrong Game, Wrong Outcome

Some commentators, such as Antulio J. Echevarria II, Justin Conrad, and Thomas Waldman, use blackjack or poker to illustrate Clausewitz's analogy of war as a card game. Others, including Alan Beyerchen, do not use a specific card game but instead focus on the interactive nature of card games, in which presumably the ability to learn an opponent's character and personal tendencies makes the game "a matter of skill as well as odds."[6]

3.   Clausewitz, *On War*, 61, 63, 70. See also Jan Willem Honig, "Clausewitz and the Politics of Early Modern Warfare," in *Clausewitz: The State and War*, ed. Andreas Herberg-Rothe, Jan Willem Honig, and Daniel Moran (Stuttgart, DE: Franz Steiner Verlag, 2011), 29–48.
4.   Peter Paret, *Clausewitz in His Time: Essays in the Cultural and Intellectual History of Thinking about War* (New York: Berghahn Books, 2015), 17.
5.   Antulio J. Echevarria II, "Clausewitz and the Nature of the War on Terror," in *Clausewitz in the Twenty-First Century*, ed. Hew Strachan and Andreas Herberg-Rothe (New York: Oxford University Press, 2007), 196–218; and Michael I. Handel, *Masters of War: Classical Strategic Thought* (Abingdon, UK: Routledge, Taylor & Francis Group, 2000), 240.
6.   Antulio J. Echevarria II, *Clausewitz and Contemporary War* (New York: Oxford University Press, 2013), 72; Justin Conrad, *Gambling and War: Risk, Reward, and Chance in International Conflict* (Annapolis, MD: Naval Institute Press, 2017); and Alan Beyerchen, "Clausewitz and the Non-Linear Nature of Warfare: Systems of Organized Complexity," in *Clausewitz in the Twenty-First Century*, 53, as quoted in Thomas Waldman, "War, Clausewitz, and the Trinity" (PhD diss., University of Warwick, 2009), 257, https://core.ac.uk/download/pdf/40048786.pdf; Alan Beyerchen, "Clausewitz, Nonlinearity, and the Unpredictability of War," *International Security* 17, no. 3 (Winter 1992–93): 59–90; and Beyerchen, "Systems of Organized Complexity," in *Clausewitz*, 45–56.

There is no inherent problem with this logic, except we now know these games did not exist or were not popular in Germany during Clausewitz's lifetime.

Additionally, the degree of cheating in eighteenth- and nineteenth-century gambling and card games further undermines claims that Clausewitz's card game analogies demonstrate a reasonable degree of calculable probability in war. In the case of Beyerchen's arguments about nonlinearity and great uncertainty, this information supports his broader point that war is inherently unpredictable.[7]

Analysis of the wrong games has led scholars to misunderstand Clausewitz and develop faulty conclusions. When possible, it is best to identify the correct games in Clausewitz's writing to understand his meaning. For example, in their translation of *On War*, Michael Howard and Peter Paret translate the expression *Vorteil der Hinterhand* ("advantage of [the] last hand") as "riposte," which poorly fits the context of *On War* and obscures the original connection to the card game skat.[8] Their word choice is curious as the other two English translations of *On War* retain the original reference to cards.[9] Given the market dominance of the Howard and Paret translation, it is no wonder the connection to card games has been lost in this instance. Elsewhere, in "Über das Fortschreiten und den Stillstand der kriegerischen Begebenheiten," Clausewitz uses the card game faro to make a point about gambling.[10] Paret and Daniel Moran neglect to mention faro and comment, "The comparison with games points to the belief that the cardplayer tends not to play his best cards at once, but gradually in the course of the game."[11] That may be true, but the card game Paret and Moran describe bears no relation to faro, the game explicitly named in Clausewitz's essay, which is a game where the bets are made before each card is drawn and the players do not hold cards to play later.[12] Thus, their analysis is wrong.

Such misleading analyses lead to false conclusions about some of Clausewitz's central ideas. After all, if a game is reasonably

7. Beyerchen, "Unpredictability of War," 59–90.
8. Clausewitz, *On War*, bk. 6, chap. 28, 489, and bk. 7, chap. 16, 550; and Clausewitz, *Vom Kriege*, 2:395, 3:46.
9. Carl von Clausewitz, *On War*, trans. O. J. Matthijs Jolles (New York: Modern Library, 1943), 469, 539; and Carl von Clausewitz, *On War*, trans. J. J. Graham (New York: Barnes and Noble, 2004), 548, 631.
10. Carl von Clausewitz, "Über das Fortschreiten und den Stillstand der kriegerischen Begebenheiten," in *Ausgewählte militärische Schriften*, ed. Gerhard Förster and Dorothea Schmidt (Berlin: Militärverlag der Deutschen Demokratischen Republik, 1980), 384.
11. Carl von Clausewitz, *Carl von Clausewitz: Two Letters on Strategy*, ed. and trans. Peter Paret and Daniel Moran (Fort Leavenworth, KS: Combat Studies Institute, 1984), 29n11; and Peter Paret, *Clausewitz and the State: The Man, His Theories, and His Times* (Princeton, NJ: Princeton University Press, 2007), 361.
12. Clausewitz, "Über das Fortschreiten," *Ausgewählte*, 384.

predictable—and not subject to cheating—the role of chance is minimal. Players would be less subject to sways of emotion wrought by bad luck and can make simpler, rational decisions. If a card game such as faro is not as interactive as poker or blackjack, what would it mean for his theory? Would it mean war is not interactive? That would not make sense, as Clausewitz tells readers almost from the first sentence of *On War* that war is inherently interactive.[13] His meaning in this context is that any interaction must include all the elements of his trinity and be subject to all their whims.

Clausewitz's Correct Card Games

In *On War*, Clausewitz, directly and indirectly, cites the card games faro, skat, and ombre as an analogy for war. The key to understanding the significance of these games lies in their degree of luck and the nature of the interaction between players. The games have a more extreme calculable probability: they are far chancier than the games often (inaccurately) cited on his behalf and are not all interactive. They were also known to be rampant with cheating, which has profound ramifications for how Clausewitz's contemporaries would have understood his arguments.

Clausewitz uses the analogy of card games several times in *On War*, twice explicitly and twice implicitly. The first explicit mention occurs in book 1, chapter 1, when he asserts, "In short, absolute, so-called mathematical, factors never find a firm basis in military calculations. From the start there is an interplay of possibilities, good luck and bad that weaves its way throughout the length and breadth of the tapestry. In the whole range of human activities, war most closely resembles a game of cards."[14] Significantly, his assessment of luck's role in warfare precludes predictability. Therefore, games like blackjack cannot represent Clausewitz's depiction of war, given that something as simple as card counting allows blackjack players to alter the odds in their favor. One of Clausewitz's key points is that war is not predictable or is so difficult to calculate that "Newton himself would quail before the algebraic problems it could pose."[15] If one of history's greatest mathematical minds would shrink before the probability problems war would pose, then mere mortals have no chance of successfully calculating its odds. The odds of accurately predicting success in war would more closely resemble the odds in a game of faro. The broader context of book 1, chapter 1 of *On War* shows how war in its ideal form can move to the extreme, and thus, the risk of serious

13.   Clausewitz, *On War*, bk. 1, chap. 1, sect. 2, 75.
14.   Clausewitz, *On War*, bk. 1, chap. 1, 86; and Clausewitz, *Vom Kriege*, 1:24.
15.   Clausewitz, *On War*, bk. 8, chap. 3b, 586.

escalation is real. Simply waging war is a huge gamble that can put the entire state at risk, with no ability to calculate the probability of a specific outcome with precision. Clausewitz's explicit mentions of games such as faro are extremely important to the point he was making, as they tell us he was thinking of extreme odds, with little-to-no chance of accurate calculation, albeit with tremendous potential for huge success— if one, therefore, was willing to make a bet.

Faro is a banking card game, and its near incalculability and predisposition to cheating make it little more than an adapted game of dice.[16] It descends from the game *basset*, which was notorious for heavy losses, swings of fortune, and its similarity to a lottery.[17] In faro, players bet upon the turn of one card and could win "15, 30, and 60 times the amount staked" by accumulating bets. Presumably, the possibility of high returns accounts for its popularity despite the high risk involved.[18] As Richard Seymour notes in *The Compleat Gamester*, gambling in general and faro, in particular, were notorious for cheating and fraud, which readers of Clausewitz should bear in mind when Clausewitz explicitly mentions the game.[19]

The second explicit mention of card games occurs in book 8 in the context of the discussion of wars in the era prior to the French Revolution, in which states could calculate the probabilities of any given moment instantly. As such, "[t]he conduct of war thus became a true game, in which the cards were dealt by time and by accident. In its effect it was a somewhat stronger form of diplomacy, a more forceful method of negotiation, in which battles and sieges were the principal notes exchanged."[20] In this case, Clausewitz frames the card game analogy with limited risk and a reasonable degree of calculability, with warring states unlikely to move to an extreme level of violence and with relatively clear and predictable means. This description points to a different card game than the earlier faro analogy, and it is reasonable to believe Clausewitz's contemporaries would have understood this difference because faro was a game of almost pure chance with lots of cheating.

Instead, the above description appears to match the game of skat—which was popular in Germany during Clausewitz's lifetime— perhaps indicating Clausewitz had different games in mind for different concepts. Clausewitz indirectly mentions skat via the phrase

16.   David Parlett, *The Oxford Guide to Card Games* (New York: Oxford University Press, 1990), 76–79.
17.   Richard Seymour and Charles Johnson, *The Compleat Gamester: In Three Parts* (London: J. Hodges, 1750), 110, https://books.google.com/books?id=CrtBAQAAMAAJ.
18.   Parlett, *Card Games*, 77.
19.   Seymour and Johnson, *Compleat Gamester*, 118, 127.
20.   Clausewitz, *On War*, bk. 8, chap. 3b, 589–90; and Clausewitz, *Vom Kriege*, 3:113.

Vorteil der Hinterhand. Clausewitz uses this phrase twice in *On War*, once in *Der Feldzug von 1796 in Italien*, and again when writing on Frederick the Great.[21] The expression *Vorteil der Hinterhand* denotes the advantage of playing the last card or hand and is closely associated with skat.

Skat originated in Thuringia in the early nineteenth century, just southwest of where Clausewitz spent much of his life.[22] It is a bidding trump-taking game involving three players, each of whom has a role: the "Forehand," "Middlehand," and "Rearhand" (the *Hinterhand*).[23] The advantage generally sits with either the Forehand or Rearhand, with the latter holding some clear advantages in bidding and play, as the former dictates which card is played first, and the latter sees what cards others have played before deciding what to do.[24] A nineteenth-century description of the game indicates the necessity of luck and daring:

> Very few hands, and those of very rare occurrence, are absolutely certain to win a given game; while, on the other hand, a concurrence of lucky accidents may enable you to bring a very poor, indeed a downright hopeless-looking hand, to a successful issue, and overthrow one which seems to be all but certain of winning.[25]

This description indicates that strategy and skill are important but still subordinate to the play of chance and probability. Throw in the additional factors of betting, cheating, and the corresponding excitement or apprehension these possibilities generate, and the importance of emotion, reason, and chance becomes apparent. It is a key point that as reasonably calculable as the wars prior to the French Revolution may seem, even those wars were subject to the vagaries of chance and emotion.

Clausewitz directly mentions a third game, ombre, in his history of the campaign in Russia. While discussing General Hans Karl von Diebitsch, Clausewitz notes, "[Diebtisch] wished, however, like an ombre player,

21. Carl von Clausewitz, *Der Feldzug von 1796 in Italien: Hinterlassenes Werk* (Berlin: Ferdinand Dümmler, 1833), 339; Carl von Clausewitz, *Napoleon's 1796 Italian Campaign*, trans. and ed. Nicholas Murray and Christopher Pringle (Lawrence: University Press of Kansas, 2018), sect. 74, 279 and 279–80n11; and Carl von Clausewitz, *Strategische Beleuchtung mehrerer Feldzüge von Sobieski, Münich, Friedrich dem Großen und dem Herzog Carl Wilhelm Ferdinand von Braunschweig, und andere historische Materialien zur Strategie* (Berlin: Ferdinand Dümmler, 1837), 144.

22. Parlett, *Card Games*, 271–79.

23. Parlett, *Card Games*, 273.

24. A. Hertefeld, *The Game of Skat in Theory and Practice* (London: George Routledge & Sons, 1893), 28–31.

25. Hertefeld, *Game of Skat*, 15.

to play a small trump, in order to see how the cards played out."[26] Furthermore, Clausewitz's friends corresponded about ombre. Professor Johann Benzenberg wrote to August von Gneisenau, "in Warburg, where I was staying for the sake of studying, I learned nothing very well but *ombre*."[27] Clausewitz attended parties with Gneisenau where card games were played and likely had some familiarity with ombre since his friends played it; it was wildly popular, and, not least, because he specifically named it.

Ombre (or *hombre*, "man") was "the greatest card game of the Western World" throughout the eighteenth and well into the nineteenth century.[28] The game is played between three players with a special 40-card deck. Each player receives nine cards, and then bidding begins with "the highest bid [determining] hombre, who, depending on the bid, may declare trumps or exchange cards."[29] Players follow suit, where possible, and the player with the highest card of the original suit played wins the trick unless there is a trump played, in which case the highest trump wins. Additionally, certain cards function as *matadors*, in essence, a type of trump card, adding an extra element of uncertainty and chance to the game.[30]

Ombre rewards "ambition, boldness, and cunning," and its "strategies typically rest on *creating* risk, even ignoring risk. . . . In many ways the play of hombre closely resembles a military campaign, with two players temporarily allied to defeat a common foe." The game is one of daring, and, as scholar Jesse Molesworth describes it, its "pleasure . . . lies not really in winning but in making one's name on the field of battle: a daringly waged campaign ending in failure is more honorable than a cautiously waged campaign ending in victory."[31] The game resembles Clausewitz's views on military genius, including the need for boldness and his caustic criticism

26.   Carl von Clausewitz, *Der Feldzug von 1812 in Russland, der Feldzug von 1813 bis zum Waffenstillstand und der Feldzug von 1814 in Frankreich* (Berlin: Ferdinand Dümmler, 1835), 210–11. See also Carl von Clausewitz, *The Campaign of 1812 in Russia*, trans. anon. (London: John Murray, 1843), 221.
27.   Johann Benzenberg to August von Gneisenau, July 3, 1816, in *Das Leben des Feldmarschalls Grafen Neidhardt von Gneisenau*, vol. 5 of 5, Georg Heinrich Pertz and Hans Delbrück (Berlin: Georg Reimer Verlag, 1880), 5:123–126.
28.   Parlett, *Card Games*, 198.
29.   Jesse Molesworth, *Chance and the Eighteenth-Century Novel: Realism, Probability, Magic* (New York: Cambridge University Press, 2010), 72.
30.   Parlett, *Card Games*, 198.
31.   Molesworth, *Chance*, 72–73.

of cautious generals.[32] Furthermore, it appears somewhat less predictable than skat, yet more predictable than faro.

In addition to the above, Clausewitz provides other clues elsewhere. In one essay, he makes a point about risk and probability using faro.[33] In a letter to Clausewitz discussing the essay, Gneisenau compliments Prince Gebhard Leberecht von Blucher's "daring" [*verwegener Spieler*] in decision making and mentions that Blucher was "well practiced with *Pharao* and *Würfel*."[34] *Würfel* means "dice" but is a generic term for various dice games. Dice games were also riddled with cheating, as Clausewitz's comment about "loaded dice" in a letter to his wife indicates.[35] Gneisenau's use of the word *daring* in the context of risk-taking corresponds closely with Clausewitz's concept of daring and its role in military genius, and genius, of course, is the antidote to, or mitigator of, chance. Daring forms a significant part of his idea of genius as these games were synonymous with cheating, and only a daring player would have the courage to make the necessary bets. Cheating and gambling comprised two parts of a whole.

Cheating was rampant in card and gambling games of the era, and gambling houses and card games were synonymous with fraud. As eighteenth-century writer Richard Seymour notes in his guide, *The Compleat Gamester*, "there is fraud in all games."[36] The role of cheating in Clausewitz's thoughts is unclear, but his choice of games provides some indications. Skat seems to align more closely with his description of more limited war, while faro seems to match his description of war in its more absolute form. Faro was notorious for cheating, which may imply Clausewitz sees war's ideal form as one where cheating increases fog and friction and changes the character of war in more profound ways. For example, finding out a game is rigged will likely upset players and cause them to seek recompense or even revenge. Alternatively, they might decide to cheat from the start, leading to an escalation of cheating by other players, or they might use violence

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32.   Clausewitz, *On War*, bk. 1, chap. 3, 100–112; Carl von Clausewitz, *Napoleon Absent, Coalition Ascendant: The 1799 Campaign in Italy and Switzerland*, vol. 1, trans. and ed. Nicholas Murray and Christopher Pringle (Lawrence: University Press of Kansas, 2020), sect. 13, 111 and 120, and sect. 36, 281 and 283; Carl von Clausewitz, *The Coalition Crumbles, Napoleon Returns: The 1799 Campaign in Italy and Switzerland*, vol. 2, trans. and ed. Nicholas Murray and Christopher Pringle (Lawrence: University Press of Kansas, 2021), sect. 65, 61, and sect. 91, 232.

33.   Clausewitz, "Über das Fortschreiten," *Ausgewählte*, 384–85.

34.   Gneisenau to Carl von Clausewitz, April 6, 1817, in Pertz and Delbrück, *Das Leben*, 5:199–200.

35.   Carl von Clausewitz to Marie von Clausewitz, December 1, 1806, in Karl von Clausewitz and Marie von Clausewitz, *Ein Lebensbild in Briefen und Tagebuchblättern*, ed. Karl Linnebach (Berlin: Verlag von Martin Warneck, 1916), 69; and Vanya Eftimova Bellinger, *Marie von Clausewitz: The Woman Behind the Making of On War* (New York: Oxford University Press, 2016), 75.

36.   Seymour, *Compleat Gamester*, 211.

as a deterrent, which could result in other players turning to threats or violence to protect their interests. Players may make their own rules and rob each other, having decided not to go through the motions of a dishonest game.

For example, revolutionary France could be accused of cheating in the game of war for mobilizing its population in a manner the more traditional states opposed to France could not or would not countenance, which increased the financial costs and violence of the war and changed the war's character to suit their interests and move away from the more limited character of war (which Clausewitz describes in book 8). Thus, the revolutionaries and Napoleon could be accused of not playing war by the rules agreed upon in spirit. The amount of cheating and extreme chance in faro seems to match Clausewitz's description of changing rules and the unpredictability of war. Once one player cheats, other players would be foolish not to cheat, unless they thought not cheating was the only way to retain their stakes. Once they lose their stake and realize they have been fleeced, it is logical that players would change how they approach the next game and either copy their opponents' behavior or escalate first. Clausewitz considered war even less certain, whose exit, therefore, required even more forethought, much the way sensible gamblers should have a clear idea of what they are willing to wager, why they are gambling, whether they will cheat, and what they are willing to risk.

The roles of cheating and escalation have important implications for wars of limited aims. One cheating party might escalate violence to a more absolute form of war, outweighing the value of the original political goals and leading to a more costly conflict. Perhaps ombre belongs here, since it seems to fit between the other two games Clausewitz references, neither extreme in chance or calculation, but a bit of both.

Genius, Luck, or Both?

In his writings, Clausewitz discusses the relationship of daring to chance, luck, and probability. In *On War* and his histories, he focuses most on the relationship between risk and chance within the context of the wars of Frederick the Great, the French Revolutionary Wars, and the Napoleonic Wars. In a letter dated September 20, 1806 (just before the

Battle of Jena), Clausewitz reflects on Frederick's victories at Rossbach and Leuthen, observing,

> The king gathered the remains of his armies and led them, thirty thousand strong, towards the ninety thousand Austrians near Leuthen in Silesia. He was determined to win everything back or lose it all, like a desperate gambler and—as our statesmen would do well to remember!—in this ardent courage, which is simply instinctive for a man of strong character, there lies the greatest wisdom.[37]

Therefore, Clausewitz's "greatest wisdom" is the courage to act in uncertainty. This idea is significant because the games he references contain a far greater degree of chance, including cheating, which logically means the strength of character required for decision making is greatly amplified. Boldness is a virtue.

Clausewitz's argument for daring relates to the need for commanders to make decisions despite the fog and friction of war and relates to the fact that luck will play a significant role. Readers should recall the considerable role luck plays in games like skat or faro and that there are no hands strong enough to guarantee success, making a daring strategy imperative—especially if one possesses a strong hand that might be the only opportunity to win big.

Clausewitz praises French General Barthélemey-Catherine Joubert for his boldness in the 1796 campaign in Italy.

> In this situation, which within a few days would surely have led to General Joubert's complete downfall, on 3 April he had the incredible luck to learn for certain from a colonel (Eberle by name, so probably a Tyroler), who had managed to get into the Drava valley disguised a peasant, that Bonaparte had successfully crossed the Alps. Joubert instantly decided to march through the Puster valley to join him, thus moving his line of retreat to that region where at least there were no enemy regular troops; and at the same time, by combining with the main army in the critical situation that it must be in, to be of decisive use to it.[38]

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37. Clausewitz and Clausewitz, *Ein Lebensbild*, 61–62. Thanks to Chris Pringle for his help in translating this passage via an e-mail exchange on March 29, 2021.
38. Clausewitz, *Napoleon's 1796 Italian Campaign*, sect. 72, 271 and 271n20.

Had this plan gone poorly, or if the information had been wrong, Joubert would have been cut off and likely annihilated. The risk he took was bold—and ultimately correct—because it worked, and inaction would have likely led to the loss of his force anyway. Had Joubert not acted, or been more cautious, he might have avoided blame for poor decision making, but he would not have achieved the success he did. Furthermore, Clausewitz highlights the "incredible luck" of the information arriving in the first place. Readers should consider what someone would have had to do to cross the Alps at that time of year while avoiding interception and getting waylaid, then successfully finding Joubert in time to provide the information. That Joubert had already experienced great luck meant he should continue trusting it.

Numerous examples in Clausewitz's historical writings resemble the descriptions of the gambling games he references rather than the more predictable ones typically analyzed. In the 1796 campaign, Napoleon made one of his biggest gambles, and again, it is important to provide Clausewitz's thoughts in a fuller form. He observes,

> That fierce desire to be the first at the gates of Vienna, to raise his name high above his rivals, while he dictated peace to the Emperor without anyone else involved, that sense of his personal power, that trust in his luck: that is what swept Bonaparte onto the victory path that opened up before him, with little calculation or weighing up of risk. He dared to take a huge gamble, because it was in his character and in his personal interest.[39]

At the time, Napoleon was far ahead of the rest of the French armies and had gambled repeatedly on the chance the Austrians would cave in if he kept pushing them—he might as well have bet big, as any small bet likely would not have delivered the subsequent Austrian offer of terms. Clausewitz explicitly addresses such behavior: "The French Revolution made the most daring of gamblers [Napoleon], always betting everything on one card. Since his appearance almost all campaigns have gained such a cometlike swiftness that a higher degree of military intensity is scarcely imaginable."[40] Thus, commanders became like players in faro, better off making one big bet, with the potential for significant gains and massive escalation, than frittering away resources in a series of small bets at low odds. If they lost, the result would be the same; and if they won, they would gain all on the turn of one card.

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39.   Clausewitz, *Napoleon's 1796 Italian Campaign*, sect. 74, 275–76.
40.   Clausewitz, "Über das Fortschreiten," *Ausgewählte*, 384–93.

Here lies the connection between luck, the rest of Clausewitz's trinity, and the need for *coup d'oeil* (vision) and *courage d'esprit* (moral courage). The essence of military genius is having the vision to see the potential gain and the moral courage to make the bet.

Clausewitz makes it clear that commanders must be willing to gamble and take risks and repeatedly criticizes those unwilling to do so. One of the regular recipients of his criticism was Archduke Charles.

> The fact that the French dispositions were not so excellent as we would have to imagine them to be in order to excuse the archduke's passivity is proved by the action of 8 June, so when we see the archduke making no such attempt [i.e., to force the issue in Switzerland], we may well say that at least for this section of the campaign, his military leadership lacks *the daring to take advantage of a favorable opportunity*. Since war is not purely the product of rigid functions between ends and means, but rather always retains something of the nature of gambling, so the art of command cannot entirely dispense with that element either; and a commander who is too reluctant to gamble will fall short in his winnings, and in the great ledger of military success he will get deeper into debt than he thinks.[41]

Clausewitz's and Charles's views on gambling in war are quite different. Charles's history of the same campaigns argues that "rashness" was a result of France's "incompetent leadership" and that the French Revolution encouraged the breaking of rules, "and expecting every gamble to produce results, [the revolutionaries] followed this impulse whenever they saw no other way out."[42] By contrast, Clausewitz asserts that the character of war had changed and that daring was essential in an irrational environment. Notably, Charles's views align closely with those of prominent contemporaneous writers, such as the great eighteenth-century theorist Maurice, count de Saxe.

Saxe argues that battles are too risky and should be avoided and contends it is possible to make war "without trusting anything to accident."[43] Applying pure reason can help avoid hasty or fear-based decisions,

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41.   Italics in the original, Clausewitz, *Coalition Crumbles*, sect. 66, 2:64.
42.   Karl Erzherzog von Österreich, *Geschichte des Feldzuges von 1799 in Deutschland und in der Schweiz*, vols. 1–3 (Vienna: Anton Strauss, 1814), 1:286–87.
43.   Maurice, count de Saxe, *Reveries, or, Memoirs Concerning the Art of War*, trans. anon. (Edinburgh: Sands, Donaldson, Murray, and Cochran, 1759), 226–27.

and accurate calculability could permit armies to make war without trusting to accident. This argument directly contradicts Clausewitz's teachings, where luck is a foundational part of his trinity of war. Furthermore, to make war without risk of accident presumes the ability to avoid chance and emotion. Clausewitz fundamentally rejects this presumption, as war itself constitutes chance, reason, and emotion.

As with luck and other Clausewitzian ideas beyond the scope of this article, Clausewitz sprinkles examples of emotion in decision making throughout his histories. For example, in his books on France's 1799 campaigns, he complains that commander Jean-Baptiste, Count Jourdan, "had no prospect at all of victory, so he went on to incur a defeat simply to avoid appearing inactive. This is a practice that criticism can never tolerate."[44] Simply put, Jourdan acted for action's sake, which was a waste. In the same history, Clausewitz criticizes General Baron Paul Kray for his moral failure to make a clear decision under trying circumstances.[45] In his earlier history of the 1796 campaigns in Italy, Clausewitz writes that during the height of the battle of Rivoli, Napoleon "saw the positive side of his situation [despite the precariousness of the French position], and his calm certainty made him seem like a demi-god to his generals and soldiers."[46] In many ways, Clausewitz's description matches his ideas regarding military genius in *On War*, where calm certainty and vision combine with the moral courage to make a decision despite the perceived uncertainty.[47] It also matches Clausewitz's thoughts on *coup d'oeil* and card games such as faro, in that Napoleon understood it was better to make one big bet and take a chance than lose opportunities at lower risk because mechanistic, or more predictable, games would not require the same leap of faith and trust in luck for an instant decision.

In Conclusion

Understanding the role of chance in Clausewitz's trinity is central to understanding his view of war. Although Clausewitz provides a useful analogy to explain the centrality of chance and probability to war, his lack of specificity in *On War* and scholars' subsequent misidentifications of the relevant card games has created a problem in Clausewitzian scholarship and a misunderstanding about his original meaning. Even mentions of poker or blackjack can lead readers to misinterpret Clausewitz because their ideas

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44.   Clausewitz, *Napoleon Absent*, sect. 13, 1:114.
45.   Clausewitz, *Napoleon Absent*, sect. 54, 1:399.
46.   Clausewitz, *Napoleon's 1796 Italian Campaign*, sect. 63, 228.
47.   Clausewitz, *On War*, bk. 1, chap. 3, 100–112.

of what blackjack or poker look like will bear little to no resemblance to the games Clausewitz had in mind. Even if any subsequent analysis is accurate, the incorrect foundational basis of the analysis will fundamentally undermine any conclusions drawn from it, given the significant variations of the stochastic and probabilistic natures of faro, skat, and ombre vary significantly from those of blackjack and poker. Of course, where scholars restrict themselves to a simple reference to the interactive nature of a card game, they will be on firmer ground. Even here, however, a fundamental problem exists, as at least one of the games has little to no interaction between players. Despite the best intentions of scholars, the misidentification of games fundamentally fails to capture Clausewitz's ideas.

What do these findings mean for fields such as game theory? If game theory requires rational actors with a fixed card deck then it is not useful.[48] If chance and luck in war are far more extreme than was thought and players struggle to make rational decisions because of the extreme emotions involved, scholars must revise how they might use game theory to model behavior. Furthermore, if there is no baseline expectation of honesty, then the role of luck and emotion is enhanced, and genius as Clausewitz describes it becomes critical. The games Clausewitz uses explained here, especially when including cheating, would allow a genius to rise above or even write the rules.[49] After all, why cheat when you can just change the rules?

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48.   Ken Binmore, *Game Theory: A Very Short Introduction* (New York: Oxford University Press, 2007), 2.
49.   Clausewitz, *On War*, bk. 1, chap. 2, 100–112, and bk. 1, chap. 3, 136; and Jon Tetsuro Sumida, "The Relationship of History and Theory in *On War*: The Clausewitzian Ideal and its Implications," *Journal of Military History* 65, no. 2 (2001): 333–54.

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Change and Innovation
in the Institutional Army from 1860–2020

John A. Bonin and James D. Scudieri

ABSTRACT: This article showcases the understudied institutional Army, the generating force, as a critical prerequisite for overall strategic success. Competition, crisis, and conflict require more than the manned, trained, and equipped units that deploy. This article analyzes six case studies of institutional Army reforms over 160 years to examine adaptation in peace and war. The conclusions provide historical insights to inform current practices and fulfill the Army's articulated 2022 Institutional Strategy.

For nearly 250 years, the US Army has adapted as a living organization composed of operating units and institutional organizations that generate combat power.[1] Institutional strategy, the mechanism by which senior Army leaders guide the department over the long term, establishes policy and prioritization for resourcing and gives coherence to the Department of the Army's purpose—to provide trained and ready forces for employment.[2]

The Army has undergone many institutional changes throughout its long history to ensure readiness and meet contemporary demands. Despite providing the generating force for the operational portion of the Army, the institutional Army remains understudied. This article traces six major reforms of the Army's institutional structure between 1860 and 2020 that were necessary to generate improvement to its combat forces. Although the development of Army Futures Command is still playing out, we observe several commonalities between the cases that should inform its further development. Success depended on top-down drivers of adaptation, including the synergy developed among multiple key senior leaders and their successors. By delving into each case, this article reveals the keys

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1. Headquarters, Department of the Army (HQDA), *The Army*, Army Doctrine Publication (ADP) 1 (Washington, DC: HQDA, 2019), 1-5; and HQDA, *Institutional Strategy: Army Strategy Note* (Washington, DC: HQDA, 2022), 9.
2. HQDA, *Institutional Strategy*, 1.

to successful institutional reform and the pitfalls and setbacks that impede progress.

The Cavalry Bureau in the American Civil War

On April 12, 1861, when Southern secessionists fired on federal troops in Fort Sumter, South Carolina, the US Regular Army consisted of 16,000 widely dispersed personnel, with fewer than 4,000 east of the Mississippi River.[3] This small force led by old men, many of whose sympathies lay with the South, proved untrained and unorganized for large-scale combat operations. It consisted of 10 infantry, 4 artillery, 5 mounted regiments, 9 staff departments, and 3 geographic department commands, each with a general officer, all serving under 75-year-old Commanding General Winfield Scott.[4] Amongst the many problems faced by the Union Army, the supply and organization of its cavalry forces proved one of the most significant obstacles to success. Secretary of War Edwin M. Stanton created the Cavalry Bureau to confront the many institutional issues that prevented the Union from successfully manning its cavalry.

During the next two years, Confederate Major General Jeb Stuart gained and maintained cavalry superiority over Union forces in the East. Additionally, Union cavalry initially faced significant problems in all aspects of its expansion.[5] Major General David McMurtrie Gregg commented after the war:

> These regiments had been hastily formed . . . [with] many improper [officer] appointments . . . [and the] result was the failure of many of the regiments to make any progress in preparing themselves for the duties of cavalry in the field. . . . The condition of the horses . . . when received were (sic) totally unfit for cavalry service, having been taken . . . from dishonest contractors.[6]

3.   Clayton R. Newell and Charles R. Shrader, *Of Duty Well and Faithfully Done: A History of the Regular Army in the Civil War* (Lincoln: University of Nebraska Press, 2011), 3, 10. For a recent account of the pre-war US Army, see Clayton R. Newell, *The Regular Army Before the Civil War, 1845–1860* (Washington, DC: Center of Military History, 2014).

4.   Newell and Shrader, *Of Duty*, 3, 50.

5.   See John A. Bonin, "Challenged Competency: Union Cavalry before, during, and after the U.S. Civil War," in *Drawdown: The American Way of Postwar*, ed. Jason W. Warren (New York: New York University Press, 2016), 114–20; and Stephen Z. Starr, *The Union Cavalry in the Civil War*, vol. 1, *From Fort Sumter to Gettysburg* (Baton Rouge: Louisiana State University Press, 1979), 209–33.

6.   David McMurtrie Gregg, "The Union Cavalry at Gettysburg," in *Annals of the War, Written by Leading Participants, North and South* (Philadelphia: Times Publishing Co., 1879), 372.

The availability of horses in the Army of the Potomac reached a crisis in October 1862. After General George R. McClellan ineffectively responded to a raid, he complained to the War Department about a lack of cavalry horses.[7] Quartermaster General of the Army Montgomery C. Meigs provided Stanton statistics indicating he had been supplying McClellan with more than 1,500 horses per week and alleged abuse by ill-disciplined troops was the reason for excessive wastage.[8]

A major factor in the improvement of the Union cavalry began on July 28, 1863. With General Order 236, Stanton established the Cavalry Bureau due to frustration with the "enormous expense attending to the maintenance of the cavalry arm" and the failure of the exiting staff bureaus, such as Ordnance and Quartermaster. Stanton envisioned the Cavalry Bureau as an innovative organization that would "have charge of the organization and equipment of the cavalry forces of the Army, and the provision for the mounts and remounts of the same."[9] In January 1864, after the first two heads of the bureau proved incapable, Stanton requested Lieutenant Colonel James H. Wilson from Major General Ulysses S. Grant's staff.

Promoted directly to brigadier general, and in his new capacity, Wilson met with Stanton on January 24, 1864. Stanton told Wilson, "I want you to reorganize the business, drive the rascals out and put the cavalry service on an effective footing."[10] Wilson overhauled the Quartermaster Department's corrupt system of horse procurement, imprisoned businessmen for the war's duration for failing to honor contracts, and adopted the breech-loaded Spencer seven-shot magazine carbine as the standard arm for the entire cavalry service, adding much-enhanced firepower and tactical flexibility. In addition, he supplied remounts and new equipment to veteran units rather than establishing fresh regiments. By April 7, 1864, with Stanton's support, Wilson succeeded in completely reforming the Cavalry branch, and Grant wanted Wilson to lead a cavalry division in the Army of the Potomac. At Wilson's suggestion, the Cavalry Bureau came directly under Major General Henry W. Halleck as the Army Chief of Staff.[11] The Cavalry Bureau subsequently enabled the mounting and arming of more than 200 regiments to a high professional standard. By 1865, the Union cavalry

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7.   George B. McClellan, *Report on the Organization and Campaigns of the Army of the Potomac: To Which is Added an Account of the Campaign in West Virginia, with Plans of Battle-Fields* (New York: Sheldon & Co., 1863), 123.
8.   *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, ser. 1, vol. 19, pt. 2 (Washington, DC: Government Printing Office, 1880–1901), 422–24.
9.   *War of the Rebellion*, ser. 3, vol. 3, 580.
10.   As quoted in Edward G. Longacre, *Grant's Cavalryman: The Life and Wars of General James H. Wilson* (Mechanicsburg, PA: Stackpole Books, 1996), 98.
11.   Longacre, *Grant's Cavalryman*, 95–106; and James H. Wilson, *Under the Old Flag*, vol. 1 (New York: D. Appleton and Co., 1912), 331.

had transformed into an efficient and effective mobile combat arm capable of decisive results in Major General Philip Sheridan's and Brigadier General Wilson's campaigns that same year.[12] Unfortunately, also by 1865, Stanton had become disenchanted with the bureau's ability to perform miracles, and the War Department disestablished the Cavalry Bureau.[13] The traditional bureaus resumed peacetime business as usual.

Peacetime Habits and Wartime Change:
The US Army, circa 1898–1920

As the nineteenth century ended, the bureau system still dominated the institutional Army. The bureau system consisted of 10 specialized, functional staff sections operating as virtually autonomous entities, eight of which exercised command authority. Staff cooperation was lacking. Bureau chiefs served long tenures and wielded considerable congressional influence, as civilian secretaries of war and miliary commanding generals came and went.[14] The Spanish-American War in 1898 raised elementary and very public questions on the efficacy of the bureaus, however entrenched. Widely publicized staging and deployment problems, compounded by poor support of combat operations in Cuba and the Philippines, challenged the institutional Army's ability to sustain force projection, a necessary capability for the United States as an emerging global power.[15]

The latest shortcomings prompted reform for an Army that faced growing global responsibilities. Elihu Root, appointed secretary of war on August 1, 1899, brought his business acumen, legal experience, reformist energies, and his best-known initiative—the Army War College—to bear on the institutional Army. A board of three officers first convened in February 1900 to draft regulations to establish the institution, and the Army War College began in February 1901 as an ad-hoc board, the first step in an evolutionary development process, which included functioning

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12.   Bonin, "Challenged Competency," 109–36.

13.   Stephen Z. Starr, *The Union Cavalry in the Civil War,* vol. 2, *The War in the East, from Gettysburg to Appomattox, 1863–1865* (Baton Rouge: Louisiana State University Press, 1981), 131.

14.   James E. Hewes Jr., *From Root to McNamara: Army Organization and Administration 1900–1963*, Special Studies, US Army Center of Military History (CMH) Pub 40-1 (Washington, DC: CMH, 1983), 1–5.

15.   J. P. Clark, *Preparing for War: The Emergence of the Modern U.S. Army, 1815–1917* (Cambridge, MA: Harvard University Press, 2017), 163–89; Daniel R. Beaver, *Modernizing the American War Department: Change and Continuity in a Turbulent Era, 1885–1920* (Kent, OH: Kent State University Press, 2006), 27–30; Edward M. Coffman, *The Regulars: The American Army, 1898–1941* (Cambridge, MA: Harvard University Press, 2004), 9–10; and Russell F. Weigley, *History of the United States Army*, rev. ed. (Bloomington: Indiana University Press, 1984), 296–305, 313–14.

as an embryonic general staff.[16] The Army War College, developed in conjunction with a wider analysis of Army professional education at multiple levels, developed the United States Military Academy, Fort Leavenworth's General Service and Staff College, and various branch and technical schools.[17]

Root was also the first secretary to cut back the preeminence of the bureau system, whereby bureau chiefs dealt directly with the secretary's office. This change was neither abrupt nor final. He proceeded gradually amidst numerous interest groups, utilizing personal consultation, informed connections, and reformist allies.[18] Root had determined the Army did not require a commanding general selected by seniority but a chief as the senior military adviser to the secretary and a general staff as a planning and coordinating agency.[19] President Theodore Roosevelt backed Root and solicited congressional support to approve the establishing bill for a general staff.[20]

In its approval of the National Reorganization Act in February 1901, Congress expanded the regular Army and staff system detailed from line officers and ended permanent staff appointment—to the detriment of the bureaus. In March 1902, Root told Congress the War Department required firm executive control to succeed in wartime. Congress approved the establishment of the Army General Staff Corps, effective August 15, 1903, with 45 officers, three of whom were general officers, including the Chief of Staff. The new Chief of Staff imitated Western military practice and addressed constitutional and political sensitivities regarding the previous title of commanding general. The general staff was responsible for military policy and national defense plans while limited to four-year assignments. The Militia Act of 1903, also known as the Dick Act, after Representative Charles W. F. Dick, soon followed, tackling the

16.   Special Orders No. 42, February 19, 1900, Army Headquarters (HQ), Adjutant General's Office (AGO), temporary box 13, William Harding Collection, US Army Heritage and Education Center (USAHEC), Carlisle, PA; General Orders No. 64, July 1, 1902, temp. box 13, Army HQ, AGO, Harding Collection, USAHEC, Carlisle, PA; Coffman, *Regulars*, 182; Rory McGovern, *George W. Goethals and the Army: Change and Continuity in the Gilded Age and Progressive Era* (Lawrence: University Press of Kansas, 2019), 73–77; and Hewes, *From Root to McNamara*, 6–11.

17.   General Orders No. 155, November 27, 1901, Army HQ, AGO, temp. box 13, Harding Collection, USAHEC, Carlisle, PA; General Orders 115, June 27, 1904, War Department, AGO, temp. box 13, Harding Collection, USAHEC, Carlisle, PA; Clark, *Preparing for War*, 200–215; and Coffman, *Regulars*, 176–85.

18.   McGovern, *Goethals*, 71–73; Clark, *Preparing for War*, 189; Beaver, *Modernizing the War Department*, 31–32, 62; and Coffman, *Regulars*, 186.

19.   McGovern, *Goethals*, 71–75; Clark, *Preparing for War*, 189–91, 193–95; Weigley, *History*, 314–16; and Beaver, *Modernizing the War Department*, 33–34.

20.   Theodore Roosevelt, "Message of the President," Papers Relating to the Foreign Relations of the United States, Office of the Historian, Department of State, December 2, 1902, https://history.state.gov/historicaldocuments/frus1902/message-of-the-president.

acerbic debates over federal-level integration of the Regular Army and National Guard with a reserve system to address Army roles in a wider world of rising great-power competition.[21]

In 1910, the year he became Chief, Major General Leonard Wood reorganized the general staff to consist of three divisions. One was the Army War College now merged with general staff planners.[22] Earlier, in 1904, Root secured Navy endorsement in an Army and Navy Board for joint planning.[23]

Change did not happen quickly or quietly. President William Howard Taft's administration in 1909–13, Root, and Major General Franklin Bell's tenure as Army Chief of Staff in 1906–10 blended nineteenth-century conventions with Progressive management styles and techniques. As Army Chief of Staff, Wood dueled with Fred C. Ainsworth, whose merged role as military secretariat and adjutant general provided tremendous influence to blunt reformist energies.[24]

The outbreak of war in Europe in August 1914 and military shortcomings during the 1916 Mexican Expedition (also known as the Punitive Expedition or Pancho Villa Expedition) prompted a congressional intervention. The National Defense Act of 1916, the most comprehensive military legislation in the nation's history, authorized a Regular Army, a Volunteer Army, a National Guard, an Officer Corps and an Enlisted Reserve Corps.[25] Unfortunately, the legislation crippled the general staff, eliminating its administrative authority and restricting its function to war planning without War College assistance. Increased to 55 personnel, only half of the general staff officers could serve in the capital at one time. Conversely, each bureau became a statutory agency with a commanding officer as Chief. Even the president required congressional approval

21.   Clark, *Preparing for War*, 193; and Coffman, *Regulars*, 191–92.
22.   *Zone of the Interior: Organization and Activities of the War Department,* The United States Land Forces in the World War Series, vol. 3, pt. 1 (reprint, Washington, DC: CMH, 1988), 14, 24–28; William R. Roberts, "Reform and Revitalization, 1890–1903," in *Against All Enemies: Interpretations of American Military History from Colonial Times to the Present,* Contributions in Military Studies 51 (series), ed. Kenneth J. Hagan and William R. Roberts (New York: Greenwood Press, 1986), 207–14; and Michael McCarthy, "United States Army: General Staff," in *The United States in the First World War: An Encyclopedia*, ed. Anne Cipriano Venson (New York: Garland Publishing, 1995), 702.
23.   Weigley, *History*, 320; and *The U.S. Army in the World War I Era*, CMH Pub 77-2, The U.S. Army Campaigns of World War I Series, ed. Brian F. Neumann (Washington, DC: CMH, 2017), 7–13.
24.   Clark, *Preparing for War*, 240–41; Beaver, *Modernizing the War Department*, 33–36; and Coffman, *Regulars*, 186–87.
25.   For an overview, see *U.S. Army in the World War I Era*, 13–18. David R. Woodward, *The American Army and the First World War,* Armies of the Great War Series (Cambridge, UK: Cambridge University Press, 2014), 29–30.

to accomplish change.[26] Indeed, "the bureau chiefs regarded the National Defense Act as their 'Magna Carta.'"[27]

America's formal entrance into World War I on April 7, 1917, as an Associated Power confronted the Army with a daunting challenge—how to conduct mobilization for a major industrial war. Army historians were most interested in troop deployments to France, while the reformation and establishment of upper-echelon structures to create strategic plans and organize and sustain the massive divisions and theater units to support them remain far less studied.

First, the Army's senior leaders endured considerable turnover in the war years. President Woodrow Wilson appointed Newton D. Baker as secretary of war in March 1916. Baker lacked experience in Washington and knowledge of military affairs and, as a pacifist, opposed American entrance into the war. No fewer than three Army Chiefs served from September 1917 to the Armistice of November 1918. Generals Hugh L. Scott and Tasker H. Bliss spent much of their time outside Washington on overseas missions, lacked influence in the capital, and faced mandatory retirement age. Neither drove change in 1917, but Scott's last annual report in September 1917 laid the theoretical foundation of a strong general staff and an Army Chief of Staff through whom the secretary commanded.[28]

Second, the American declaration of war came without readiness and preparedness, exacerbated by extant institutions and inexperienced leaders. Baker's first year had rather tentative, not sweeping, reform. The 10 bureaus remained as powerful as ever.[29]

Third, strategic planners recommended against sending America's few trained soldiers to France immediately to retain the cadre for expansion. Political imperatives dictated otherwise; the 1st Infantry Division departed for France in May 1917. Trained staff officers from the War Department

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26. Clark, *Preparing for War*, 253–55; Beaver, *Modernizing the War Department*, 68–69; Woodward, American Army, 31–33; Hewes, *From Root to McNamara*, 19–21; Timothy K. Nenninger, "Army Enters Twentieth Century, 1904–17," in *Against All Enemies: Interpretations of American Military History from Colonial Times to the Present*, ed. Kenneth J. Hagan and William R. Roberts, Contributions in Military Studies 51 (series) (New York: Greenwood Press, 1986), 226;; and McCarthy, "General Staff," *First World War Encyclopedia*, 702.

27. Hewes, *From Root to McNamara*, 21.

28. Edward M. Coffman, *The Hilt of the Sword: The Career of Peyton C. March* (Madison: University of Wisconsin Press, 1966), 40–42, 50–51; *Zone of the Interior*, 14, 27; Hewes, *From Root to McNamara*, 21–26; and McCarthy, "General Staff," *First World War Encyclopedia*, 702–3.

29. Five of the 10, Quartermaster General, Surgeon General, and Chiefs of Ordnance, Engineers and Signal, were known as the supply bureaus. See also, "Chart 1, Organization of the War Department, Apr. 6, 1917," *Zone of the Interior*, 14, 16–17.

also departed, creating a serious brain drain of desperately needed experience.[30] The general staff prevailed in focusing on France as the main strategic effort.[31]

Fourth, the implications for an unprecedented projected wartime expansion to nearly four million were daunting.[32] The inflexible, stove-piped bureaus contributed to the problems. Ensuing tensions challenged the survival of the secretary, but he retained Wilson's trust. A general staff reorganization created five divisions, embodied in General Order 14 on February 5, 1918. The reactivation of George Washington Goethals, famed agent of the Panama Canal completion, as acting quartermaster general brought the will to impose centralization and efficiency.[33]

Baker then brought Peyton C. March back to Washington the same month. He served as Chief beyond the war's end. March's administrative abilities had been honed during the Spanish-American War and the Philippine-American War. His duty on the first general staff included acting as an observer of the Russo-Japanese War in 1905 and serving in the Adjutant General's Office. He established the technical branches of the Air Corps, the Tank Corps, the Motor Transport Corps, and the Chemical Warfare Service. He shortened cadet officer education at the United States Military Academy to one year and removed many distinctions between the Regular Army, the National Guard, and the National Army. He institutionalized these changes in General Order 80 on August 26, 1918, which also definitively disempowered the bureaus. He also initiated congressional updates and regular press conferences.[34]

Baker as secretary, March as Army Chief of Staff, and financier Bernard Baruch as chairman of the War Industries Board from January 1918 exemplified progressive-minded meritocracy and an example of a winning civilian-military team. March had commanded the American Expeditionary Force artillery for seven months and was acting Army Chief of Staff for six weeks. He became permanent Chief of Staff of the Army in May 1918.

30.   Hewes, *From Root to McNamara*, 26–27.
31.   McCarthy, "General Staff," *First World War Encyclopedia*, 703–4.
32.   *U.S. Army in the World War I Era*, 6; and McCarthy, "General Staff," *First World War Encyclopedia*, 704.
33.   McGovern, *Goethals*, 164–65; Hewes, *From Root to McNamara*, 37–38; and McCarthy, "General Staff," *First World War Encyclopedia*, 704–5. See also, "Chart 7 – Organization of the General Staff, Feb. 1918," *Zone of the Interior*, 34, and "Chart 1 – The War Department, Late 1917," *From Root to McNamara*, facing 24–25; and Phyllis Zimmerman, "Goethals, George Washington," *The United States in the First World War: An Encyclopedia*, ed. Anne Cipriano Venson (New York: Garland Publishing, 1995), 259–60.
34.   Beaver, *Modernizing the War Department*, 102–3; Coffman, *Hilt of the Sword*, 79; Hewes, *From Root to McNamara*, 38–40; McCarthy, "General Staff," *First World War Encyclopedia* 702, 705; Mark R. Grandstaff, "March, Peyton Conway," *The United States in the First World War: An Encyclopedia*, ed. Anne Cipriano Venson (New York: Garland Publishing, 1995), 369–71; and Holger H. Herwig and Neil M. Heyman, "March, Peyton C.," *Biographical Dictionary of World War I* (Westport, CT: Greenwood Press, 1982), 240–41.

March wielded the newfound powers of Chief supported by Baker without hesitation. He won few friends with his brusqueness, but he combined selfless dedication with professional ruthlessness to accomplish the change required to achieve victory in France. Success required the subordination of the bureaus.[35]

First, March supported expanded authorities for Goethals as acting quartermaster general. He then placed supply functions under the assistant chief of staff—now Goethals. March combined Purchase and Supply with Storage and Traffic into the Purchase, Storage, and Traffic Division with Goethals as director. Goethals became the critical senior subordinate able to bring Baker's vision and March's determination for institutional effectiveness to fruition.[36]

Continued congressional legislation, such as the Department Reorganization Act, also known as the Overman Act, facilitated the prosecution of the war effort and greatly reinforced March's initiatives and Baker's support.[37] For example, an act of May 18, 1917, removed restrictions on the size of the general staff, which was woefully small upon declaration of war, with only 19 officers in the capital.[38] The general staff went through no fewer than four wartime restructures, increasing to 99 in May 1917 and to 944 by November 1918.[39]

One area of contention defied reasonable solution: the lack of effective relationships between the Chief and general staff in Washington and General John J. Pershing and general headquarters, American Expeditionary Force (AEF).[40] In 1917, the president and the secretary gave Pershing broad authority as an overseas commander, resurrecting a de facto commanding general position. Subsequently, in 1918, both generals and their staffs could not conquer deep-seated, mutual suspicions. The Chief's suggestion to implement an officer exchange came to naught.[41] Particularly stormy was

35.   Clark, *Preparing for War*, 258; Beaver, *Modernizing the War Department*, 79–80, 119–23; and Coffman, *Hilt of the Sword*, 64, 68–70, 78–79, 119–23, 147–48.

36.   McGovern, *Goethals*, 166–84; and Coffman, *Hilt of the Sword*, 62–63.

37.   McGovern, *Goethals*, 182–84; Coffman, *Hilt of the Sword*, 128, 135. For snapshots in September 1918 and 1919, see charts 3 and 4, respectively, in *Zone of the Interior*, 21, 23. For the importance of the Overman Act, see Hewes, *From Root to McNamara*, 41, 44, 48.

38.   The British Imperial General Staff had started the war in 1914 with 232; the French and Germans had begun with 600–700. McCarthy, "General Staff," *First World War Encyclopedia*, 703.

39.   Dates were January 11, February, May, and August 1918. See charts 6, 7, 9, and 11, respectively, in *Zone of the Interior*, 29, 33–34, 38, 41, 52.

40.   On the earlier relationships between the "line and staff," see John A. Hixson, "The United States Army General Staff Corps, 1910–1917: Its Relationship to the Field Forces" (master's thesis, Rice University, 1971).

41.   Clark, *Preparing for War*, 260–61; McGovern, *Goethals*, 156–58; Coffman, *Hilt of the Sword*, 58–61, 81–82; Woodward, *American Army*, 185–89; Hewes, *From Root to McNamara*, 22–24; and McCarthy, "General Staff," *First World War Encyclopedia*, 705–6.

March's "Goethals Proposal" to send Goethal to France to fix port operations. Moreover, he would be independent of the American Expeditionary Forces, with headquarters on par with Pershing's. The latter's recommendation instead overhauled his Services of Supply to fix the issue.[42]

American victory in World War I rested upon civilian and military strategic leaders who understood the preeminent need for and then led the radical, rapid change of the Army's highest-level organization, structure, and processes. They accomplished the pressing reforms of the institutional Army—with congressional support—which enabled the triumph of the American Expeditionary Forces in the field. American victory with the Armistice in November 1918 brought familiar demobilization, despite ongoing operations in Russia, the occupation of Germany, and reduced funding. March and the general staff's organization of the post-war Army's higher structure received little recognition. Their plan would have broken the power of the bureaus forever. Congress demurred, distrustful of a powerful military staff answerable only to the secretary and the Chief. The National Defense Act of June 4, 1920, did make the general staff the main body to create military policy, including mobilization and equipment of the future force, but restored the power of the bureaus.[43] The 1920s highlight a case of pressing wartime innovation with success undone by President Warren G. Harding's peacetime "return to normalcy."

The intrinsic strength of the bureaus (despite their inability to deliver under World War I conditions) remains a discouraging case study of organizational intransigence. These bureaus, however, were not merely entrenched bureaucracies. Their leaders and staff represented irreconcilable ideological and philosophical visions of how the Army should be run.

General Marshall and an Army Headquarters for World War II

Unfortunately, the Army's command and staff situation at the onset of World War II necessitated a further reorganization of the US Army for global war. Based on the National Defense Act of 1920 and revised piecemeal over the next 21 years, in 1941, some 61 separate officials theoretically had direct access to the Chief of Staff of the Army. These officials included the special staff, and based on the 1921 Harbord Board, eight officers from a revised general staff. Direct access also included 25 combat-arm and technical branch chiefs and a host of corps and departmental commands.

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42.   McGovern, *Goethals*, 188–92; Coffman, *Hilt of the Sword*, 106–8; Woodward, *American Army*, 189; and Zimmerman, "Goethals," *First World War Encyclopedia*, 260.

43.   Coffman, *Regulars*, 227–28; Coffman, *Hilt of the Sword*, 173–204; Hewes, *From Root to McNamara*, 50–56; and McCarthy, "General Staff," *First World War Encyclopedia*, 706.

The Chief of Staff of the Army also served simultaneously as commanding general of the general headquarters, responsible for supervising and training all the Army's ground forces and the four Atlantic bases. Other major duties included frequent contacts for coordination with the US Navy through the Joint Board, with other cabinet departments, the White House, and Congress.[44]

After the Pearl Harbor attack, the Army's planned expansion to more than 8 million men, multiple theater commands, direct command of the Army's air arm, and the need for a single manager of the technical bureaus necessitated a rapid and major reorganization of the institutional Army. Two days after the attack, Marshall noted, "The War Department is a poor command post."[45]

He demanded "a drastically complete change, wiping out Civil War Institutions."[46] Both the Army Air Force and a general staff committee had been considering such a reorganization since August 1941.

In January, Major General Joseph T. McNarney, an Army Air Force officer from the War Plans Division, rapidly took charge of the project and presented the final version of recommendations to the Army Chief of Staff on January 31, 1942. This reorganization called for freeing the general staff from all activities except strategic direction and control of operations, determination of overall materiel requirements, and the development of basic policies affecting the Zone of the Interior; the staff created three major commands to supervise the Zone of the Interior. On February 11, McNarney received instructions to form an executive committee to implement the plan. Approved by the secretary of war, President Franklin D. Roosevelt signed an executive order on February 28, 1942, that directed the first sweeping War Department reorganization since 1903, effective March 9, 1942.[47]

The three major commands in the institutional Army Zone of the Interior (the continental United States) were responsible for arming, training, and equipping the Army, each reporting directly to Marshall as Chief of

44.   Mark Skinner Watson, *Chief of Staff: Prewar Plans and Preparations*, The United States Army in World War II: The War Department (Washington, DC: US Army Historical Division, 1950), 81, and charts 1–4, p. 65; and Ray S. Cline, *Washington Command Post: The Operations Division*, The United States Army in World War II: The War Department (Washington, DC: US Army Historical Division, 1950), 23.
45.   Notes on Conferences in OCS, II, 441, War Department Chief of Staff of the Army reds., as quoted in Cline, *Washington Command Post*, 89.
46.   George C. Marshall, as quoted in Forrest C. Pogue, *George C. Marshall: Ordeal and Hope, 1939–1942* (New York: Viking Press, 1966), 289.
47.   Pogue, *Ordeal and Hope*, 70–74, 90–93; Weigley, *History*, 440–44. See also Jean R. Moenk, *A History of Command and Control of the Army Forces in the United States, 1919–1972* (Fort Monroe, VA: Headquarters, US Continental Command, 1972), 13–23.

Staff. One of these commands, Army Air Forces, had its own Air Staff and a separate commander, General Henry Harley Arnold, who also served as member of the Joint Chiefs of Staff and the Combined Chiefs of Staff. The Army Ground Forces, commanded by Lieutenant General Leslie J. McNair, replaced the previous general headquarters and inherited all its training and supervisory responsibilities over ground combat troops in the United States. The reorganization abolished the "fiefdoms" of the previous chiefs of combat arms, initiated in 1920, and their function to develop tactical doctrine passed to Army Ground Forces. All support and logistical functions of the US Army passed to the newly created Services of Supply, later the Army Service Forces, under Lieutenant General Brehon B. Somervell. The offices of the supporting arms and services, including the Engineers and the Signal Corps, would continue to exist as subordinate to the chief of the Army Service Forces. To these three coordinating commands (Army Ground Forces, Army Air Force, and Army Service Forces), the Army general staff delegated operating duties concerning administration, supply, and training within the United States. The Army Chief of Staff could now focus solely on the responsibility for planning and providing strategic direction for Army forces in the theaters of war for the duration of World War II.[48]

The March 9, 1942, reorganization of the Army also created the Operations Division out of the War Plans Division of the general staff. This new organization allowed Marshall, as the Army Chief of Staff over the "Washington Command Post," to monitor the conduct of internal Army activities by theater armies in multiple theaters of operation. It would also be the Operations Division, led initially by Major General Dwight D. Eisenhower, that would provide US Army staff participation in both the Joint Chiefs of Staff and Combined Chiefs of Staff for the remainder of the war. The Joint Chiefs of Staff, which replaced the ineffective advisory Joint Board, provided a mechanism where Army, Navy, and Army Air Force senior leaders could reach acceptable agreements on nearly all significant US strategic and operational matters. This consensus mechanism would prove critical as the US Chiefs of Staff also served as the US delegation to the Combined Chiefs of Staff, with jurisdiction over the development of Allied grand strategy.[49]

World War II demonstrated how rapidly the Army could—and can—change its institutions. Over 20 years of peace had corroded the flexibility

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48. Weigley, *History*, 442–44. See also Pogue, *Ordeal and Hope*, 289–98; and Ed Cray, *General of the Army: George C. Marshall, Soldier and Statesman* (New York: Simon and Schuster, 1990), 278–79.
49. Cline, *Washington Command Post*, 98–103, 107, 135.

of the Army's institutions into numerous separate branch and technical service stovepipes. Several new organizations, such as the Army Air Force and the Armored Force, fought older branches and technical services for increased resources. Emerging overseas requirements, each facing undetermined threats, stretched the span of complexity of the Army Chief of Staff and a peacetime general staff. By late October 1944, the Army's major overseas theater commands were supervising more than five million soldiers.[50] Marshall's March 1942 reorganization of the Army proved elegantly simple in conception and extremely adaptable during the strain of large-scale global war. Marshall asserted he could not have conducted the war without having radically reorganized the Department to provide centralized, streamlined, and unified control. In effect, he was the real center of military authority within the War Department, buttressed by the support Roosevelt and Stimson provided.[51]

Secretary Robert S. McNamara and US Army Combat Developments Command

Following 1946, the Army's successful wartime logistical, research, and development activities were once again spread amongst newly resurrected technical services. In 1952, however, the California Institute of Technology recommended the Army establish a combat development activity in response to deficiencies identified during combat in Korea. The Army's initial combat development program had been established first in Army Field Forces, the lineal successor to World War II's Army Ground Forces, and after 1955 was assigned to its replacement, Continental Army Command, with the goal of providing optimum combat effectiveness.[52]

As secretary of defense in the early 1960s, Robert S. McNamara wanted to centralize the Department of Defense further based on Cold War threats and the expansion of the US military. In addition to establishing the Defense Intelligence Agency in August 1961, he directed Cyrus R. Vance Jr. to study the advantages of common supply activities. Based on this study, McNamara

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50. Cline, Appendix B: U.S. Army Commanders in Major Theater Commands, December 1941–September 1945, *Washington Command Post*, 373–81. These commands included European Theater of Operations, US Army; Mediterranean Theater of Operations, US Army; Persian Gulf Command; US Army Forces, China, Burma, and India; US Army Forces in the Far East; US Army Forces, Pacific Ocean Areas; Caribbean Defense Command; and the Alaskan Defense Command.
51. Hewes, *From Root to McNamara*, 128–29.
52. Weigley, *History*, 550. See also Moenk, *Command and Control*, 32–36; and Hassan M. Kamara, *Army Combat Developments Command: A Way to Modernize Better and Faster than the Competition*, The Land Warfare Papers No. 119 (Arlington, VA: Association of the United States Army, Institute of Land Warfare, July 1918), 2–3.

established the Defense Supply Agency on January 1, 1962, with 60 percent of its staff coming from the Army.[53]

He also directed the "Study of the Functions, Organization, and Procedures of the Department of the Army, OSD Project 80 (Army)." The results of this study, also known as the Hoelscher Report, called for the replacement of the Army's traditional technical services.[54] As a reorganized Continental Army Command assumed control over all individual and unit training, the Army erected two other major functional commands on July 1, 1962—the Army Materiel Command and the Combat Developments Command. The Army Materiel Command assumed the various equipping functions of the technical services with five subordinate field commands developing and procuring specialized equipment. Test and Evaluation Command became responsible for final acceptance and for maintaining uniform standards, while the Supply and Maintenance Command received, stored, and shipped weapons and equipment.[55]

Under Lieutenant General John P. Daley, Combat Developments Command planned the evolution of the Army and its tactics, organization, and doctrine. Initial subordinate headquarters included the Combat Arms Group, concerned with the main combat arms of the Army; the Combat Service and Support Group, concerned with the logistical support of the force; and three specialized staff sections.[56] Most controversially, Combat Developments Command took proponency for most, but not all, Army field manuals, with the Continental Army Command retaining 169 of 472. In addition, the Combat Developments Command received transfer of 451 spaces from the Continental Army Command to form combat development agencies co-located at each Continental Army Command school.[57]

The 1962–63 reorganization of the US Army provided a better institutional focus on the expanding conflict in Southeast Asia. While Army Materiel Command took the lead in procurement and sustainment, Combat Developments Command provided the Army capabilities for testing and evaluation. McNamara's analysts believed traditional Army elements were resisting the potential of helicopters and the improvement of Army tactical

53.   Hewes, *From Root to McNamara*, 306–15.
54.   Hewes, *From Root to McNamara*, 316–43; Moenk, *Command and Control*, 43; and Jean R. Moenk, *Operation STEADFAST Historical Summary: A History of the Reorganization of the US Continental Army Command* (Fort McPherson, GA: Historical Office, US Army Forces Command, 1973), 1.
55.   Weigley, *History*, 550. The five were Missile Command, Munitions Command, Weapons Command, Mobility Command, and Electronics Command.
56.   For a comprehensive list, see Department of the Army, *The United States Army Combat Developments Command, First Year: June 1962–July 1963* (Fort Belvoir, VA: Headquarters, United States Army Combat Developments Command, August 1963), 7–11.
57.   Moenk, *Command and Control*, 43–45.

mobility.[58] In April 1962, McNamara directed the secretary of the Army to "re-examine the Army's aviation requirements" with a "bold new look at land warfare . . . conducted in an atmosphere divorced from traditional viewpoints and past policies."[59] The resulting US Army Tactical Mobility Board, led by Lieutenant General Hamilton H. Howze, XVIII Corps commander and former first director of Army Aviation, conducted over 40 tests and experiments from May to August 1962. By November 1962, the Combat Developments Command received the Howze Board results and directed its subordinate combat development groups at Fort Leavenworth and Fort Lee to proceed aggressively with the development of the 88 detailed tables of organization and equipment and the 18 doctrinal manuals needed to implement air mobility in the US Army.[60]

In 1963, McNamara approved a 15,000-soldier increase in the Army specifically to form a test unit for air mobility. In 1963–64, the Combat Developments Command formed Project Test, Evaluation, Air Mobility to experiment and evaluate air mobility and Kinnard and his newly established 11th Air Assault Division (Test).[61] Kinnard received guidance from Army Chief of Staff Earle G. Wheeler "to determine how far and how fast the Army can go and should go in embracing air mobility."[62] Kinnard, the World War II operations officer (G-3) of the 101st Airborne Division, attracted creative officers and instituted an idea center where all unit members could contribute. The successful evaluation of the 11th Air Assault by the Combat Developments Command in 1964 led directly to its reorganization as the 1st Cavalry Division and subsequent deployment to Vietnam in August 1965 using test doctrine developed by the Combat Developments Command. The Combat Developments Command remained instrumental during Vietnam in rapidly fielding and testing new equipment, such as night-vision devices, the AH-1G Cobra, and the TOW Cobra, while the Army Materiel Command struggled with the more sophisticated AH-56 Cheyenne, which the Army ultimately cancelled in 1972.[63] The Combat Developments Command facilitated the conceptualization and initiation of all the historic "Big Five" programs: the M1 tank, the M2 Bradley, the UH-60 Blackhawk,

58.   John A. Bonin, "Army Aviation Becomes an Essential Arm: From the Howze Board to the Modular Force, 1962–2004" (PhD diss., Temple University, 2006), 51–52.
59.   Robert S. McNamara to Elvis J. Stahr, memorandum, April 19, 1962, in Enclosure 1, Directives, U.S. Army Tactical Mobility Requirements Board, Fort Bragg, NC, August 20, 1962, "Final Report," US Army Military History Institute (USAMHI), as quoted in Bonin, "Army Aviation," 53.
60.   Bonin, "Army Aviation," 54–71.
61.   Bonin, "Army Aviation," 72–87.
62.   Harry W. O. Kinnard Jr., interview by Jacob B. Couch Jr., USAMHI Project 83-6, 1983, 76; and Harry W. O. Kinnard, Jr., "Airmobility Revisited, Part I," *U.S. Army Aviation Digest* 26 (June 1980): 3, as quoted in Bonin, "Army Aviation," 78.
63.   Bonin, "Army Aviation," 79–95, 103–4, 126, 184, and 190–93.

the AH-64 Apache, and the Patriot.[64] These systems enabled the 1980s AirLand Battle doctrine, which triumphed in the First Gulf War.

General Creighton William Abrams Jr. 1973 Reorganization

Before the end of the Vietnam War, the Army once again considered reorganization. Seen by the Department of Defense as an era for the transition from combat to peacetime, for the reduction of Army manpower, and for directed fiscal economy, beginning in 1969, the Army studied its institutional structure, especially the span of complexity of the Continental Army Command.[65] With troop drawdowns in Vietnam, the Continental Army Command soon commanded no fewer than 85 various entities and had 446,000 assigned active-duty personnel while being responsible for all ROTC and reserve component training. The Department of Defense and the Army staff also believed improving automation, reducing layers, and streamlining management functions through increased centralization would generate new efficiencies. The Army staff also anticipated that maintenance and training of the combat-ready forces based in the Continental United States would become as significant as improved individual training.[66]

Lieutenant General William E. DePuy, assistant vice chief of staff, had assessed an Army in shambles after its long years in Vietnam. It also faced being halved and the end of the draft. DePuy believed the Army needed a major reorganization to re-professionalize. His biographer highlights DePuy's goal of three big outcomes: "a revolution in training, bringing combat developments back from the futuristic to the nearer term, and taking doctrine from the abstract to a how to fight series of notebooks."[67] DePuy thus drove highly integrated doctrinal development and a requisite training regimen.

General Creighton William Abrams Jr. knew full well the fatal consequences of poor training. The concept he approved split the Continental Army Command into the US Army Forces Command and the US Army Training and Doctrine Command (TRADOC) while disestablishing the Combat Developments Command. Two new agencies, the Operational Test and Evaluation Agency and the Concepts Analysis Agency, would come

64.   Fred Gellert, "Big 5" (PowerPoint presentation, US Army War College, February 20, 2018).

65.   Conrad C. Crane et al., *Changing the Institutional Army: 1962–2018* (Historical Services Division Study, Carlisle, PA: USAHEC, n.d.), 12–16.

66.   Moenk, *Command and Control*, 53–55; and Moenk, *Operation STEADFAST*, 1–35.

67.   Henry G. Gole, *General William E. DePuy: Preparing an Army for Modern War* (Lexington: University Press of Kentucky, 2008), 240.

from the Combat Developments Command and report to the Army staff through the assistant chief of staff for force development.[68]

The last commander of the Combat Developments Command, Lieutenant General John Norton, expressed his concerns about the reorganization. First, he did not believe proper analysis of any alternatives had taken place. Second, he did not believe fragmenting the Army's combat developments activities between the Army staff and the new Training and Doctrine Command would be best, noting the organization would be responsible for most of the combat developments function currently assigned to the Combat Developments Command as well as for the entire Army school system, individual training, direction of ROTC, and possibly the US Army Recruiting Command. This great diversity of missions and heavy workload would prevent the Training and Doctrine Command from significantly improving the Army's combat developments efforts since training issues would submerge the other missions. Norton even requested consideration for the name "Combat Developments and Training Command" rather than Training and Doctrine Command.[69]

The Army staff responded by establishing a small deputy chief of staff for Combat Developments office in TRADOC headquarters and three functional centers to integrate doctrine and developments as middle managers for the TRADOC commanding general—these centers would be the Combined Arms Center at Fort Leavenworth, the Logistics Center at Fort Lee (now Fort Gregg-Adams), and the Administration Center at Fort Benjamin Harrison.[70]

On July 1, 1973, the Army officially split the Continental Army Command into the Forces Command and the Training and Doctrine Command. The Combat Developments Command had already been absorbed into the Continental Army Command on February 1, 1973.[71] DePuy, the first TRADOC commander, used the October 1973 Arab-Israeli War as the impetus to refocus the Army's attention on a Soviet threat in Europe. He later said the war was:

> . . . the most fortunate thing for us because it dramatized the difference between the wars we might fight in the future and the wars we had fought in the past. And it drew our attention . . . in the US Army . . .

68. Gole, *General William E. DePuy*, 222–35; and Moenk, *Operation STEADFAST*, 35.
69. Moenk, *Operation STEADFAST*, 74, 135.
70. Moenk, *Operation STEADFAST*, 213, 225–27.
71. For FORSCOM and TRADOC overviews, see Crane et al., "Changing the Institutional Army," 17–19 and 20–23, respectively.

that we missed one generation of modernization during the Vietnam War, and the Russians were one to two generations of equipment ahead of us.[72]

Later, in 1975, the Army also restructured Army Materiel Command into the Materiel Development and Readiness Command to place a new emphasis on research and development to acquire new weapons, an area considerably neglected while the Army was preoccupied with fighting in Vietnam.[73]

Army Futures Command

The Army assessed its post–Gulf War 1990s force-modernization efforts as insufficiently bold. The post-9/11 era brought two protracted counterinsurgencies that became the center stage of doctrinal and materiel developments. After a half century, the institutional Army achieved a major organizational change in 2018 with the establishment of the Army Futures Command (AFC). The creation of another four-star Army Headquarters alone was controversial.[74] The road to Army Futures Command was rough.

The post–Gulf War Army was not stagnant. Senior Army leaders, however, determined that only incremental improvements in familiar contexts were achieved. The intent behind creating the Army After Next in 1994 was to forge ahead faster and further, 15 years and beyond. Army After Next leveraged a sophisticated simulation to test both concepts and technology. This experimentation for "light battle forces" examined compressed time frames to accomplish lethality.[75]

The Army was also far from dormant in terms of its institutional structure analysis. The Training and Doctrine Command had been working on current and future concepts in its Futures Center since 2003,

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72.   William E. DePuy, "Final Interview," interview by Brooks Kleber, May 23, 1977, in DePuy Family Papers, as quoted in Gole, *General William E. DePuy*, 240.

73.   Weigley, *History*, 576. For a broad survey covering 1962–2002, see Crane et al., *Changing the Institutional Army*, 4–12.

74.   For additional information, see Matthew Cox, "The Army Now Has the Most 4-Star Generals on Duty since World War II," Military.com (website), August 28, 2020, https://www.military.com/daily-news/2020/08/28/army-now-has-most-4-star-generals-duty-world-war-ii.html.

75.   John Matsumura et al., "The Army After Next: Exploring New Concepts and Technologies for the Light Battle Force" (documented briefing, Santa Monica, CA, RAND Corporation, 1999), https://www.rand.org/pubs/documented_briefings/DB258.html.

which became the Army Capabilities and Integration Center after 2006.[76] The Army Materiel Command established the Research, Development and Engineering Command in 2004 with the mission to field technologies.[77] These organizations, established to link concepts, doctrine, and new technology, confronted several high-visibility failures.

Unfortunately, several twenty-first-century force modernization initiatives for new combat systems became center stage, catastrophic acquisition failures. The Crusader 155mm self-propelled howitzer (intended to replace the M109A6 Paladin) was canceled in 2002, and the RAH-66 Comanche attack helicopter (intended to replace the AH-64 Apache series) was canceled in 2004.[78] The most sweeping failure was the Future Combat System, a system of systems to equip a brigade that pushed the envelope with novel technologies. As the centerpiece of Army Modernization, the program was massively expensive and ultimately canceled in 2009.[79]

Absorption in two decades of frustrating counterinsurgency operations arguably focused the Army and Joint Force on current operations and distracted from the evolving threats of China, Russia, and other adversaries. More challenging still are the potentially revolutionary changes in the characteristics of warfare and ensuing questions on the use of military power and Landpower specifically.

In March 2017, Army Chief of Staff Mark Milley asked Lieutenant General Edward C. Cardon, commanding general of the Office of Business Transformation and former commanding general of the US Army Cyber Command, how to restructure the institutional Army.[80] Members of Congress and senior Army leaders deemed the Army's modernization enterprise too slow, incapable of generating overmatch with advanced technologies, and lacking in unity of command for modernization. The Army had "disparate organizations and dysfunctional processes" that resulted in "25 percent of Development, Test, and Evaluation funds [spent] on cancelled programs."

76.   Michael Vernon Voss, "ARCIC Transitions from TRADOC to AFC," U.S. Army (website), December 10, 2018, https://www.army.mil/article/214823/arcic_transitions_from_tradoc_to_afc; and Conrad C. Crane, Michael E. Lynch, and Shane P. Reilly, "A History of the Army's Future: 1998–2018 (v. 2.0)" (Historical Services Division study, Carlisle, PA, USAHEC, US Army War College, n.d.), 17–18.
77.   "Fact Sheet: RDECOM History," US Army Research, Development and Engineering Command, April 2015, https://api.army.mil/e2/c/downloads/419775.pdf.
78.   "Crusader 155mm," Army Technology (website), February 15, 2001, https://www.army -technology.com/projects/crusader/; and "RAH-66 Comanche – Reconnaissance/Attack Helicopter," Army Technology (website), November 7, 2000, https://www.army-technology.com/projects/ comanche/.
79.   Christopher G. Pernin, et al., *Lessons from the Army's Future Combat Systems Program* (Santa Monica: RAND Corporation, 2012), iii, https://www.rand.org/content /dam/rand/pubs/monographs/2012/RAND_MG1206.pdf. RAND_MG1206.pdf.
80.   Edward C. Cardon, e-mail message to author (Bonin), March 23, 2017.

Even approved programs struggled to get through the acquisition system, with 25 years as "the average time required to fully field a capability to every unit."[81]

In October 2017, the Army created eight cross-functional teams reporting directly to senior Army leaders to enable the Secretary of the Army to identify and manage investment and divestment priorities by assessing them against the Army's key modernization priorities.[82] On November 7, 2017, the Army Modernization Task Force under Cardon began a directed design for a new Army command focused on the future.[83] Working out of the Taylor Building in Crystal City (Arlington, Virginia), the Army Modernization Task Force assembled select personnel from the entire Army and received a short timeline. After selecting tentative courses of action (COAs) in January, the secretary of the Army and the Army Chief of Staff directed a course of action analysis (war game) to "execute a rigorous and transparent analytic event with key representatives of the modernization enterprise to assess specified COAs to enable COA refinement" between January 29 and February 3, 2018, at the Center for Army Analysis on Fort Belvoir, Virginia.[84] The participants included more than 140 individuals from the Army Secretariat, the Army staff, and other Army commands.

The war game to craft a futuristic-focused command included eight "monitors" tasked with "a very unique role as part referee, coach, and contributor . . . to stimulate discussion, based on [their] experience and unique perspectives, with leading questions, if needed, to address each of the course of action evaluation criteria." [85] Three courses of action were evaluated: a minimalist AFC headquarters plus only the cross-functional teams; a larger materiel-focused Army Futures Command with the cross-functional teams plus elements of the Army Materiel Command and Army acquisition; and a more holistic futures command including concept and materiel development with the Army Capabilities Integration Center and the Capability Development Integration Directorates from the Training

81.   Army Modernization Task Force (AMTF) ROC Drill II (read ahead, March 14, 2018), slide 2.

82.   Ryan D. McCarthy, "Statement of Ryan McCarthy Nominated to Be Under Secretary of the Army before the Senate Armed Services Committee," December 7, 2017, https://www.armed-services .senate.gov/imo/media/doc/McCarthy_07-12-17.pdf.

83.   Ryan D. McCarthy to Principal Officials of Headquarters, Department of the Army, Commander, memorandum, "Army Directive 2017-33 (*Enabling the Army Modernization Task Force*)," Army.mil (website), November 7, 2017, https://armypubs.army.mil/epubs/DR_pubs/DR_a /pdf/web/ARN6391_AD2017-33_Web_Final.pdf.

84.   William Hix, e-mail message to author (Bonin), January 22, 2018.

85.   Hix, e-mail message.

and Doctrine Command.[86] The wargame results still required higher-level decisions from the secretary of the Army.

In March 2018, senior civilian and uniformed Army leaders convened. The secretary of the Army approved the larger, more holistic Army Futures Command with the Army Capabilities Integration Center and the Capability Development Integration Directorates from the Training and Doctrine Command and the Research, Development and Engineering Command from the Army Materiel Command as well as acquisition elements. While the secretary of the Army and Army Chief of Staff elicited public comments, TRADOC Commanding General David G. Perkins opposed. Army General Order 2018-10 established the Army Futures Command to lead the Army's future force modernization enterprise.[87] General John M. Murray was charged with this mission as Army Futures Command's first commanding general on August 24, 2018.[88] What that mission means is still the subject of considerable debate.

A commentary from 2017, the year before Army Futures Command's establishment, recommended three goals: creating a centerpiece of Army Modernization with a culture of experimentation and developing concepts and technology together. The Army would gain a bona fide end-to-end solution with unity of command.[89] A commentary from 2018 sets the stage with the Army Modernization Strategy and its six capability areas to modernize critical core capabilities to regain overmatch for multidomain operations against near-peer adversaries.[90]

The Army Futures Command has a deliberately unorthodox structure to establish nontraditional relationships within the Army and across elements of the Joint Force, the interagency, and the private sector. It was also not built from scratch. In brief, the Army Futures Command received the reassignment of six subordinate organizations, three from the Training and Doctrine Command, one from the Medical Command, and two from the Army Materiel

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86.   US Army Futures Command Task Force Course of Action Analysis War Game Pre-Event Brief, January 24, 2018.

87.   HQDA, General Orders No. 2018-10 (June 4, 2018).

88.   Britney Walker, "Lt. Gen. John M. Murray Promoted to General and First to Lead Army Futures Command," DVIDS (website), August 24, 2018, http://www.dvidshub.net/news/290253 /lt-gen-john-m-murray-promoted-general-and-first-lead-army-futures-command.

89.   Neil Hollenbeck and Benjamin Jensen, "Why the Army Needs a Futures Command," War on the Rocks (website), December 6, 2017, https://warontherocks.com/2017/12/army-needs-futures -command/.

90.   Daniel S. Roper and Jessica Grassetti, *Seizing the High Ground – United States Army Futures Command*, ILW Spotlight 18-4 (report, Arlington, VA: Association of the United States Army, October 2018), 1–2, https://www.ausa.org/sites/default/files/publications/SL-18-4-Seizing-the-High -Ground-United-States-Army-Futures-Command.pdf.

Command.[91] There were some name changes.[92] Of greater note are the eight cross-functional teams designed to narrow existing capability gaps and the four integration and synchronization teams.[93] The command articulated its 2021 accomplishments by explaining the 35 priority systems for modernization.[94]

Such boldness has received mixed marks in its first four years. A 2019 report to the House Armed Services Committee from the Government Accountability Office emphasized the command's incomplete adoption of leading practices and the lack of a formal plan to identify and share lessons learned.[95] The 10-month gap between Murray's retirement and General James E. Rainey's appointment as commander further muddied evaluations of Army Futures Command's value to date.[96]

Recent analyses cite hindrances to Army Futures Command initiatives, such as senior official confirmation of the independent role of acquisition entities for modernization.[97] The same author foresees an identity crisis with "a rare public schism among Pentagon leaders."[98] The crux remains how to approach modernization. Decades of Army experience highlight several insights. First, the US Army, if not the wider Joint Force, is fond of technical solutions. Yes, these are major aspects of change. More rapid materiel acquisition is one element of future thinking and modernization. The command's lead is in concepts, experimentation, innovation, and thought. The search to regain overmatch for multidomain operations is no mere materiel solution, but rather a cultural and mental one.

Conclusion

The US Army has changed its institutional structure infrequently and reluctantly when confronted with wartime problems or pressure from the

91.   Roper and Grassetti, *Seizing the High Ground*, 5.
92.   "Army Futures Command – Supporting Commands," U.S. Army (website), n.d., accessed October 24, 2022, https://www.army.mil/futures#org-who-we-are.
93.   "Army Futures Command – Cross-Functional Teams," U.S. Army (website), n.d., accessed October 24, 2022, https://www.army.mil/futures#org-who-we-are; and "Army Futures Command – Integration & Sync Teams," n.d., accessed October 24, 2022, https://armyfuturescommand.com/ist/.
94.   "Army Futures Command – Year in Review," U.S. Army (website), n.d., accessed October 24, 2022, https://www.army.mil/article/253447/army_futures_command_releases_2021_year_in_review.
95.   US Government Accountability Office (GAO), *Army Modernization: Steps Needed to Ensure Army Futures Command Fully Applies Leading Practices* (Washington, DC: USGAO, 2019), 16–17, 24–25, table 4, p. 25.
96.   Jen Judson, "Army Futures Has a New Commander," DefenseNews (website), October 5, 2022, https://www.defensenews.com/land/2022/10/05/army-futures-command-has-a-new-commander/.
97.   Jen Judson, "In New Directive, US Army Reins in Army Futures Command," DefenseNews (website), May 4, 2022, https://www.defensenews.com/land/2022/05/04/in-new-directive-us-army-reins-in-army-futures-command/.
98.   Jen Judson, "Futures Command Faces Identity Crisis as Army Shifts Mission," DefenseNews (website), September 6, 2022, https://www.defensenews.com/land/2022/09/06/futures-command-faces-identity-crisis-as-army-shifts-mission/.

highest echelons. The service secretary or Army Chief of Staff pushed five of the six case studies, and the Department of Defense pushed one in 1962. The 1863 Cavalry Bureau and the 1903 Root reforms rested upon activist War Department secretaries; Stanton and Root fathomed the need for substantive reform. Interestingly, the Cavalry Bureau, while one of the least known, is similar to a current cross-functional team, delivering rapid results for units in combat.

Wartime necessity provided great impetus under unforeseen conditions, as in the Cavalry Bureau in 1863–65, the Baker-March team in 1918, and Marshall in 1942. Such urgency is not generally possible in peacetime, however murky in twenty-first-century competition. In addition, wartime reforms did not often survive post-war interest in smaller force structures and reduced budgets. Furthermore, the Army has often accomplished pre-war and post-war adaptation and innovation in response to emerging trends on the world stage, as in the initiatives of Root from 1900–1904 and Abrams from 1972–73.

By 2018, the US Army had not seen a major reorganization of its institutional structures in over 45 years. Forces Command, Training and Doctrine Command, and Army Materiel Command inaugurated the "Training Revolution" of the 1970s and 1980s, AirLand Battle, and the "Big Five" force modernization. Yet, Army modernization slowed, and preparations for large-scale combat operations once again suffered, given the Army's post-9/11 focus on two counterinsurgency and stability operations.

The creation of the Army Futures Command has a far different context today than in 1972. It is not designed to fix the acquisition system. Its mantra is a wider and deeper effort to transform Army processes (that is, culture and mindset). Traditional lessons learned or best practices may have limited applicability. Such is trailblazing.

These six major Army institutional changes followed a potential pattern. First, a key decisionmaker who recognized and framed a problem conducted an assessment of the situation. Second, higher-level staff presented proposed solutions. Third, senior Army leaders accomplished rapid decisions, including necessary legislative or presidential approvals. Lastly, innovative subordinate commanders and staffs executed aggressive implementation.

The case studies underline how institutional reform goes beyond the structural. Yes, each scenario had to balance the degree of centralized

or decentralized control. The greatest challenges were the ideological and philosophical differences over where to take the Army and how.

The Army faces further implications today amid the ongoing Army Futures Command case study. The case studies showcase timeless institutional dilemmas—irreconcilable interpretations of the roles of historical experience and traditions to solve current problems and how to devise future vision. For example, the Army's bureau system chiefs from 1860–1960 fought adaptation in four of the six case studies.

The period 1899–1921 underscored the strength of civil-military relations to accomplish change with the powerful combination of the civilian secretary of war and military chief of staff leading the change with presidential and congressional support. Notably, Root's and Baker's ignorance of military institutions dictated a long learning curve, which then developed into highly successful tenures.

These case studies also preclude a neat dichotomy between reactionaries and reformers. First, change and adaptation occurred amidst a cavalcade of interest groups, necessitating a blend of continuity and change. Second, the Army adapted as it also reflected or reacted to civilian influences at large, not just government officials.[99] Third, post-war demobilization and "return to normalcy" often resulted in the elimination of proven wartime innovation.

Ultimately, substantive change and adaptation must outlast a specific secretary and chief of staff, especially in the transition from war to peace and current to future operations and peace postured for war. The Army Futures Command has one four-star general among four in the institutional Army. The command's accomplishments will likely rest upon the synergy of secretary, chief, and all the Army's four-star generals over time—for example, Abrams as Army Chief of Staff, General Frederick C. Weyand as his successor, and DePuy and General Walter T. Kerwin Jr. as first commanders of the Training and Doctrine Command and the Force Command, respectively. This year's half-century anniversary of the Training and Doctrine Command and the Forces Command provides inspiration for the next half-century, with the understanding that it will likely be significantly different.

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99.   Clark, *Preparing for War*, 1–9, 268, 270–74.

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Innovation, Flexibility, and Adaptation: Keys to Patton's Information Dominance

Spencer L. French

ABSTRACT: In 1944, Third US Army created a cohesive and flexible system for managing information and denying it to the enemy that aligned operational concepts with technological capabilities. The organization's success in the European Theater highlights its effective combined arms integration. An examination of the historical record shows the creative design of the Signal Intelligence and Army Information Services enabled Third Army to deliver information effects consistently and provides a useful model for considering the dynamics at play in fielding new and experimental multidomain effects formations.

Keywords: World War II, Third United States Army, military effectiveness, force design, information advantage

Upon arriving in Greenock, Scotland, in January 1944, Lieutenant General George S. Patton Jr. met the first elements of Third Army (call sign Lucky). He greeted them by saying, "I am your new commander. I'm glad to see you. I hope it's mutual. There's a lot of work to be done, and there's little time to do it." By midsummer, Patton would create an Army capable of managing and controlling information to gain the operational advantage. Its call sign notwithstanding, Third Army succeeded in operations across Belgium, France, and Luxembourg not by luck or accident but by the successful integration of informational resources, the consistency between its operating concept for information and available technology, and organizational mobility and flexibility. American leadership and military planners struggle to control these elements in today's complex strategic environment and could benefit from reviewing Patton's strengths and Third Army's accomplishments.[1]

Recognizing the centrality of decision making and execution speed to campaigning, Patton could see Third Army required a cohesive system and dedicated elements to manage information and deny it to the enemy to gain the initiative, anticipate decisions, and extend operational reach. Today, the US Army requires similar systems and organizations to support its multidomain operations (MDO) approach and enable multidomain effects to generate information advantage and open windows of opportunity

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1.   Carlo D'Este, *Patton: A Genius for War* (New York: Harper Collins, 1995), 571.

against its great-power competitors. Simply deploying technologically advanced information-related capabilities will not deliver an advantage. The multidomain formations the US Army is fielding today, however, like Third Army in spring 1944, are in their infancy—lacking fully developed forces, staff structures, and processes necessary to create that advantage.

Third Army addressed its shortfall by creating the Army Information Service (AIS) to pair with its existing Signal Intelligence Service (SIS). This partnership integrated flexible and adaptive elements to manage the electromagnetic spectrum to gather and disseminate intelligence and information and security-friendly information while taking full advantage of existing technology within its operational limits. Postwar European Theater Board reviews recognized much of Third Army's construct as a best practice, and its approach impacted US Army thinking in subsequent years and remains relevant for the US Army and Joint Force in designing structures and forces to generate information advantage in this period of strategic competition.

Characterizing Military Effectiveness

Military organizations are effective to the degree to which they integrate their operational methods and supporting structures, exploit available technology without outstripping its capabilities, and are flexible enough to reorient themselves physically and intellectually. This concept is true for forces that operate primarily in the physical domains and in the information environment. First, military organizations are most effective when they combine arms to "take full advantage of their strengths while covering their weaknesses" and directly incorporate support structures into an integrated operational method. Therefore, to generate information advantage, organizations should combine information capabilities and enable them with dedicated intelligence, communications, and information transport support as part of an integrated concept to operationalize information and intelligence to enhance situational awareness and decision making and deny the same to the enemy.[2]

Successful military organizations also have operational concepts that fully exploit available technology but do not outstrip its potential. Organizations are less effective if they rely upon a misunderstanding of a communications, security, intelligence, or battlespace-awareness technology's potential. Failing to adopt emerging technologies quickly and

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2.   Allan R. Millett, Williamson Murray, and Kenneth H. Watman, "The Effectiveness of Military Organizations," in *Military Effectiveness*, vol. 1, *The First World War*, ed. Allan R. Millett and Williamson Murray (New York: Cambridge University Press, 2010), 13, 16.

integrate them into organizational constructs and operational concepts risks being left behind. Employing nascent technologies that have not been fully assimilated across the force or without sufficient redundancy risks failure under the strain of conflict.[3]

Another factor in efficiency is whether the organization is inherently flexible or able to move "intellectually and physically in either anticipated or unanticipated directions." Given the speed at which information can move and the alacrity with which many information-related capabilities can be deployed, military organizations must possess the flexibility to reorient rapidly on targets of opportunity, seize the initiative, and exploit it across domains. Since the enemy constantly alters its practices in competition and conflict, inflexible organizations also risk being overcome by a more adaptive foe.[4]

More effective military organizations should approach the contest for superior battlefield understanding by logically integrating their resources, aligning their organizational construct with a realistic appraisal of technological capabilities, and ensuring their construct remains flexible and adaptive. Beginning in March 1944, Third Army organized its Signal Intelligence Service and Army Information Service along these parameters.

Forming an Approach

As early as March 1944, Patton directed his intelligence officer (G-2) Colonel Oscar W. Koch to prepare an intelligence estimate for an offensive toward Metz even though Allied staff estimates projected Allied forces would not reach the area until 330 days after D-day (D+330). Patton and his staff visualized the battle for France as a high-tempo offensive focused on objectives deep in the enemy's rear area that balanced risk to gain and maintain the initiative and take advantage of windows of opportunity.[5]

Obstacles

A series of problems stood between Third Army and the execution of this plan. To achieve its goals, Third Army first had to gain the space to maneuver and break out. Assuming success, it would then need to maintain momentum and respond to new opportunities and threats while spread over hundreds of miles, often with elements lacking reliable contact with one

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3.   Millett, Murray, and Watman, "Effectiveness of Military Organizations," 15.
4.   Millett, Murray, and Watman, "Effectiveness of Military Organizations," 15.
5.   Robert W. Williams, "Moving Information: The Third Imperative," *ARMY* 25, no. 4 (April 1975): 18.

another. Patton's experiences in Africa and Sicily demonstrated the vital importance of precise and up-to-date knowledge of the location of his forces. Reporting latency and inaccuracy, however, presented ongoing challenges. The Third Army operations section estimated it took 10 to 12 hours for routine information to reach the Army Command Post. Finally, an enemy on the defense could trade space for time and reorganize, disrupting Third Army's offensive and regaining the initiative.

Leveraging Information

As early as 1943, Patton developed a concept to leverage information. He viewed intelligence as providing the initial advantage to "do it first."

> First—surprise; find out what the enemy intends to do and do it first. Second—rock the enemy back on his heels— keep him rocking—never give him a chance to get his balance or build up. Third—relentless pursuit— a l'outrance the French say—beyond the limit. Fourth— mop him up.[6]

Intelligence provided valuable warnings and a means to gain and maintain the initiative, anticipate decisions, and sequence actions.

Patton understood the critical relationship between speed and initiative. The time to exploit opportunities against an adaptive enemy is limited.[7] He recognized that injecting friction, misinformation, and delays into the enemy's sensing and decision-making system would keep the enemy reactive. Koch described Patton's formula as:

> . . . applying the tactical concept that it would take a certain minimum of time for a large enemy force to react. By progressively following up his first action by a second in less than that minimum, he would catch his enemy in the act of maneuvering to react to the first and so on.[8]

6.   Carlo D'Este, *Bitter Victory: The Battle for Sicily, 1943* (New York: Dutton, 1988), 140.
7.   Headquarters, Department of the Army (HQDA), *Operations,* Field Manual (FM) 3-0 (Washington, DC: HQDA, 2022), 3-3.
8.   Oscar W. Koch and Robert G. Hays, *G-2: Intelligence for Patton* (Atglen, PA: Schiffer Publishing, Ltd., 1999), 151.

Third Army did not possess the capability to execute this formula in the spring of 1944. After a brief period of analysis, it adopted organizational changes to fill the capability gap.[9]

Building Specialized Units

Third Army needed to create relative informational advantages and position itself for decision dominance in France within a few months. Third Army aggressively adapted its Signal Intelligence Service and repurposed a mechanized cavalry group to serve as an "information service," creating new arrangements for functional responsibilities and processes. These changes integrated information management and security capabilities under executive agents, employed technologies within a realistic appraisal of their capabilities, and ensured organizational flexibility, enabling Third Army to converge several capabilities across multiple domains to create effects against enemy systems and decisionmakers. These new organizations and staff arrangements increased the "speed of recognition, decision making, movement, and battle drills" critical to agility in multidomain operations and enabled Third Army to adjust "its disposition and activities" more rapidly than the Germans and exploit the opportunities created by the convergence of capabilities.[10]

Signal Intelligence Service: Information Protection and Denial

Third Army Signal Intelligence Section held a large part of the responsibility to protect friendly information and deny the enemy use of information. Major Charles W. Flint, a "young, trigger smart expert," led these efforts. Doctrinally, the Signal Intelligence Service was a subordinate element of the Army Signal Section, responsible for managing signal intelligence, supervising signal security, and issuing cryptographic materials. The Signal Intelligence Service rapidly expanded between March and August 1944, however, taking on a progressively larger communications security, electronic attack, and military deception mission.[11]

Within 24 hours of Third Army's activation in England, the Signal Intelligence Service began communications security monitoring of Third Army radio networks. Lacking a dedicated organization for monitoring,

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9. Robert W. Williams, as told to Lyman C. Anderson, "Third Army Reconnaissance," *Cavalry Journal* (January-February 1945): 21; and Third United States Army, *After Action Report: Third US Army, 1 August 1944–9 May 1945*, vol. 2, *Staff Section Reports, G–3* (Regensburg, DE, May 1945), 10.
10.   HQDA, *Operations*, 3-3.
11.   Robert S. Allen, *Lucky Forward: The History of Patton's Third U.S. Army* (New York: Vanguard Press, 1947), 56; and US War Department, *Signal Corps Intelligence*, FM 11-35 (Washington, DC: US War Department, 1942), 2, https://digitalcommons.unl.edu/dodmilintel/113/.

Signal Intelligence Service directed the Army-level 118th Radio Intelligence (RI) Company and each corps-level signal service company to allocate some receivers to the mission.[12] The 118th RI Company and signal service companies proved flexible and adaptive organizations over the next year. Like most radio intercept and signal service companies, the 118th RI Company consisted of more highly educated and technically proficient soldiers. This flexibility proved critical as these soldiers were often shifted physically and in terms of activities to meet emerging requirements.[13]

In the spring, the Signal Intelligence Service also assumed direct supervision of the Code Room, a subordinate office of the Third Army Message Control Center responsible for the cryptographic process and "coordinating the transmission of outgoing orders and reports and expediting the delivery of incoming messages." Eventually, in France, the Signal Intelligence Service took over management of the entire center and secured the flow of information to decisionmakers. This highly effective direct integration of information assurance, security, and intelligence exceeded the level of integration of other US armies in the European Theater of Operations.[14]

The Signal Intelligence Service also took the lead in England for all military deception operations in the electromagnetic spectrum. For example, it supported the Supreme Headquarters Allied Expeditionary Force's Operation Fortitude plan to make the Germans believe the Allies would invade fortress Europe at the Pas-de-Calais, led by Patton's fictional First US Army Group. To increase the narrative's verifiability, the Allies mimicked the day-to-day radio signature of the fictional First US Army Group as it seemingly prepared for the invasion. The Signal Intelligence Service oversaw the entirety of Third Army's participation in this plan

12.   Third United States Army, SIS, "Third Army Radio Intelligence History in Campaign of Western Europe," SRH-042, October 1945, p. 24, Records of the NSA, National Archives Record Group 1457, National Archives and Records Administration, College Park, MD.

13.   John W. DeGrote, *The 118th Signal Radio Intelligence Company, 1942–1946, Third US Army, World War II*, (J. W. Grote: 1991), 8.

14.   US War Department, *Operations*, FM 100-5 (Washington, DC: US War Department, 1941), 36, Combined Arms Research Library (CARL), Obsolete Military Manuals, Fort Leavenworth, KS; Army Security Agency (ASA), "Histories of Radio Intelligence Units, European Theater, September 1944 to March 1945, Vol. 2," SRH-228, Records of the NSA, National Archives Control Number NN3-457-83-34, National Archives and Records Administration, College Park, MD, 2:7 (hereafter cited as SRH-228); and General Board of the United States Forces European Theater, *Study No. 111*, *Signal Corps Operations* (report of the General Board United States Forces, European Theater, November 1945), 34, CARL, World War II Operational Documents, Fort Leavenworth, KS.

and controlled activity on Third Army's radio nets to confuse German traffic analysis.[15]

Third Army increasingly aligned additional responsibilities under the Signal Intelligence Service from March through June, resulting in greater efficiency. For example, Signal Intelligence Service established a close working relationship with Third Army's counterintelligence section to identify attempts at wiretapping. Similarly, starting in April, it took the lead on procuring and directly distributing medium-grade cryptographic systems to corps-level and below elements to ensure they were employing the most up-to-date and functional communications security equipment. In May, the Signal Section reassigned a small photographic detachment from its Captured Documents Department to the Signal Intelligence Service. This detachment photographed captured German cryptographic documents and devices and provided insight into German coding and encryption schemes. The detachment's direct integration into the Signal Intelligence Service empowered it to conduct exploitation of the captured materials, decreasing the time and coordination required to generate solutions to German codes and ciphers and begin collection.[16]

As Third Army prepared to embark for the continent, it codified the Signal Intelligence Service's role as the executive agent for coordinating all "radio countermeasures." For the remainder of the war, Third Army possessed a single coordinating body for synchronizing communications intelligence collection, communications security, electronic attack, and electromagnetic data and integrating them with operational-level maneuver. Consequently, Third Army possessed a rudimentary staff structure that could enable multidomain effects at the operational level.[17]

These structural changes enabled Third Army to inform decision making, protect friendly information, and attack enemy decision making. By the end of May, Third Army had optimized its Signal Intelligence Service to balance the Army's emissions control requirements with the need to ensure valuable information was securely flowing to decisionmakers. Similarly, the Signal Intelligence Service was well postured to attack enemy decision-making

15.   Michael J. Donovan, "Strategic Deception: Operation Fortitude" (strategy research project, US Army War College, Carlisle, PA, 2002), 9; Eric D. Hresko, "Quicksilver IV: The Real Operation Fortitude" (master's thesis, Air University, Maxwell Air Force Base, AL, 2010), 22; and ASA, "Radio Intelligence Units," 2:6.
16.   ASA, "Radio Intelligence Units," 2:4, 2:7, 2:15.
17.   Third United States Army, *After Action Report: Third US Army, 1 August 1944–9 May 1945,* vol. 1, *The Operations* (Regensburg, DE, May 1945), 561, CARL, World War II Operational Documents, Fort Leavenworth, KS; and Third United States Army, *After Action Report: Third US Army, 1 August 1944–9 May 1945,* vol. 2, *Staff Section Reports, Signal* (Regensburg, DE: May 1945), 4, CARL, World War II Operational Documents, Fort Leavenworth, KS.

processes through the synchronized employment of radio countermeasures and communications security procedures while improving Third Army's understanding of the enemy by attacking the security of enemy information.

Yet, the Signal Intelligence Service could not provide Third Army with information about the friendly situation to provide superior understanding, faster and better decision making, and synchronization during high-tempo operations.

The Army Information Service

Patton and the then Colonel Elton F. Hammond, the Third Army signal officer, realized part of the solution to this problem lay in the US Army's provisional signal information and monitoring (SIAM) companies. These companies were an American adaptation of the British "Phantom" liaison patrols (also called "J" Service), which served with British Eighth Army in Tunisia and monitored lower-echelon radio networks for communications security infractions and information that could enhance friendly situational understanding and then passed the information directly to headquarters, bypassing normal channels.[18]

Patton first observed J Service's utility in Africa in 1942 and employed it for the first time during Operation Husky in 1943 when two British J Service officers were assigned to Seventh Army. In April 1943, Fifth US Army established a provisional American signal information and monitoring company and deployed it later that year to Italy, where it functioned alongside the Phantom model. Fifth Army's adaptation was successful in late 1943 and reflected the ability of the United States and British coalition partners to adapt and build upon a working concept. Such partnerships and interoperability are critical in employing information-related capabilities and developing them over the course of a conflict against a peer enemy. Fifth Army's success with its provisional signal information and monitoring company, along with Patton's experience with J Service in Sicily, likely convinced Patton that Third Army needed a similar service.[19]

In early 1944, Hammond tasked Flint and the Signal Intelligence Service to recommend further improvements to Fifth Army's signal information and monitoring company model. Again reflecting the often close partnership between British and American technical services, Signal Intelligence

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18.   *American Signal Intelligence in Northwest Africa and Western Europe*, vol. 1, *United States Cryptologic History Sources in Cryptologic History* 4 (Fort Meade, MD: NSA, 2010), 66.

19.   Howe, *American Signals Intelligence*, 66, 85; John S. D. Eisenhower, "The Army Tactical Information Services," *Military Review* 29, no. 5 (August 1949): 34; and Walter B. Potter, "SIAM: Signal Information and Monitoring," *Military Review* 25, no. 2 (May 1945): 28.

Service officers visited the British Phantom regiment in England to gather lessons learned. Based on his analysis of Fifth Army's operations in Italy and lessons from the Phantom Regiment, Flint developed a proposed table of organization and equipment for a signal information and monitoring company. Third Army submitted this proposal to Supreme Headquarters Allied Expeditionary Force in April 1944, yet it soon became apparent Third Army would deploy to France without this critical capability. So, Flint, Hammond, and Maddox generated a plan to adapt a cavalry group as an information service.[20]

Third Army selected 6th Cavalry Group (Mechanized), commanded by Colonel Edward M. "Joe" Fickett, to serve as the Army Information Service. It was comprised of a headquarters element and two identical nonorganic cavalry squadrons that were authorized 31 officers, 2 warrant officers, and 721 enlisted men in three reconnaissance troops, a light tank company, and an assault gun company.[21]

The group arrived in Northern Ireland in 1942 and conducted field and command post exercises for two years. Fickett emphasized to his formation that "good communications is the guts and essence of cavalry reconnaissance, and if every soldier in the group were a qualified [radio] operator, there still wouldn't be enough." Fickett's vision for the 6th Cavalry Group (Mechanized) and cavalry in general aligned well with the requirements of an Army Information Service.[22]

Events moved quickly after the creation of Third Army's Information Service in May 1944. The 6th Cavalry Group (Mechanized) transformed into an information service, deployed to the continent, and entered combat in fewer than 80 days. Patton believed time and detail were lost when transmitting messages to Army Headquarters through normal channels. Therefore, he directed the Army Information Service to enhance situational understanding at the operational level by operating a "rapid communications channel, bypassing normal command channels." The Army Information Service would monitor radio nets and gather information and run a system of patrols while liaising with division G-2 and G-3 sections. The emphasis on liaison and the decision

20.   Third United States Army, *Staff Section Reports, Signal*, 5; and ASA, "Radio Intelligence Units," 2:2, 2:3.
21.   George Forty, *The Armies of George S. Patton* (New York: Arms & Armour Press, 1996), 78; and William Stuart Nance, "Patton's Iron Cavalry – The Impact of Mechanized Cavalry on the U.S. Third Army" (master's thesis, University of North Texas, Denton, TX, May 2011), 26.
22.   Williams, "Moving Information," 18; Ellsworth B. Crowley, *The Fighting Sixth: History of the 6th Cavalry Regiment, 1861–1960* (Dallas, TX: Military Publications, 1961); US War Department, Adjutant General's Office, *Official Army Register* (Washington, DC: US War Department, 1947), 358; and Robert D. Sweeney, "How Patton Kept Tabs on His Third Army," *Armored Cavalry Journal* (March-April 1949): 53.

to retain the communications security monitoring mission under SIS control and the radio intelligence companies represented a significant adaptation from the Phantom-Signal Information Monitoring company model.[23]

The Army Information Service reported reconnaissance and intelligence information to the G-2 and friendly force information to the G-3. On behalf of the Signal Section, the Signal Intelligence Service would exercise technical direction of the Army Information Service and provide guidance on methods of procedure, employment, and coordination. Patton made it clear that enhanced situational awareness was critical to enabling operational maneuver in France, and Fickett and the Army Information Service were directly responsible to the Army commander for the mission's success.[24]

Immediately, Fickett and Group Operations Officer Major Thomas H. Stewart III implemented Operation Unicorn, their plan for transforming the group and training it for operations as an information service. Per Patton's directive, the group's headquarters would act as the AIS headquarters. One of the two squadrons would serve as the AIS force provider, and the other squadron would serve as an Army-level reconnaissance element. Fickett and Stewart created 13 self-sustaining information detachments from the force provider squadron. Nine platoon-sized "information detachments" would be assigned to the division level, and four small supplementary detachments consisting of troop headquarters would be assigned to the corps.[25]

At the division level, information detachments consisted of two sections led by lieutenants—a "command and monitoring" section and a "patrol and liaison" section with about 20 enlisted soldiers per section. The monitoring section tracked and retransmitted relevant radio traffic within the assigned division to AIS headquarters. The patrol and liaison section moved with the forward line of troops, providing up-to-date information regarding the overall combat situation. With the understanding that these detachments could be assigned to either armored or infantry divisions performing various missions and also likely could be reassigned over the course of the campaign, Fickett and Stewart ensured the organizations were flexible.[26]

The motorcycles, jeeps, and radios currently assigned to 6th Cavalry Group were a good start, but they were insufficient to equip all the

23.   Crowley, *Fighting Sixth*; and Third United States Army, *Staff Section Reports, G–3*, 10.

24.   Sweeney, "How Patton Kept Tabs," 51; Williams, "Moving Information," 18; and Third United States Army, *Operations*, 603.

25.   Williams, as told to Anderson, "Third Army Reconnaissance," 21; and Third United States Army, *Staff Section Reports, G–3*, 10.

26.   Sweeney, "How Patton Kept Tabs," 52; Third United States Army, *Staff Section Reports, G–3*, 10.

new information detachments. To supplement on-hand equipment, Third Army requested additional equipment based on the signal information and monitoring company table of organization Flint had developed in the spring.[27]

The training plan developed by Fickett and Stewart focused on officer training, a communications exercise at reduced distances, and a two-day situational training exercise. Cavalry officers trained on liaison, radio monitoring and employment procedures, and reporting practices. The instruction also covered armored and infantry division doctrine and organization. While the classroom portion of the training plan went well, the lack of radio equipment hampered the ability of 6th Cavalry Group to conduct the planned communications exercise and test the provisional organization of the information detachments. Ultimately, Fickett and Stewart were forced to cancel the field exercise.[28]

While training and reorganization were in progress, Flint worked closely with Fickett and Stewart to create processes and an Army-level facility for receiving the information from the dispersed divisional and corps information detachments. Flint procured a communications van to serve as the SIS headquarters and an AIS information center. While the Signal Intelligence Service and the Army Information Service were separate organizations, answering to separate staff elements (the G-3 for the Army Information Service and the G-2 and signal officer for the Signal Intelligence Service), this colocation had added benefits. Up-to-date combat information, signals intelligence, and awareness of communications security shortfalls would all pass through a single location.[29]

Success in multidomain operations rests on seeing oneself and the enemy reliably and accurately. The physical colocation and innovative connections between the Army Information Service, the Signal Intelligence Service, and the G-2 and G-3 sections provided Third Army with a unique ability to sense itself and the enemy in the physical domain and the electromagnetic environment. It allowed Third Army to harmonize effects to shape enemy understanding. The Army Information Service actively hunted information and ensured the Army commander had access to a reliable real-time picture of the friendly force. This support complemented the Signal Intelligence Service's role of denying the same to the enemy—through electromagnetic deception, electronic attack, and information security and providing the

27.   Williams, as told to Anderson, "Third Army Reconnaissance," 21; and ASA, "Radio Intelligence Units," 2:3.
28.   Third United States Army, *Staff Section Reports, G–3*, 10.
29.   Howe, *American Signals Intelligence*, 126; and ASA, "Radio Intelligence Units," 2:10.

commander with access to enemy information through communications intelligence. Together, this construct enhanced and assured Army-level decision making and enabled Patton to maintain the initiative and extend operational reach in France.

Third Army Success: August to December 1944

This construct contributed to Third Army's successes over the coming months. In France, the distances and pace involved in operations strained the ability of the Army to communicate with its dispersed elements and maintain a timely and clear understanding of its disposition. At one point in mid-August, Third Army was stretched from Brittany in the west to the Seine River in the east and from Normandy south to the Loire River. Communications across large distances were challenging to maintain due to the technical limitations of Army radio equipment and the frequent displacement of Army and Corps headquarters. Due to its flexibility and facility with available technology, the Army Information Service mitigated these challenges by establishing radio relays and running motorcycle courier services. The Third Army G-2 later noted that "when no other means was available, the AIS could get the information through."[30]

Third Army's ability to exploit new technology via the Signal Intelligence Service paid dividends. For example, Third Army participated in one of the first uses of active radio countermeasures in direct support of ground forces in the European Theater during the Battle of the Bulge. In conjunction with Third Army's counterthrust near Bastogne (December 29, 1944 to January 7, 1945), 8th Air Force B-24s flew relays over the Ardennes, carrying the AN/ART-3 "Jackal" high-powered airborne radio jammer. Thus, German tanks operating AM radio sets experienced significant jamming while American tanks operating FM receivers experienced little interference. As the executive agent for radar countermeasures, the Signal Intelligence Service helped coordinate these experimental radio countermeasure missions on behalf of Third Army. After the war, Third Army recommended the US Army continue direct coordination between

30.   George Raynor Thompson and Dixie R. Harris, *United States Army in World War II, Technical Services – The Signal Corps: The Outcome (Mid-1943 through 1945)* (Washington, DC: US Army Center of Military History, 1991), 119; DeGrote, *118th Signal Radio Intelligence Company*, 59; and Third United States Army, *Staff Section Reports*, *G-3*, 15.

Army-level signal intelligence and security entities and entities involved in radio countermeasures to exchange information and coordinate operations.[31]

Integrating the Signal Intelligence Service and particularly the Army Information Service into the Third Army command-and-control structure enabled superior situational awareness at critical points. For example, in September, as Third Army was approaching the German West Wall, Field Marshal Johannes A. Blaskowitz's Army Group G counterattacked from the Neufchâteau-Épinal area against the exposed flank of Third Army's XII Corps south of Nancy. The German LXVI Corps and the 16th Division were responsible for holding the assembly area between Épinal and Neufchâteau long enough to mass armored forces for the counterattack. In the second week of September, Patton tasked Major General Wade H. Haislip's XV Corps with filling the gap between Third Army and Seventh Army by assuming the position to the right of the XII Corps. Enhanced situational awareness provided by AIS detachments assigned to XV Corps allowed Haislip to synchronize the actions of Major General Ira T. Wyche's 79th Infantry Division to the north and General Jacques-Philippe Leclerc's 2nd French Armored Division as they swept through the German LXVI Corps assembly area on September 11. In part thanks to the work of the Army Information Service over the next few days, 79th Division reduced German positions near Neufchâteau, routing the 16th Division in hard fighting by September 15.[32]

These and numerous other examples of situational awareness enhancement, decision support, and information denial demonstrate the value of the adaptations made to the Signal Intelligence Service and the creation of the Army Information Service. The European Theater Board and the personal observations and accounts of Third Army commanders, staff, soldiers, and observers drew the conclusion in the months and years after the conflict that SIS and AIS operations significantly contributed to Third Army's ability to maintain a superior understanding of itself and its foes.

Third Army Accomplishments

Between March when it stood up and late July when it arrived in France, Third Army dramatically altered how it fought for information. It expanded the role of its Signal Intelligence Service, and in just over

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31. Raynor and Harris, *Signal Corps*, 164; National Defense Research Committee, *Summary Technical Report of Division 15 National Defense Research Committee*, vol. 1, *Radio Counter-Measures* (Washington, DC, 1946), 310, Combined Army Research Library, Fort Leavenworth, KS; and Third United States Army, *Staff Section Reports, Signal*, 25.

32. John Nelson Rickard, *Patton at Bay: The Lorraine Campaign, 1944* (Lincoln, NE: Potomac Books, 2004), 94; and Williams, as told to Anderson, "Third Army Reconnaissance," 23–24.

80 days, it designed, tested, fielded, and deployed the Army Information Service to enable decision making. Once in France, the Army Information Service and Signal Intelligence Service enhanced friendly decision making and protected friendly information while attacking the enemy's decision-making ability and disrupting its use of information. The sweeping changes and resulting increase in effectiveness were not random. Instead, a realistic assessment of the challenges Third Army anticipated in France and an appreciation of recent combat performance in the Mediterranean Theater of Operations drove the reform. These changes also reflected an appreciation for the need to integrate informational resources, ensure consistency with available technology, and maintain organizational flexibility.

Third Army fostered a close relationship between the Army Information Service, the Signal Intelligence Service, the G-2, and the G-3, resulting in an effective alignment of information, intelligence, and cryptological, logistical, and other support functions. Third Army surpassed most armies in the European Theater of Operations by empowering the SIS element to conduct cryptographic, signal security, and signal intelligence functions and deconflict electromagnetic deception, electronic attack, and friendly emissions. Dedicated logistical and other support structures enabled the Signal Intelligence Service to manage these operations effectively. By creating an organization capable of managing many similar functions, Third Army enhanced reliability and efficiency and increased decision-making speed.

The creation of the Army Information Service represented an alignment between operational concepts and available technology. Third Army planned to offset communications and information technology shortfalls with liaison and human initiative. The Army Information Service bridged the communications and information-processing gap, speeding information to the Army commander and facilitating situational awareness and rapid decision making. Third Army's adaptation of the signal information and monitoring company construct acknowledged the limitations technology and a strategy to overcome an intermittently connected and bandwidth-limited environment placed on Third Army.

Finally, and perhaps most importantly, Third Army's mobile and flexible organizational design came from its cavalry group and expeditionary RI company. At multiple points, Third Army leaders intentionally designed the Army Information Service for maximum flexibility and encouraged the Signal Intelligence Service to pursue new ways to deny the enemy information. Third Army's information forces entered combat with established systems and processes while recognizing virtually all

constructs could change based on conditions in France. Third Army leaders understood the only way to gain and retain an advantage was to build adaptable formations. Taken together, Third Army in France underscores the criticality of integrating resources as part of a combined arms approach that ensures consistency between concepts and technology and fosters organizational flexibility.[33]

Recommendations

To support its MDO approach in the era of great-power competition, the Army is developing, fielding, and adapting new and experimental units to enable multidomain effects. Like Third Army in March 1944, the US Army of the early twenty-first century has organized itself with information-related capabilities largely insulated from one another and imperfectly integrated into combined arms warfare. To address this shortfall, the Army established the 915th Expeditionary Cyber Warfare Battalion in 2019 to provide cyber, electronic warfare, and information operations support to Army Service Component Commands. The same year, the Army fielded its first Intelligence, Information, Cyber, Electronic Warfare and Space Battalion (now officially designated as Multidomain Effects Battalions) to integrate signals and military intelligence with capabilities in space, cyberspace, information space, and the electromagnetic spectrum. The multidomain effects battalions are reminiscent of the Third Army Signal Intelligence Service and possess an intelligence support structure and defensive and offensive capabilities. Over the coming years, these formations will experiment with new technologies and processes to allow the US Army to generate informational advantages in competition, crisis, and conflict. While the specific capabilities hosted by these new formations are more sophisticated than those of the Signal Intelligence Service, the organizing principles that made the Signal Intelligence Service successful remain relevant.[34]

First, effective military entities organize themselves and have concepts that integrate all information resources and support functions. Third Army's experience demonstrates the importance of creating integrated

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33. Williams, as told to Anderson, "Third Army Reconnaissance," 21.
34. Justin B. Gorkowski, "US Information Operations in Large-Scale Combat Operations: Challenges and Implications for the Future Force," in *Perceptions Are Reality: Historical Case Studies of Information Operations in Large-Scale Combat Operations*, ed. Mark D. Vertuli and Bradley S. Loudon (Fort Leavenworth, KS: Army University Press, 2018), 17; Mark Pomerleau, "New US Army Unit Is Building Concepts for Tactical Cyber Operations," C4ISRNET (website), December 29, 2021, https://www.c4isrnet.com/cyber/2021/12/29/new-us-army-cyber-unit-is-building-concepts-for-tactical-cyber-operations/; and Charles McEnany, "Multidomain Task Forces: A Glimpse at the Army of 2035," Association of the United States Army (website), March 2, 2022, https://www.ausa.org/publications/multidomain-task-forces-glimpse-army-2035.

structures to synchronize the real-time denial of information to the enemy, protect friendly information, and assure the availability of priority information in a denied, disrupted, intermittent, and bandwidth-limited environment. The SIS example also indicates the importance of directly aligning supporting functions like intelligence and logistics to enable these organizations to protect information and deny it to the enemy.

Second, effective organizations exploit available technology and develop appropriate operational employment concepts to match the technology's demonstrated capabilities. The Third Army SIS example suggests the importance of integrating emerging technology into operations rapidly and exploiting its potential. The Army Information Service's performance indicates the value of building redundancy and leveraging human resources to ensure the ability to generate information effects resiliently.

Finally, effective organizations have the mobility and flexibility necessary to reorient themselves on new threats or opportunities. Much like Third Army's Signal Information Service, expeditionary cyber, electronic warfare, and information operations elements may be expected to support a range of elements performing diverse missions from competition through conflict. Success in multidomain operations is also predicated upon the ability of US Army elements to exploit temporary windows of opportunity. Consequently, future multidomain effects battalions and expeditionary cyber team-like organizations should have the intellectual, organizational, and physical ability to transition missions, supported elements, and locations.

Although technology has progressed significantly since 1944, and *Field Service Regulations: Operations*, War Department Field Manual FM 100-5 (1944) did not reference information-related capabilities or concepts like decision dominance or information advantage, Patton would understand the challenges the US Army faces today. Like Third Army in World War II, the US Army currently struggles with efficiently employing its capabilities to generate informational advantages and open windows of opportunity against peer adversaries. Third Army adapted and modified existing organizations with available technology to integrate capabilities while maintaining flexibility. This model adaptation of the Army Information Service and Signal Intelligence Service illustrates the dynamics at play in fielding new and experimental multidomain effects formations.

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Recognizing the Increasing Importance of the US-ROK Alliance

Eric Hartunian

ABSTRACT: My first essay as SRAD director sets the stage for the Strategic Studies Institute's research on the growing importance of South Korea to the US alliance system and security objectives across the Indo-Pacific region, provides reasons why South Korea may become commensurate with Japan as the region's primary US ally, and proposes ways the United States should leverage this reality to maximize this relationship and maintain a free and open Pacific. This important analysis challenges the orthodox view of South Korea as a self-contained problem set with little relevance to other regional security issues and explains its underappreciated connections to regional stability.

Keywords: South Korea, North Korea, Indo-Pacific (INDOPACOM), armistice agreement, security, nuclear, Russia-Ukraine War, national defense

June 2023 marks the 70th anniversary of the alliance between the United States and South Korea (Republic of Korea/ROK) and of the armistice agreement—a historic milestone by any measure, but one that should give us pause to recognize an opportunity. It is time to acknowledge the immense value of this relationship and to elevate the importance of the alliance to security concerns beyond Northeast Asia. To these ends, the Strategic Studies Institute (SSI) has partnered with outside scholars to launch a yearlong effort to examine South Korea's growing importance to the US alliance system and security objectives across the Indo-Pacific region. The project will build novel perspectives on why South Korea may become commensurate with Japan as the region's primary US ally and how the United States should leverage this reality to maximize its relationship with South Korea and maintain a free and open Pacific. This important analysis challenges the orthodox view of Korea as a self-contained problem set with little relevance to other regional security issues and explains South Korea's underappreciated connections to regional stability.

A quick tour of the region and key data points contextualize SSI's assertion that South Korea is becoming more important to East Asian security. First and foremost, the *2022 US National Security Strategy* defines the

importance of a "free and open Indo-Pacific."[1] Second, South Korean President Yoon Suk-Yeol's administration, though not exactly anti-China, is more amenable to US security interests than the previous administration was.[2] December 2022 marked South Korea's first *Strategy for a Free, Peaceful, and Prosperous Indo–Pacific Region*, which outlines a security outlook that expands beyond the peninsula to become a "Global Pivotal State" and to reaffirm support for a "rules-based order built on the universal values including freedom, democracy, the rule of law, and human rights."[3] Aside from US and ROK strategic documents, we cannot deny the increasing relevance of South Korea, given its status as the world's 10th-largest economy (fourth-largest in Asia), sixth-busiest shipping port, second-largest ship-building nation, and its rapidly expanding defense export industry that provides Ukrainian, Polish, Australian, and other customers an alternative to Western or Soviet-era weapons systems.[4]

While both the US and ROK governments see broader regional implications of the alliance, immediate threats on the peninsula persist. The past 12 months have seen an unprecedented increase in North Korean provocations and missile launches. Ostensibly a reaction to revitalized large-scale US-ROK military exercises, these launches demonstrate increased sophistication and capability in North Korea's weapons program and simultaneously raise the temperature of regional relations. While these provocations seem confined to the peninsula at face value, their broader impact reverberates far beyond it. Many of the missile launches overfly or land in Japan's exclusive economic zone, and the trajectory of the more successful tests suggests these missiles can reach the mainland United States.

Perhaps most concerning is the seeming inability of traditional diplomatic and deterrence measures to limit North Korea's pugnaciousness. Other concerns are increased rhetoric in South Korea and Japan questioning the credibility of the United States' nuclear deterrence and domestic ROK support for homegrown

1. Joseph R. Biden, *National Security Strategy: October 2022* (Washington, DC: White House, 2022), 37–38, https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National -Security-Strategy-10.2022.pdf.

2.   Derek Grossman, "U.S. Cannot Count on South Korea's Yoon to Line Up against China," *RAND Blog* (blog), February 9, 2023, https://www.rand.org/blog/2023/02/us-cannot-count-on-south-koreas -yoon-to-line-up-against.html; and Joel Atkinson, "Don't Mistake South Korea's Yoon Suk-Yeol for a China Hawk," *Diplomat* (website), August 27, 2022, https://thediplomat.com/2022/08/dont-mistake -south-koreas-yoon-suk-yeol-for-a-china-hawk/.

3.   *Strategy for a Free, Peaceful, and Prosperous Indo–Pacific Region* (Seoul: Government of the Republic of Korea, December 2022), 7–8, https://www.mofa.go.kr/viewer/skin/doc.html?fn=20230106093833927 .pdf&rs=/viewer/result/202304.

4.   "Indicators of Economy in South Korea," WoldData.info (website), n.d., https://www.worlddata .info/asia/south-korea/economy.php; and Andy Hong, "2022 in Review: South Korean Arms Exports," *Peninsula* (blog), December 22, 2022, https://keia.org/the-peninsula/2022-in-review-south-korean -arms-exports/.

nuclear weapons.[5] This area demands additional research to understand the implications and trade-offs inherent to nuclear agreements between allies. We must also consider how South Korea and the United States will manage the increasingly complex and delicate balancing act of defending against North Korean aggression and dealing with broader competition across the Indo-Pacific.

Domestic challenges in South Korea also warrant further research. Population decline and waning public support for conscripted service and reunification partly justify the ROK Ministry of Defense's technological reform initiatives focused on improvements and force-design modernization. Increased lethality and intelligence capabilities will ease the burden on end strength while furthering high-end capabilities. These capabilities also have implications for the Conditions Based OPCON Transfer and potential opportunities with changing US force posture. China's broader influence over the ROK economy and the degree to which China could punish South Korea over the Terminal High Altitude Air Defense system deployment (and potential future deployments) may also merit further inquiry as part of this effort.[6]

As Russia's war in Ukraine is in its second year, its effect on Indo-Pacific security concerns is evident. The triad of China, Russia, and North Korea—each seeking to further their own interests—is keenly aligned to thwart any US military presence in Northeast Asia. North Korea quickly recognized Russian claims to Donetsk and Luhansk in Ukraine and is also seeking weapons-for-food deals with Russia.

China likewise refuses to condemn Russian aggression, often repeating Russian talking points on the conflict—even going so far as to blame the West for provoking the crisis—and attempting to broker a ceasefire that mostly favors Russian interests.[7] Additionally, China is surely studying the conflict as a preview to a potential Taiwan conflict. For example, noting the success of economic sanctions against Russia, China is taking action to insulate its economy from any possible future sanctions by reducing

5. Takahashi Kosuke, "Japan, South Korea Wonder: How Strong Is the US Nuclear Umbrella?," *Diplomat* (website), January 27, 2023, https://thediplomat.com/2023/01/japan-south-korea-wonder -how-strong-is-the-us-nuclear-umbrella/.
6. Kim Tong-Hyung, "China, South Korea Clash over THAAD Anti-Missile System," Defense News (website), August 10, 2022, https://www.defensenews.com/global/asia-pacific/2022/08/10 /china-south-korea-clash-over-thaad-anti-missile-system/.
7. Carla Freeman, Mary Glantz, and Andrew Scobell, "What China's 'Peace Plan' Reveals about Its Stance on Russia's War on Ukraine," United States Institute of Peace (website), March 2, 2023, https://www.usip.org /publications/2023/03/what-chinas-peace-plan-reveals-about-its-stance-russias-war-ukraine.

dependency on external systems and creating conditions with other partners to constrain their ability to sign onto damaging sanctions.[8]

Given this brief backdrop, how does South Korea fit in, and what role can—and should—it play? This research should explore the nuanced ways the US-ROK alliance can support broader competition activities with respect to China and Russia as both countries become further entrenched in the Russia-Ukraine War.

Research addressing these and other areas will contribute to our understanding of the nuances of Northeast Asia in the context of competition. Given the disturbing patterns of Chinese, North Korean, and Russian military activity and the propensity toward miscalculations in the region, this understanding is critical. This brief essay does not cover every contingency or opportunity the US-ROK alliance presents. Instead, it sets the stage for important research on the topic as the Joint Force continues to march into this decisive decade.

Eric Hartunian

Colonel Eric Hartunian, PhD, is the director of the Strategic Research and Analysis Department in the Strategic Studies Institute at the US Army War College.

8.   Bonny Lin, "The Ukraine Crisis: Implications for U.S. Policy in the Indo-Pacific," Center for Strategic and International Studies (website), May 19, 2022, https://www.csis.org/analysis/ukraine-crisis-implications-us-policy-indo-pacific-0.

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Book Reviews

The Armed Forces and American Social Change: An Unwritten Truce

by Troy Mosley

Reviewed by Dr. Don Snider, professor emeritus, United States Military Academy

Troy Mosley's book, *The Armed Forces and American Social Change,* has a narrow but deep focus and presents the author's personal views on African-American and other minorities' contributions to our armed forces since our Republic's founding. The specific focus is on the ebbs and flows, since the creation of the Department of Defense (DoD) in 1947, of DoD leaders' efforts at diversity and inclusion. In the author's words, "*Unwritten Truce . . .* pivots on the notion that our nation's military may be the best force we have to combat the overwhelming force of the systemic, institutionalized racism that we still face today" (3).
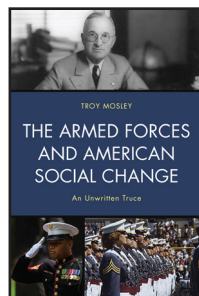
Originally the book was self-published in 2018 to celebrate the 70th anniversary of President Harry S. Truman's integration of US armed forces in 1948 by Executive Order 9981—the detailed retelling of which is one of the finest chapters in the book. Rowman & Littlefield published the reviewed version of the book in 2021. In his reintroduction to the reviewed version, US Army Lieutenant General (retired) Russel L. Honoré quotes Sun Tzu, "See the enemy, see yourself, see the terrain" (x). He then states, "*Unwritten Truce* provides an opportunity for the nation and the armed forces to do precisely that and have a frank discussion on removing the final barriers to inclusion" (x). My reading of Mosley's work affirms Honoré's assertion of that opportunity. This book will inform many readers for the much-needed "frank discussion" in this time and place of social change in our Republic.

As mentioned, the author includes an excellent analysis of Truman, whom he describes as the "grandfather" of the American civil rights movement because of his political maneuvering around the Dixiecrats to produce the executive order directing the integration of our armed forces (6). Another strength is found in the chapter detailing the experiences of Black Americans in World War I, particularly the 92nd and 93rd Divisions and the 369th Infantry Regiment. How many serving Army officers, beyond our historians, know of that Regiment's exploits or of the tragic Houston mutiny and riots of 1917 and the egregious

responses by the War Department? Mosely's searing assessments of the treatment of our Black World War I veterans should be read by any officer seeking to understand the implications of that legacy today.

The weakness of the book does not lie in its content, per se, but rather in the impression Mosley leaves with readers as to the way ahead that advances in diversity and inclusion are the most important challenge facing DoD leaders. In his conclusion, the author addresses "Remaining Challenges and Implications for the United States and its Armed Forces" (181ff). Here he summarizes what the Department of Defense has gotten right over the decades and writes, "[w]hile the DoD has fallen short of achieving its goal of representative populations amongst military leaders, its commitment to diversity had become bedrock policy" (196).

The author correctly identifies the strategic imperative of diversity in our armed forces. But readers will ask: how big of an advantage is "diversity and inclusion" compared to applied technology across multiple domains of warfare, civil-military relations across differing administrations, and the willingness of citizens to volunteer for service? What other policies in human resources should the Department of Defense pursue as aggressively as diversity?

Fortunately, Honoré, a veteran of many direct combat operations, provides the answer in his reintroduction: "Though resistance to social change did not go easily, today the military can boast that the tenants [sic] of diversity and inclusion are central building blocks for our nation's military, a dynamic, global, merit-based force unmatched worldwide" (x).

Honoré rightly understands that only a merit-based force has the potential to be militarily effective in modern warfare. Why? Because only a meritocratic culture that rewards achievement and talent can build indispensable, interpersonal trust among its diverse members. Such trust is created when those advanced within all units and commands are promoted on openly demonstrated merits of professional competence and moral character. Anything else destroys interpersonal trust being rightly understood as advancement on the basis of privilege of one sort or another.

With this added context that establishes the real limits for DoD policies advancing diversity and inclusion, this book is a very valuable read for all aspiring and current leaders in our armed forces and for their civilian counterparts.

The End of the World Is Just the Beginning: Mapping the Collapse of Globalization

by Peter Zeihan

Reviewed by Colonel John C. (Chris) Becking, PE, G3, US Army War College

Some predict globalization will fail. Peter Zeihan asserts the current world order peaked in the early twenty-first century and is in decline. With a comprehensive analysis of the economic, demographic, technologic, and geographic factors that contribute to the trajectory of the current Breton Woods–established world order, Zeihan argues globalization will not endure.
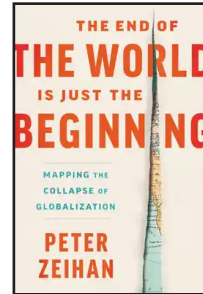
A self-professed geopolitical strategist, Zeihan will be familiar to many from his work, *The Accidental Superpower* (Twelve Books, 2014). Now spending his days providing geopolitical analysis to a broad spectrum of clients, he supplements his writing with YouTube videos to share his perspectives. Zeihan injects gallows and cynical humor into his books, producing readable works with a personable tone.

In *The End of the World*, Zeihan provides a thorough and sequential review of the transportation, finance, energy, industrial materials, manufacturing, and agriculture systems arrayed around the world to paint a picture of the mechanisms for his view of globalization's decline. He confirms and extends Jared Diamond's geographical and environmental thinking from *Guns, Germs, and Steel* (Norton, 1999). Although I considered myself knowledgeable about transportation before reading the book, Zeihan's examination of global transportation systems laid bare my ignorance. Zeihan's dissection of molybdenum's resource cycle exemplifies his depth of analysis and breadth of understanding of a single resource's impact on our civilization. (Spoiler alert: you will despair for your children's future.)

Zeihan predicts three main results of globalization's end. First, he describes how the world will descend into a new global system where trade and transportation are not guaranteed. Competition for dwindling resources will drive us from a world order where transportation of resources is almost an afterthought to a world where societies constrain themselves to resources immediately or, at best, regionally available because global transportation

is not secure. Second, many nonintegrated economies (those not containing an entire resource chain from source to processing to consumption) will struggle to survive as demographic shifts conflict with resource availability. These nonintegrated societies will become increasingly belligerent to secure the resources their expanding populations require. Third, only a few countries and regions will have success, which Zeihan defines as both political and economic stability, given their demographic and geographic realities. Zeihan is bullish on North America but notes the United States will survive only with critical support from Mexico, counter to the isolationist narrative. He has similar projections for only a few other nations, including Argentina, France, and New Zealand; Zeihan asserts China has passed its prime and will continue to wane through the twenty-first century.

One could take issue with a few major points in Zeihan's analysis. He develops great projections and displays well-considered thinking. Zeihan, however, bases his conclusions only on current knowledge and circumstances. Logically, we can see the proposed future state as if looking at distant terrain from a moving train. We have an idea of what lies ahead, but as the train moves on the tracks, things may appear very different. Our world moves through time without the benefit of tracks, so to speak, to guide its course. Zeihan squarely acknowledges this fact, which we must bear in mind with all prognostication, lest we become overly enamored with a proposed future state.

Zeihan presents excellent graphs, tables, and figures. His data support his claims and thoughts. (Note: if you are inclined to listen to an audiobook instead of reading a hard copy, you will benefit from Zeihan's own voice providing tone to his humor and will find all the graphs, tables, and figures are available on Zeihan's website.) He does, however, make a few assertions for which he provides no basis. For example, he describes the Japan Maritime Self-Defense (JMSD) Force—the Japanese navy—as the world's second largest. Although Japan's navy does operate outside the Pacific region, any objective measure (such as tonnage, personnel, or funding) would place it further down the list of world navies. Zeihan supports most conclusions with data, but there are a few misses.

All security, policy, and military leaders would benefit from considering Zeihan's thoughts, especially leaders who want a projection of the future world order and a framework in which to examine it.

Stabilizing Fragile States:
Why It Matters and What to Do about It

by Rufus C. Phillips III

Reviewed by Dr. Michael J. Dziedzic, adjunct faculty, Schar School of Policy and Government, George Mason University, and colonel, US Air Force (retired)

Former UN Senior Police Adviser Mark A. Kroeker cleverly captured the challenges he faced in peacekeeping operations in 2005, stating, "We need to stop reinventing the flat tire." Rufus Phillips aspires to address the same affliction prevalent in US attempts to stabilize fragile states, beginning with Vietnam in the 1950s, and articulates "why they [fragile states] represent a serious national security challenge, what to do about them, and how to do it more successfully" (2).
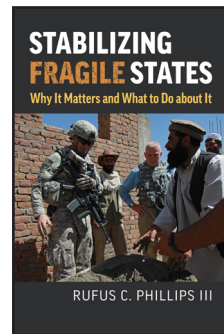
He draws on nearly 60 years of experience, spanning his time as a practitioner in Vietnam in 1963 in the USAID Rural Affairs Office, Saigon, where he worked with General Edward G. Landsdale, to Afghanistan, where he was an adviser to the Free and Fair Elections Foundation during the 2009 elections. He derives his conclusions from case study analysis of US efforts to stabilize Vietnam, El Salvador, Colombia, Afghanistan, and Iraq. The "flat tires" he repeatedly observed were failures to realize "achieving a reasonable degree of country stability is inherently a political endeavor," "we need a combined political and security strategy adapted to the prevailing conditions of the target . . . state," and "stability assistance depends above all on the personal skills of the workforce needed for its implementation" (248–49). His recommendations address two challenges stemming from these recurrent failings: the "need to develop a strategy and approach that works" and to "develop and assign a trained and skilled workforce" (21).

The leitmotif of his discussion is the need for an expeditionary cadre of stabilization specialists in diplomacy and development who would be used to implement a political and security strategy. He seizes on the 2019 Global Fragility Act (GFA) that allocates up to $200 million a year "to '[stabilize] [sic] conflicted areas and prevent violence and fragility globally'" as a vehicle for the implementation of his proposals (16). The Biden-Harris administration has identified seven countries as locations where these funds will be expended. Phillips correctly notes that "[t]he act appears to assume that existing State

and USAID personnel will be used" (224). To address the requirement to prepare these personnel for the unique rigors and challenges of stability operations, he proposes to "[s]et up a special expeditionary diplomatic and development stability assistance school to create such a workforce" with enrollment open to military and CIA personnel (249).

This desideratum has now been realized with the creation of the Joint Interagency Stabilization Course run by the Peacekeeping and Stability Operations Institute, the State Bureau for Conflict and Stabilization Operations, and the USAID Bureau for Conflict Prevention and Stabilization and is supported by the US Army War College. It falls short of Phillips's "expeditionary" vision because it has fewer contact hours, but it has the advantage of a three-day stabilization tabletop exercise. As for the strategy, "[t]he deployment of stability assistance personnel should occur within the framework of a general fragile country political and security stabilization strategy . . . (a requirement of the Global Fragility Act)" (221–22). Ideally, therefore, Washington would provide the ends and the means, and experts in stabilization deployed to the Embassy would develop the ways.

He concludes the book with a 20-page appendix providing a curriculum for the training program and how to organize the school. This constitutes Phillips's legacy to his target audience—those who manage the Joint Interagency Stabilization Course and practitioners responsible for crafting stabilization strategies, that is, those who have inherited the profound challenges of stabilization.

Although Phillips states one of his purposes is to explain "why [fragile states] represent a serious national security challenge," he devotes little attention to the topic other than to assert that there is a "propensity of these types of states to become havens for organizations such as the Islamic State (ISIS) and al-Qaeda" (2). He is also troubled that chapter 7 of the *National Defense Strategy* "is on peer-to-peer competition and no longer characterizes stabilization efforts as a priority" (18). His book was written, however, well before Russia's 2022 invasion of Ukraine.

Overall, Phillips has succeeded in his aim of creating a program to prepare practitioners to implement the Global Fragility Act's obligatory strategies so that future administrations can "stop reinventing the flat tire."

Victory at Sea:
Naval Power and the Transformation
of the Global World Order in World War II

by Paul Kennedy with paintings by Ian Marshall

Reviewed by Dr. John A. Nagl, associate professor, Warfighting Studies,
US Army War College

Paul Kennedy came to the attention of many national security students with his 1987 book, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (Lexington Books, 1987). It is difficult to imagine a bigger topic. The book's scope and ambition were breathtaking, even if the core idea was not terribly surprising: Kennedy argued that the economic strength of an alliance or coalition had a significant role in determining the strength of its military and hence the outcomes of military conflicts.
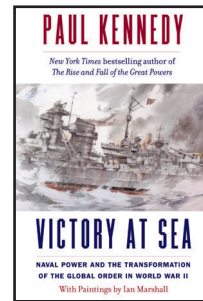
The Rise and Fall of the Great Powers landed at a time of American insecurity regarding her status in the world, before the Soviet Union's collapse and when Japan seemed about to supplant the United States as the world's greatest power. In fact, my copy's cover shows a weary Uncle Sam handing global leadership to a Japanese man holding a rising sun flag as an even more tattered John Bull staggers off into the shadows.

Victory at Sea again arrives at a time of American concern about the rise of an Asian great power, albeit a different one, but its lessons regarding China are somewhat more obscure.

It also has exemplary illustrations. In fact, while the ambition of the book is again notable, this time it is the pictures that are breathtaking. The 53 paintings by the late Ian Marshall, former president of the American Society of Marine Artists, are some of the most beautiful depictions of ships of war ever produced; they are worth the price of admission by themselves in this gorgeous volume.

Most naval histories of World War II, by far the largest naval war in world history, focus on one of the three main theaters: the Atlantic, the Pacific, or the Mediterranean. Kennedy ties together events in all three, all through the same lens

used in his earlier book, with eye-opening results. Kennedy thoughtfully explains the huge role interactions between the theaters had in the course of events.

There were six navies of note prior to the war, Kennedy tells us—the American, British, French, German, Italian, and Japanese. In a book that could have been subtitled "The Rise and Fall of the Great Navies," we learn why the Italian and French navies played such relatively small roles in World War II, how the German submarine campaign had a strategic and almost decisive role in the Battle of the Atlantic before technology and a dogged Royal Navy (and merchant marine force) prevailed, and how the Imperial Japanese Navy triumphed early in the war and then faded into irrelevance. Mahanian dreams of big gun battles at sea fell to Julian Corbett's theories of commerce raiding and the growing power of naval aviation—to the lasting dismay of the battleship admirals.

Mostly, though, we marvel at the way the latent industrial power of the United States exploded during Lend-Lease and then went supernova after Pearl Harbor, making the American Navy the nearly undisputed global sea power by the end of the war. The book includes a mind-boggling final chart, "Overall warship tonnages of the Powers, 1943–1960." Rosie the Riveter enabled victory at sea—a well-fed Rosie at that, Kennedy notes, even as global counterparts worked on starvation rations.

In a book that may be criticized for economic determinism, Kennedy does pay tribute to the courage of the (mostly) men who manned the ships and flew the planes produced by the American industrial machine—the Brits and Russians in American Studebaker trucks and the Yanks flying Grumman Hellcats. American industrial might did not determine the course of the war on its own, but what Winston Churchill called the world's boiler room, once lit, powered the way to victory.

Other critics have noted Kennedy's overreliance on Wikipedia in his footnotes, and this reviewer also found it jarring that a book of this stature, even one written under COVID-19 restrictions, takes a lazy path that would draw rebuke if chosen by a student. But Marshall's paintings and the scale of Kennedy's ambition and understanding make this a book that should be widely read not just here but perhaps even more diligently in the war colleges of our pacing threat. The People's Liberation Army would do well to take careful note of the long-term danger of engaging the US Navy, Air Force, Marines, and Army in battle in the wide Pacific. It will not end well for them.

The American Army in Germany, 1918–1923: Success against the Odds

by Dean A. Nowowiejski

Reviewed by Dr. James D. Scudieri, senior research historian,
Strategic Studies Institute, US Army War College

This monograph covers the US Army's largely forgotten first round of occupation in Germany after World War I. An introductory overview cites earlier military governance from the Mexican War of 1846–48 through the nineteenth century (3). The same chapter references the domestic debate between President Woodrow Wilson and the Senate and the subsequent administration's challenges under President Warren G. Harding.
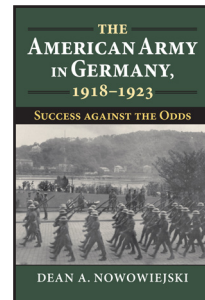
Chapters 2 through 8 feature Major General Henry T. Allen as the central figure, whom General John J. Pershing chose to lead the American Forces in Germany (AFG). Author Dean A. Nowowiejski suggests the Army had no better general to work with allies until General Dwight D. Eisenhower (1–2). A veteran of the frontier and the Philippines, military governor of Leyte, and organizer of the Philippine Constabulary, Allen commanded the 90th Division in France.

Chapter 2 explains the initial occupation by US Third Army under Major General Joseph T. Dickman. It consisted of the III and the IV Corps, with three divisions each, and the VII Corps, in reserve with two divisions. Third Army conducted the post-Armistice advance into Luxembourg and Germany and reached the Rhine on December 9, 1918. The text's frank categorization of this period as an uneven, if not inept, "pickup game" requires critical context: Third Army advanced into Germany during armistice, and hostilities might have resumed (32–33).

Chapter 3 discusses the Inter-Allied Rhineland High Commission (IARHC) amidst coalition, interagency, and nongovernmental organizational issues. Chapter 4 begins to focus on the armed forces in Germany itself and how the establishment, largely composed of new recruits, became a premier American force. The text has many superlatives. The success of American forces in Germany rested upon Allen's leadership, quality officers, and an enlisted force that rose to the occasion. Many officers had a progressive philosophy. Most, if not all, were steeped in riding culture, and their further education involved foreign language study. The armed forces in Germany developed international respect

and set a standard with its exercise of "benign impact" in occupation (88). Peaking at some 15,000 troops in 1920–21, its military presence lent authority to Allen's conduct on the international stage. Chapter 5 flows into a detailed analysis of individual and collective training and has separate sections on the training cycles for 1921 and 1922.

Chapter 6 examines issues of occupation, beginning with the work of Civil Affairs officers in the transition to civilian authorities. The wide complexity of tasks includes confiscation of German war materiel, disposition of surplus stocks, fortification dismantling, movement control, police and public safety, public health and sanitation, and public works and utilities (146). Chapter 7 examines the junior soldiers who wielded substantial financial and economic clout. Chapter 8 clearly views the AFG withdrawal as premature and a missed opportunity.

Appendix 1 recounts individual experiences. The officers' mini-biographies demonstrate the quality of Allen's staff and provide a "who's who" guide to World War II. Appendix 2 showcases a "Chronology of Horse Events." Appendix 3 is an essay on the sources.

This monograph fills a void with a major case study in US Army stability operations. Through widespread research in primary sources, this paean to Allen articulates how the general set the standard, remained engaged in AFG training and welfare, and developed personal relationships with coalition civilians and generals.

The Union Assaults at Vicksburg: Grant Attacks Pemberton, May 17–22, 1863
by Timothy B. Smith

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

Major General Ulysses S. Grant's capture of Vicksburg, Mississippi, on July 4, 1863, ranks as the most brilliant campaign of the Civil War. Combining deception and rapid maneuver, Grant overcame seemingly insurmountable geographic obstacles, bewildered his opponents, battered the forces defending the "Gibraltar of the Confederacy," and caused those Confederates to tumble pell-mell behind the protection
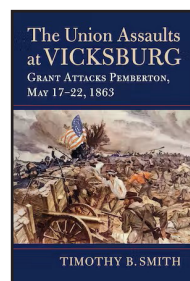
of the city's fortifications. When Vicksburg finally capitulated after a six-week siege, Grant succeeded in cutting the Confederacy in half along the Mississippi River. The city's 30,000 famished defenders became the second of three Rebel armies that Grant took captive. Vicksburg also yielded its conquerors a mountain of enemy materiel—including 172 cannon and 60,000 small arms.

The only thing that marred Grant's triumph was the costly frontal assaults he directed against Vicksburg's fearsome fortifications on May 19 and 22, 1863. These futile attacks cost the Army of the Tennessee 4,141 casualties, convincing Grant the only way to take his objective was by siege. Historians who disparage Grant's generalship reference these failures to the exclusion of everything else he accomplished but do not examine the attacks in detail. The voluminous literature on the Civil War mostly ignores the largest battles of the Vicksburg Campaign, despite the important stakes that hinged on their outcome.

Timothy B. Smith, the author of *The Union Assaults at Vicksburg*, is eminently qualified to cover the crucial days that compelled Grant to adopt a more gradual approach to securing his prize. It is hard to imagine any other historian better qualified to tackle this task. A former ranger at Shiloh National Military Park who currently teaches history at the University of Tennessee at Martin, Smith has published at least 14 other books on the Civil War in the Western Theater—including five on different aspects of the Vicksburg Campaign. His mastery of the sources is evident on every page of the book. In the best traditions of Civil War operational history, Smith covers his subject from the top down and the bottom up, weaving a story that abounds with the voices of officers and men, including the humblest privates. While Smith's narrative teems with arresting details and revealing anecdotes, he never lets readers lose sight of the big picture.

Smith does not denigrate Grant, but he admits that the assaults of April 18 and 23 exposed the Union commander's chief flaw as a general—overconfidence. Nevertheless, Grant had good reason to rush the capture of Vicksburg. Beginning on May 12, Grant whipped elements of the Vicksburg garrison in four pitched battles over a five-day span, which ended with the enemy's rout at Big Black River on May 17. Assuming Lieutenant General C. Pemberton's surviving Rebels too battered, stunned, and demoralized to mount a determined defense, Grant directed the Army of the Tennessee to storm Vicksburg at 2 p.m. on May 19. Grant's success up to that point had hinged on celerity, and he feared a resort to siege tactics would give other Rebel forces time to concentrate and relieve their trapped comrades.

The next five days would demonstrate the disparity between what generals desire and what their troops can deliver. Smith calls the three veteran corps

Grant assembled outside Vicksburg "the best army the United States fielded in the Civil War" (180). The odds facing those Midwesterners and border-state Federals, however, turned out to be more than even the bravest and most disciplined soldiers could overcome. To begin with, Captain Samuel H. Lockett, the Confederate engineer who fortified Vicksburg, had done his work with consummate skill. Once inside that network of forts, redoubts, redans, and other earthworks, Pemberton's garrison rebounded with unexpected speed from its previous reverses, and the Rebels would fight tenaciously when the Federals tested their defenses. In addition, ravines, ridges, timber, and thick undergrowth crisscrossed the ground leading to Vicksburg, which complicated the coordination of a grand assault by an entire army.

Terrain challenges prevented all but one of Grant's divisions from getting into position to launch an attack on May 19. That effort netted the Army of the Tennessee 942 casualties in all—613 in the assaulting division alone. Three of Grant's corps threw their weight against Vicksburg on May 23, but victory eluded them. Most Union troops behaved with incredible bravery, driving to the very base of the mammoth Confederate earthworks where they planted their bullet-riddled colors and blazed away at any enemies who poked their heads above the protective parapets. Pinned down by Rebel fire, the surviving Federals had to wait for the cover of darkness before they could retreat to safety.

The hubris of one of Grant's senior subordinates caused the slaughter to go on longer than necessary that bloody day. Major General John A. McClernand, the former politician commanding the Union XIII Army Corps, exaggerated the size of two small penetrations his divisions managed to effect near the Confederate center. Claiming possession of two enemy forts, McClernand demanded that Major General William Tecumseh Sherman's XV Corps and Major General James B. McPherson's XVII Corps renew their efforts to prevent the concentration of Rebel reserves against him. McClernand had angled earlier to wrest command of the Army of the Tennessee from Grant's hands, but no army commander could ignore a plea for help from a subordinate who claimed to be on the verge of victory. Consequently, more Federals surged forward and died for nothing while the Rebels managed to erase McClernand's fragile salients. Grant took his revenge by making McClernand the scapegoat for the failed assaults, which resulted in a personal victory for the Union commander— McClernand's transfer to Illinois.

The Union Assaults at Vicksburg presents a thoughtful study on the challenges of command and the temptation to count an enemy vanquished before he is ready to admit defeat.

The Siege of Vicksburg: Climax of the Campaign to Open the Mississippi River, May 23–July 4, 1863

by Timothy B. Smith

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

Major General Ulysses S. Grant's capture of Vicksburg, Mississippi, on July 4, 1863, capped the most brilliant campaign in the US Civil War. Utilizing maneuver, surprise, and a gift for joint operations, Grant trapped a hostile army and compelled its surrender after six weeks of siege. Historians have waxed eloquent about the operations that brought Grant's Army of the Tennessee to the outskirts of Vicksburg in April and May 1863, but they gloss over the final phase of the campaign that set the seal on Grant's war-shortening victory.
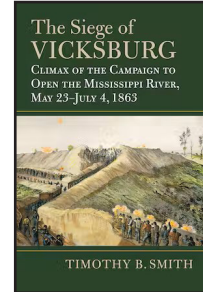
Timothy B. Smith claims *The Siege of Vicksburg* is the first detailed academic study of the events that culminated in Grant's masterpiece. With this volume on the siege itself, he cements his dominance over this significant slice of Civil War history.

Smith conducted his research among nearly 80 archives across the United States, not to mention many printed primary sources. Smith tells this story with the authority that comes from long years of study. In addition, he and his publisher, the University Press of Kansas, deserve credit for providing 19 well-executed maps that permit readers to observe the progress of the siege and its ancillary operations. The book also features photographs of the leading commanders on both sides and views of a few siege scenes. The knowledge Smith acquired from that prodigious effort enables him to place readers among the sweat-drenched soldiers in the opposing trench lines, the stifling hot confines of the Union gunboats and mortar boats that rained destruction on Vicksburg from the Mississippi River, and the caves Confederate civilians hewed out of the city's surrounding bluffs once their homes became targets for Yankee guns.

While Smith sheds abundant light on the experience of the common soldier, *The Siege of Vicksburg* unfolds primarily as a command history. Grant functions as Smith's chief protagonist, and with good reason. After Grant decided on a siege as the surest way to pry the Confederate Army of Vicksburg out of its stronghold, he did not lapse into a sedentary role. He ensured his prey did not escape by completing an airtight line of circumvallation around Vicksburg's defenses. He stripped Union commands in the upper Mississippi

Valley of every available soldier to hasten this work and to cover his rear with sufficient troops to detect and check any Rebel army that might assemble in Mississippi's interior to save the city. By late June 1863, roughly 33,000 Federals composed this blocking force under Major General William Tecumseh Sherman, Grant's favorite lieutenant. At the same time, Grant did everything he could to intensify the misery of Vicksburg's defenders. He kept the soldiers in his siege lines digging constantly to tighten the noose around his objective's neck. Regardless of Confederate countermeasures, Union parallels crept closer to the enemy's works, which would ultimately provide the besiegers with jump-off points for successful onslaughts. Other Federal troops strove to dig underground mines below Confederate strongpoints. If successful, those efforts would create breaches that would facilitate assaults. Finally, Grant coordinated with his willing naval partner, Rear Admiral David Dixon Porter, to augment the bombardment battering Vicksburg.

On the Confederate side, the prevailing mood smacked of fatalism. Once Lieutenant General John C. Pemberton placed his 30,000 troops behind Vicksburg's defenses, he thought his best option was to hold the city until another Rebel army could be organized to raise the siege. Many of Pemberton's enlisted subordinates believed their Pennsylvania-born commander to be a Yankee agent who had deliberately marched them into a trap. Despite such distrust, the Vicksburg garrison consisted of good soldiers who endured constant shelling and sniping, dwindling rations, and ceaseless duty under a broiling sun to deny their post to the Federals.

Confederate President Jefferson Davis entrusted the task of saving Vicksburg to General Joseph E. Johnston and his patchwork Army of Relief. Johnston lacked the boldness and imagination necessary to accomplish his mission. He hoped Pemberton would stage a breakout and claw his way unassisted through Grant's siege lines. When Pemberton failed to save himself, Johnston flatly told him less than a week into the siege, "I am too weak to save Vicksburg" (97). Johnston never wavered in his defeatism, even as reinforcements reached him from different quarters of the Confederacy. Concern for his career prospects, however, impelled Johnston to make every appearance of preparing to succor Vicksburg. As Smith concludes: "Johnston had done as little as possible but enough to make a show of effort, planning all the while never to get close enough to risk his force in a fight or, by extension, help Vicksburg's garrison in any meaningful way" (505).

Convinced Vicksburg was the first real siege in US military history since Yorktown and the "quintessential siege" of the Civil War, Smith introduces his text by exploring that form of warfare (xviii–xix). He describes how future Civil War commanders learned about siege craft at West Point and the time-honored steps involved in reducing a fortress. He also discusses the use of such devices

as gabions, fascines, and sap rollers. Having explained how sieges were supposed to be conducted, Smith proceeds to relate how a shortage of trained engineers and resources, along with extraordinarily difficult terrain, forced Grant and his subordinates to deviate from the rules and trust in adaptation and improvisation.

By taking Vicksburg, Grant did more than any other Union general to decide the Confederacy's fate. He cut the Rebel republic in half, draining the enemy's power and morale in the Mississippi Valley. No longer could Confederate quartermasters and commissaries draw on the supplies previously ferried across the Mississippi from the Red River Valley. Finally, Grant's victory set the stage for the great campaigns of 1864 and 1865 that would cut the Confederacy into quarters and grind its hopes for independence into the dust.

REGIONAL STUDIES

Rebuilding Arab Defense: US Security Cooperation in the Middle East

by Bilal Y. Saab

Reviewed by Dr. Robert Mogielnicki, senior resident scholar at Arab Gulf States Institute in Washington, adjunct assistant professor at Georgetown University, and professional lecturer at George Washington University

Bilal Y. Saab's *Rebuilding Arab Defense* is timely and informative. Saab assesses US-Arab defense and security cooperation to date, determines how to improve an "unimpressive record," and explains why the issue matters amid competing foreign policy priorities (1). To accomplish these aims, Saab delineates between the "old, transactional model" of US-Arab defense and security cooperation that held sway from the 1970s until the mid-2000s and the emergence of a new model in recent years (23).

After an instructive description of defense institution building, Saab covers the primary country case studies Saudi Arabia, Jordan, Lebanon, and the United Arab Emirates (UAE), whose varying fiscal capacities possess important implications: wealthier Arab governments *pay for* many security partnership costs, whereas other governments mostly *receive funding* from the United States to facilitate cooperation in this domain.

Saab pulls no punches in his discussion of Saudi Arabia, describing the oil-rich kingdom as possessing "one of the most underwhelming armies in the world" (51). He is more optimistic about prospects for the defense transformation plan advanced by Saudi Arabian Crown Prince Mohammed bin Salman (MBS). The focus on Saudi defense transformation offers a refreshing take on MBS's reform agenda, which other studies and media publications tend to view through economic and social prisms.

The chapters focusing on Jordan and Lebanon present a mixed bag of cooperation. References to "pockets of excellence" within the Jordanian Armed Forces bring to mind Steffen Hertog's "islands of efficiency" concept used to explain surprising examples of effectiveness in Gulf Arab economies (87). While Saab depicts the Lebanese Armed Forces as setting a low bar, he also writes that "[w]ithin a decade, the United States essentially was able to transform the [Lebanese Armed Forces] from a decrepit force mocked by all its regional peers to a professional military that has earned the respect of [Central Command's] leadership" (28). Saab documents plenty of insufficiencies associated with the Jordanian Armed Forces and Lebanese Armed Forces as well as various dysfunctional aspects of US-focused cooperation.

Saab heaps praise upon the UAE for its competent and effective armed forces. Early in the work, he challenges himself to reconcile the UAE's achievement of military effectiveness with its substantial gaps in defense institutional capacity. His repeated explanation that "no one has sought opportunities to grow and learn from the Americans more aggressively than the Emiratis" does not settle this debate (147).

Saab utilizes cooperation-related experiences with other Arab countries for occasional insights. Later, short descriptions of US defense and security cooperation with Colombia, Georgia, and the Philippines contribute additional comparative dimensions to the work. The author draws upon a diverse array of sources, including anonymous interviews. The tone of the work is that of a seasoned practitioner interested in quickly identifying an issue and eager to find a better path forward.

The final chapters' task involves diagnosing sociocultural challenges and establishing a dynamic pattern of engagement able to achieve US regional objectives and build Arab military capability for a rapidly changing world. Saab stresses that improving defense and security cooperation must involve both US decisionmakers—especially those in Congress—and Arab actors. It becomes increasingly clear throughout the work that the objectives the United States and Arab partners pursue through defense and security

cooperation are not always in alignment. Refreshingly, Saab acknowledges the United States may not always be the best partner for Arab states in all areas of defense and security cooperation.

Readers encounter a list of unsatisfactory US military assistance programs in the broader Middle East at the book's outset. Structured, in-depth comparisons to successful defense and security cooperation models across the globe would have provided a stronger analytical launchpad. Figures and charts could have helped quantify and visualize unwise spending on assistance and cost-effective avenues forward.

Saab correctly notes that fears of Chinese and Russian influence in Middle Eastern defense and security realms can be exaggerated, especially when compared against the longer history of US involvement in the region. Given the current course of US-Arab defense and security cooperation, however, the United States may encounter fewer and less desirable posture options there over the coming years. Additional research and clear thinking on this topic can help the United States avoid such a predicament.

STRATEGY

The Strategy of Denial:
American Defense in an Age of Great Power Conflict

by Elbridge A. Colby

Reviewed by Dr. John A. Nagl, associate professor of warfighting studies, US Army War College, with Colonel Manoj Thapa, Nepalese Army, student, US Army War College (Class of 2022)

Pentagon strategist Elbridge A. Colby has an intense, myopic focus on China in *The Strategy of Denial*. Early in the book he argues, "The top priority of the US defense establishment should be ensuring that China cannot subordinate a US ally or quasi-ally in Asia, with the first priority being developing and maintaining the ability to conduct a denial defense of Taiwan" (xvi). His insistence on deterring China is so strong he suggests America
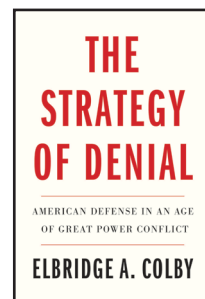
"also maintain a missile defense shield against North Korea and Iran *if this is not too costly*" (emphasis added). Although he seems to consider deterrence of China the only strategic goal truly worth pursuing, he writes, ". . . if the United States does want some additional insurance . . . it can make some provision for . . . defeating a Russian *fait accompli* attempt against an eastern NATO ally" (xvi). Colby then casually suggests discarding decades of extremely successful US counterproliferation efforts because America may want to encourage "selective friendly nuclear proliferation," which he considers "the least bad option, though this would not be a panacea and would be dangerous" (xvii).

It is beyond ironic—and is in fact extremely dangerous—that Colby would so nonchalantly walk away from America's commitment to our European allies, given Colby's recommended strategy of denying China regional hegemony depends upon a system of alliances in Asia, some formal, others less so. Colby correctly notes, "The main purpose of the American defense perimeter is thus to provide enough reassurance to enough important states that might otherwise bandwagon with China that they can prudently work to balance it alongside the United States" (239). Somehow, he fails to realize current and prospective American allies in Asia, when making their own strategic calculations, will notice America has made optional its solemn obligation to defend its NATO allies. The effects of the botched American withdrawal from Afghanistan are not yet clear, but an America that reneges on its treaty obligations to NATO partners would certainly do more than raise the eyebrows of Colby's suggested deterrence partners against China in Asia.

Colby's recommendations regarding the deterrence of China are uncontroversial—conventional wisdom, even. He correctly prioritizes assistance to Taiwan, to make it harder for China to seize the island. In his analysis, "[i]f the United States can defend Taiwan, it can almost certainly defend the Philippines," which he identifies as China's second most likely target (240). Where Colby goes astray is in suggesting the defense of Taiwan and the Philippines is the *sine qua non* of American strategy.

This book, with its near-exclusive focus on China, damages the credibility of our current and future security guarantees and makes proliferation and war more likely—exactly what we do not need the former author of the *National Defense Strategy* to do, even if he no longer exercises responsibility for the security of the United States and our allies.

Zero-Sum Victory: What We're Getting Wrong about War

by Christopher D. Kolenda

Reviewed by Dr. José de Arimatéia da Cruz, visiting professor,
Center for Strategic Leadership, Homeland Defense, and Security Issues,
US Army War College

Christopher D. Kolenda is no stranger to understanding the shortcomings and outcomes of conflict. A retired US Army colonel, he was the first American to fight the Taliban as a commander in combat and to engage them in peace talks. Kolenda's *Zero-Sum Victory* is an eye-opener for current and future military leaders. He contends that "the belief in the military's centrality to waging war until a decisive zero-sum victory is achieved has limited the presidents' policy and strategy options, damaged America's reputation and strategic position, given the generals and admirals an inappropriately large voice in national security affairs, and heightened the risk of quagmires" (4). Kolenda's case studies of Iraq and Afghanistan highlight the US Army's fixation on winning at all costs, regardless of the lack of a clearly defined victory or exit strategy. *Zero-Sum Victory* "explores the systemic problems in US policy and strategy that emerge from flawed presumptions about war termination" (8).
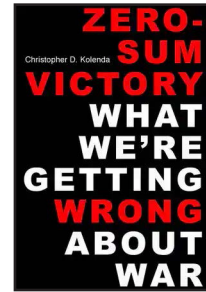
According to Kolenda, "the United States' lack of an organized way of thinking about war termination and its fixation on decisive, zero-sum victory have induced three major, systematic issues" for the Army, thus leading to a potential "quagmire" (15). Furthermore, the Army's inability to "[differentiate] between successful war termination outcomes and their role in policy and strategy" presents some concerns (36). For example, "the presumption that success requires decisive victory is restricting policy options, placing undue emphasis on a military force and inducing militarycentric [sic] strategies that have low probabilities of success" (36). Another issue is that "the US government was slow to modify a losing or ineffective strategy due to the cognitive bias, political and bureaucratic frictions, and relationship problems with the host nation" (10). Finally, according to Kolenda, as the war dragged on, public support waned, and the administration gave up on decisive victory, the United States forfeited critical leverage in announcing a withdrawal and a desire to see negotiations or transition (36–37).

The author notes the Army currently faces a "chronic problem" due to three elements: the deviation of actual results from expected results,

the deviation's unknown cause, and the need to correct the deviation (245). Kolenda's book provides a series of implications for US foreign policy in addition to observations and recommendations that future US Army War College students should consider in their next mission. The implications are as follows:

> End the zero-sum decisive victory fixation. The United States created and persisted too long in following strategies that sought decisive victory in Afghanistan, Iraq, and Vietnam . . . . Develop an interagency policy and strategy framework for waging war so that US officials can communicate clearly and reduce confusion. . . . Right-size the military's role in the policy and strategy process, so the president receives integrated rather than military-centric options. . . . Reduce cognitive obstacles that impair decision-making. . . . Address America's Bureaucratic Way of War by decentralizing to an in-theater, interagency command so that someone is accountable for results. Congress can hold meaningful hearings, and senior officials can stop misleading Americans with their claims of in-silo progress . . . (255–62).

Finally, the United States must reduce patron-client problems so partners do not hold them hostage, and they must develop expertise in wartime negotiations to stop making bad deals and avoid manipulation from corrupt partners.

Kolenda's *Zero-Sum Victory* is an essential contribution to the existing literature on the war. It highlights the shortcoming of overemphasizing a winner-takes-all approach. When the Army employs such an approach, there is less room for compromise and cooperation, which could advance and improve outcomes for all parties involved. The United States should rethink its continuing zero-sum approach to conflicts in the twenty-first century, where enemies and near-peer competitors are constantly in flux, adapting and adopting new tactics, techniques, and procedures. All future military leaders should read *Zero-Sum Victory*—especially US Army War College students—in preparation for mission assignments.

New Principles of War:
Enduring Truths with Timeless Examples

by Marvin Pokrant

Reviewed by Dr. Frank G. Hoffman, US Marine Corps (retired),
Institute for National Strategic Studies, National Defense University

Marvin Pokrant, a long-time analyst of naval affairs, has produced a useful assessment of the utility of principles in the study and conduct of war. This book offers many provocative comments and proposed revisions to our longstanding canon.

Traditionalists will take issue with two points. The author contends unity of command should be adapted into "unity of effort" (50). Based upon the complex character of protracted counterinsurgency and armed stabilization operations over the last two decades, many veterans and interagency participants from Iraq and Afghanistan will agree. Existing Joint Doctrine, however, defines the purpose of unity of command as the need to "ensure unity of effort under one responsible commander for every objective" (Joint Publication 3-0 [2011], A-2). The author does not examine or leverage discussions about the value of collaborative leadership (per Anthony King's *Command: The Twenty-First-Century General* [Cambridge University Press, 2019]) or the need to apply mission command and initiative in an era where command-and-control systems will be the subject of intense attack and corruption.

The second issue is Pokrant's proposal to displace mass with a principle of relative advantage. This will be controversial given the growing appreciation for the role of attrition in warfare—especially in large-scale military operations—and an argument made by historians, such as T. X. Hammes, that mass is returning to the battlefield due to the use of numerous swarming drones and cheap attack systems. More useful in Pokrant's definition is the stress on seeking a relational edge consistent with competitive strategies and creative asymmetric approaches. While most professionals do not embrace the mindless bludgeoning of opponents, the term *mass* does not connote the creative aspect the author rightfully emphasizes.

To Pokrant, mass measures the wrong factors and is out of context. His principle seeks advantage in effective combat power engaged over that of the adversary at a critical point and time that gives it context. In his terms, relative advantage "consists of concentrating the bulk of one's own effective combat power
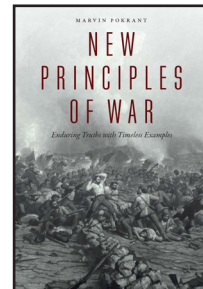
against a portion of the enemy's power, or attacking in an unexpected location . . . or in a manner that is unfavorable for the enemy" (87).

The last three chapters of the book lay out a triptych of new principles: "Know the Enemy," "Know Thyself," and "Environment." In the latter, Pokrant incorporates the physical battlefield and terrain. The late Colin S. Gray offered similar insights in his effort to dissect the concept of the revolution in military affairs in the mid-2000s (Strategic Studies Institute, 2006). He devoted several pages in his critique to the need to appreciate context deeply. In his emphasis on the "sovereignty of context," Gray stressed the political, socio-cultural, technological, and economic context in developing a strategy. Pokrant's recommendation is not artful or concise, but his intent is spot-on and completely consistent with Gray's.

All in all, Pokrant offers a comprehensive assessment of something too many consider uncritically. A wholesale revision of the fundamentals would be unnecessary and ill-advised. War offers more continuities than changes. Yet, we should expect to see alterations in the way the principles are articulated and applied given the changes of context generated by the Information Age and the putative Fourth Industrial Revolution. The principles of war and warfare are not immutable and should be subject to periodic adaptation to reflect Clausewitz's notion that war is more than a chameleon (*On War*, bk. 1, chap. 1, sect. 28).

These principles are often offered for rote indoctrination, but that was never their proper purpose. As noted in my 2012 *Armed Forces Journal* article, the principles were not developed to simplify things "for those with no tolerance for critical inquiry, no taste for contemplation or no patience with the deep study of history." Instead, they are starting points for inquiry and adaptation in application. For those about to deal with the messy complications of human conflict, a set of fixed and rigidly applied principles will never suffice. They help only to frame our broad study of the many forms warfare can take, in many different contexts, in order to prepare leaders in the transition of theory to actual practice.

New Principles of War has useful history and insights for serious students of war, young and old. This book appears designed to serve professional military schools and is best suited for intermediate-level professional courses and senior noncommissioned officer schools. For readers seeking a thoughtful reflection on war—and the application of fundamental principles to past battles—Pokrant's nicely composed book offers value.

Mastering the Art of Command:
Admiral Chester W. Nimitz and Victory in the Pacific

by Trent Hone

Reviewed by Colonel Jonathan Klug, US Army, assistant professor,
Department of Military Strategy, Planning, and Operations, US Army War College

Trent Hone's *Mastering the Art of Command* is a novel and superb study of Fleet Admiral Chester W. Nimitz as a strategic leader and theater commander throughout the Pacific War (1941–45). Hone's use of complex adaptive systems and contemporary leadership theory allows him to investigate Nimitz's leadership in ways other authors have not. His impeccable research provides rich strategic, operational, tactical, technical, and logistical context to explore how Nimitz helped win the war against Imperial Japan. The vision for this book is ambitious and unique, and Hone delivers an artfully balanced discussion of Nimitz as a leader and the learning capabilities of his command as a complex adaptive system.
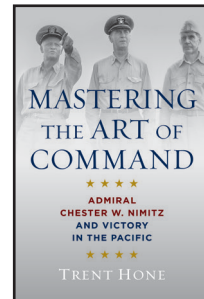
The structure of *Mastering the Art of Command* reflects its purpose well, providing a discussion of the ideas the author will use to explore how Nimitz's leadership helped win the war. In the introduction, Hone details complex adaptive systems, including emergence, sensemaking, and rapid learning. He then explains how Nimitz would use these ideas (though the terminology or notion of complex adaptive systems, per se, had not yet been conceptualized) to foster evolutionary change in his organization and to practice the art of strategy. Finally, through 10 subsequent chapters of history, Hone demonstrates Nimitz's successful use of these ideas. The book starts with Nimitz assuming command in Hawaii on December 31, 1941, and ends with Nimitz becoming a signatory of the Japanese surrender document on the deck of the USS *Missouri* on September 2, 1945.

Within the 10 chronological chapters, Hone relies on five key themes: collaborative sensemaking, decentralized execution, organizational unfolding, continual reorientation, and relentless pursuit of options. While focused on how Nimitz practiced collaborative sensemaking inside his command, Hone also examines the context of strategy making of the Allies' Combined Chiefs of Staff, the Anglo-American

Joint Chiefs of Staff, meetings between Nimitz and Fleet Admiral Ernest J. King, and various conferences with General Douglas MacArthur and Washington officials. Nimitz's approach to facilitating and demanding decentralized execution was apparent. Hone introduces a new concept of "organizational unfolding," which addresses how successful organizations continually change their structure to harmonize with their surroundings, thus naturally "unfolding" from their surroundings (344–46). Continual reorientation is related to organizational unfolding in that Nimitz and his command had to maintain constant awareness of changes in the operational environment and quickly realign their mental models to address new situations. Finally, the four previous themes facilitated Nimitz's relentless pursuit of options, which Hone describes as the attempt "to create advantage and accelerate the progress of the war" (349) that created "a collection of options" that allowed him to practice strategic artistry (353).

Attesting to Hone's impeccable scholarship, a wide array of primary documents serves as the foundation of his work, which includes extensive endnotes, a bibliography citing many superb sources, and a detailed index. Furthermore, Hone's acknowledgments note the assistance of several luminaries of naval and military history, especially of the Asia-Pacific War. Excellent maps help readers understand the critical strategic and operational points of Hone's discussion. Similarly, the figures assist with understanding key topics, such as the evolution of Nimitz's headquarters or the employment of Marine and Army divisions. Finally, the charts support the discussion of Allied strategy and operational planning.

Blending history with other contemporary academic fields—such as complex adaptive systems and executive leadership—provides new insights. As Hone uses the ideas of different academic fields, he deftly avoids getting bogged down by their jargon and ideas, instead using their concepts to illuminate more significant concerns. Readers will appreciate his efforts as the topic of complex adaptive systems, for example, has its own vocabulary that can prove challenging without prior experience. Hone's methodology in *Learning War* (Naval Institute Press, 2018) and *Mastering the Art of Command* make both books unique and outstanding contributions to the body of knowledge of leadership and naval history. This book is a must-read for military leaders and those interested in naval or World War II history. In addition, it is an excellent historical case study reading for professional military education, especially for command at the theater level or for senior leadership in general.

Watchman at the Gates:
A Soldier's Journey from Berlin to Bosnia

by George Joulwan with David Chanoff

Reviewed by Dr. John A. Bonin, consultant, US Army War College

Concerned with soldiering at multiple echelons, *Watchman at the Gates* is a rare, nonpartisan autobiography of a twentieth-century general, retired four-star George A. Joulwan. He retraces his 40 years in the Army chronologically, from his entry at the United States Military Academy at West Point in 1957 from a Lebanese family in Pennsylvania to multiple tours in Vietnam in the 1960s, rebuilding the Army in the 1970s as a field-grade officer, and his significant roles in South America and Europe in the 1980s and 1990s as a general officer and Supreme Allied Commander, Europe (SACEUR).
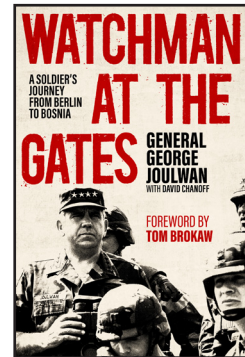
Each chapter presents an aspect of Joulwan's leadership growth. Early chapters cover his formative years at West Point, initial troop duty in Germany and Vietnam, and graduate school in Chicago. The middle chapters describe his strategically broadening service, from his White House duties to his command of V Corps in Germany. In the final chapters, Joulwan lets readers enter the mind of a combatant commander in two different theaters during competition and conflict.

As Joulwan explains his military experiences, he made the most of learning opportunities from several significant superiors. As a cadet, Joulwan learned values from and played football for the legendary Red Blaik. In Germany, as a lieutenant, he learned Army fundamentals from William E. DePuy. In 1966, as a captain in Vietnam, he was assigned to DePuy's 1st Infantry Division. He took command of B Company, 1st Battalion, 26th Infantry under Paul F. Gorman and was the operations officer for Alexander M. Haig Jr. during the Battle of Ap Gu.

Joulwan's career significantly differed from those of current US Army general officers. He experienced several significant opportunities as a field-grade officer that benefited him later as a general officer. Not only did he obtain a master's degree in political science from the University of Loyola while teaching ROTC, but he also served as a tactical officer at West Point. He left West Point early to serve from 1972–74 as an assistant and later deputy

to Haig as White House chief of staff in the Nixon and Ford administrations. When Haig left to be SACEUR, Joulwan moved to Europe as his special assistant. Additionally, after his student year in the Class of 1978, he remained and spent a "watershed" year as an instructor at the US Army War College (109). After brigade command and a year as division chief of staff, he spent three years (1982–85) as the executive officer to John W. "Jack" Vessey, chairman of the Joint Chiefs of Staff. In that role, he saw problems the US military had with joint operations and "witnessed an extraordinary transformation not just of the army . . . but also of the entire US military" (131).

As a new brigadier general, Joulwan served on the Army Staff as a director for combat support systems. In June 1986, he arrived in Europe as the operations officer for US Army Europe, where he had "the widest possible overview of our European theater war planning," especially the challenges of logistics, reinforcements, and "organizing the rear of the theater" (135). Next, he took command of the 3rd Armored Division guarding the Fulda Gap and learned to read the battlefield during advanced simulations and the last great Return of Forces to Europe exercise in 1988. He conducted this last exercise in front of Soviet observers, who were incredulous of the Spearhead Division's rapid and decisive maneuvers. Next, Joulwan took command of the V Corps, during which time the Berlin Wall fell and the Cold War ended.

As SACEUR and commander of the European Command, Joulwan helped convince the then President Bill Clinton to approve a NATO and American intervention in Bosnia while ending the bloodshed in far-off Rwanda. While implementing the Balkan Dayton Peace Accords, Joulwan sought cooperation with Russia and "obtained the deployment of a Russian brigade under the operational control of [Joulwan] as SACEUR" (220). Joulwan concludes the United States "made a fundamental mistake" by not cultivating better relations with Russia, contributing to Europe's current situation (235).

Watchman at the Gates is not a typical memoir by a recent senior retired officer attempting to explain his actions favorably. Joulwan provides candid insights valuable for serious students of successful military leadership at multiple levels. His career is a case study of how broad assignments in diverse contexts help senior leaders better to deal with complex situations.

To Boldly Go:
Leadership, Strategy, and Conflict
in the 21st Century and Beyond

edited by Jonathan Klug and Steven Leonard

Reviewed by Dr. Ronald J. Granieri, professor of history, Department of
National Security and Strategy, US Army War College

Readers are encouraged to consider the human factor in strategy, even when the strategist is not technically human, in *To Boldly Go*, an anthology of essays drawn from a spectrum of professional military education and civilian academics. Characters in speculative fiction can offer lessons we might otherwise miss in more prosaic sources. In the forward to the anthology, Australian Major General Mick Ryan, a leading thinker on the future of war, emphasizes the value of science fiction in encouraging creative approaches to strategic problems. He recommends the book to "those who dare to imagine radically different ways of thinking about military leadership, the profession of arms, and how to use national resources more effectively and creatively to defend our peoples and our ideas" (x).

The anthology has a range of sources and topics as impressive as the contributing authors, who have produced 35 essays, organized into six parts, covering themes from individual command responsibility to civil-military relations to the problems sentient machines pose. The concluding part features essays on the seductions and dangers of "the dark side."

Throughout the book, the authors invite readers to contemplate the challenges and potential costs of preparing for conflict. Several essays touch on Orson Scott Card's classic novel *Ender's Game* (Tor, 1985), which remains on many military reading lists and raises uncomfortable questions about the training of warriors and what it means to kill others to save one's own people. Will Meddings includes Ender's story in a meditation on leadership, concluding that, since we are only human, it is not necessary to be superhuman like Ender to lead others. Thomas Bruscino also writes on *Ender's Game*, focusing on the ethical dilemmas of Ender's teacher, Hyrum Graff, who cannot escape that "the guilt of what happens in war, even the most necessary of wars, belongs to the teachers of military leaders too" (76). In another essay on leadership and responsibility, Julie M. Still and Kelly A. Lelito analyze the informal power of the "Bene Gesserit," the shadowy priestess caste in Frank Herbert's *Dune* (Chilton Book Company, 1965). The authors note how the group's extensive power

and ability to pursue a long-term strategy made them overconfident. They are "so focused on a specific plan and so certain they know how it will unfold that they lose perspective on what is actually occurring" (149). The Bene Gesserit miss the significance of events and individuals who do not fit their expectations.

In considering the human factor of strategy, several authors examine female or feminine-coded strategy. Heather S. Gregg highlights Princess Leia in *Star Wars* and her successful use of deception (based on the ancient Greek concept of *métis*—the strategy of combining cunning and wisdom) against the brute force of the Galactic Empire and the First Order. Leia's actions suggest indirect approaches, often coded as feminine, must be part of any sensible approach to future strategic challenges. Jacqueline Whitt analyzes the novels of Octavia Butler and considers the need for empathy and pluralism in a society's response to challenges, advocating for awareness of "whose voices and experiences we are missing when we build organizations that are more homogenous than not" (109).

An important leadership lesson from a Mel Brooks film is one of many surprising insights in this collection. In one of the final essays, on the appeal and danger of "the dark side," Dan Ward chooses a peculiar example—Dark Helmet from *Spaceballs*, Mel Brooks's classic *Star Wars* spoof. The Dark Helmet parody of Darth Vader has real-world educational implications. Dark Helmet, a terrible leader, ultimately fails, just as Vader does. In comparing the two, Brooks reveals the absurdity and futility of Vader's (and the Empire's) authoritarian leadership model. Ward concludes, "Dark Helmet's story shines a light on the consequences of terrible leadership. He shows us that when people in positions of power are condescending and abusive, they are also childish and pathetic. . . . Armed with that insight, we can chart a course to a better result, and we can discover the wisdom of leading with empathy compassion, and humility" (254).

Faced with so many rich topics for reading and discussion, the reviewer can only encourage readers "to boldly go" look for the book in the nearest bookstore or library.

Radical War:
Data, Attention and Control in the 21st Century

by Matthew Ford and Andrew Hoskins

Reviewed by Dr. Kathleen Moore, professor, Center for Strategic Leadership,
US Army War College

Matthew Ford and Andrew Hoskins have written a comprehensive analysis of the new age of information warfare and understand what it means to have an information advantage. They provide a thorough review of modern history as it pertains to the intersections of war, people, data and technology, and how the manipulation of all three has redefined war. Further, they illuminate how the removal of traditional boundaries between these fields has led to a sustained period of low-grade persistent political violence.

The main contribution of this work is its holistic perspective of the topic. Most writing on this subject focuses on the weaponization of social media alone, but this work expands on the traditional thinking of digital weaponization to include all media, data, and mediums and examines the overall end effect of the weaponization of the captive mind. Ford and Hoskins do an excellent job explaining the mechanism of this type of asymmetrical warfare, the cognitive mechanism at issue, and their effects, which are extremely important but often overlooked topics.

The second and equally important contribution of this monograph is its reexamination of the use of information in asymmetrical warfare. The authors dive deep into the structure and foundations of information and politics to understand how this phenomenon has occurred. By examining current means and methods, Ford and Hoskins lead readers to an organic and disturbing conclusion that information warfare is a collaborative, cooperative, and collective endeavor requiring participation from adversaries, civilians, soldiers, government, society, and Big Tech alike, where success in disrupting a given information ecosystem depends on every actor. Readers will easily and uncomfortably recognize their own complicity in this space.

The authors are well-known longtime figures in the academic field studying the digital aspects of international warfare and cognitive studies. Their varied considered sources reinforce their arguments, and their

well-chosen examples and case studies support the work's overarching concepts. Refreshingly, Ford and Hoskins do not shy away from supporting claims with topical news sources, despite academia's bias toward traditional academic publishing. In the digital space, the prolonged pace of academic publishing does not match the speed of technology and its evolving usage, so respected media outlets writing about technology should not be dismissed.

I believe this work is very relevant to senior members of the defense community as it provides not only a very good systems approach to understanding this phenomenon, but also uses a distinct cause-and-effect analysis of a thoroughly redefined battlefield—one that many defense leaders may not fully understand, unfortunately, as it depends on their own knowledge of the modern information environment. That said, considering the clear strategic implications this book provides, hopefully the US defense community will break out of its thinking of information advantage as only an offensive measure with strictly defined parameters and start considering broad defensive measures and how the current information ecosystem likely affects the average soldier and society.

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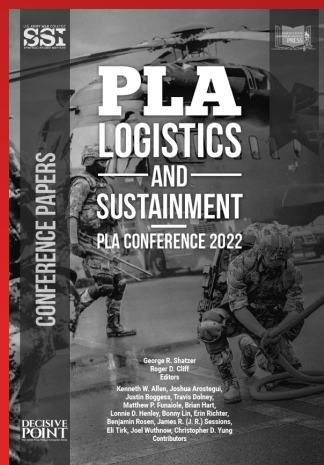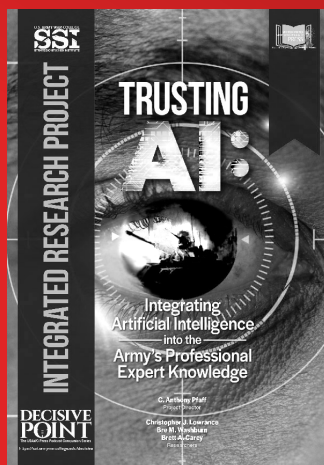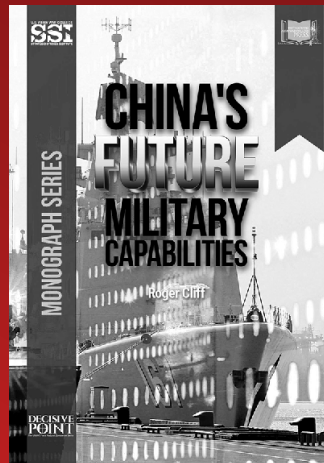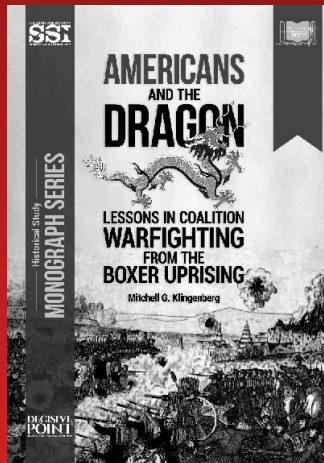

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