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From the Editor

The Emergency Service
Evaluating the Role of Militaries in Humanitarian Operations, Disaster Relief, and Other Nonconflict Crises

On 27 July 1959, a new issue of *Life* magazine hit the newsstands. On its cover was a dramatic depiction of multiple U.S. Navy ships and helicopters, all bright white and adorned with small red crosses. The text that accompanied this illustration announced a "Bold Proposal for Peace—A New Kind of Great White Fleet." Inside the magazine, after briefly recounting the historic cruise of the original Great White Fleet, this feature story detailed a potential "new mission" for the U.S. military. "Its ships, painted white as a sign of peace, would carry no guns at all," *Life*'s editors explained. "Instead, they would sail around the world with food for the hungry, medical facilities for the sick or injured, and technicians to help underprivileged peoples improve their own lot."[1]

The brainchild of U.S. Navy commander Frank A. Manson, the "New Great White Fleet" was, in its time, an ambitious humanitarian initiative. The fleet, as Manson envisioned it, would be composed of mothballed U.S. Navy hospital ships, aircraft carriers, and other auxiliary vessels. Fully equipped with appropriate supplies and personnel, this peacetime armada would be prepared to render prompt emergency assistance to survivors of famine, disaster, and epidemic disease around the world. The fleet's crews would also provide education and technical assistance to these same populations, empowering them to prevent and mitigate the risks of future catastrophes in the first place.[2] Pitching Manson's ideas to Congress, Senator Hubert H. Humphrey (D-MN) called the proposed fleet "a symbol of American good will, friendship, and maturity." Through its humanitarian acts, Humphrey continued, the fleet would demonstrate "the real power of a great nation."[3]

Although Manson, Humphrey, and other promoters presented their vision as a "new mission" for the U.S. military, the activities they proposed were not as novel as they claimed. By 1959, the U.S. armed forces already had a long history of participating in humanitarian assistance and disaster relief operations—a tradition that well predated calls for a new Great White Fleet. Throughout the

nineteenth century, the federal government regularly provided aid to victims of disasters in U.S. states and territories, often relying on the War Department to send rations, tents, rescue craft, and Army doctors and engineers to the scene.[4] In the case of several international disasters, including famines in Ireland (1847) and India (1897), Congress also authorized U.S. Navy vessels to transport privately donated relief supplies overseas.[5]

Across the first few decades of the twentieth century, building on these earlier foundations and precedents, the U.S. military's role in disaster assistance expanded significantly. At home, American Service personnel assisted victims of the 1906 San Francisco earthquake, the 1927 Mississippi River floods, and dozens of other domestic disasters.[6] Abroad, the War and Navy Departments regularly contributed supporting aid as well. In early 1909, sailors of the original Great White Fleet—the one that traversed the globe during Theodore Roosevelt's presidency—participated in a major foreign disaster relief operation in southern Italy, assisting survivors of a devastating tsunami and earthquake in Messina and its environs.[7] U.S. Army, Navy, and Marine personnel responded to catastrophes in many other nations and empires during the early twentieth century as well, among them Chile, the Dominican Republic, China, Japan, Nicaragua, and the Ottoman Empire.[8]

By the time the Second World War ended in 1945, the U.S. military had a lengthy history of responding to major disasters and national emergencies, both foreign and domestic. Emerging from that conflict as the world's most powerful military, the U.S. armed forces continued to expand their involvement in this sphere, dramatically increasing both the frequency and scale of their humanitarian operations. By the time *Life* magazine introduced Americans to the "New Great White Fleet," in short, numerous precedents existed for this sort of peacetime undertaking. By 1959, the U.S. military had established its reputation as not only a global policeman, but also a global firefighter and ambulance driver within U.S. states and territories and across much of the world.

Despite the military's long-standing tradition of disaster assistance, and in spite of the concerted lobbying by Manson, Humphrey, and other advocates, the "New Great White Fleet" that they called for ultimately failed to launch. Due to assorted concerns about its feasibility and practicality, legislation to establish the proposed peacetime armada never made it out of Congress.[9] Although the "New Great White Fleet" never sailed, the humanitarian and diplomatic objectives animating this proposed venture endured, underpinning a variety of U.S. military programs in the late twentieth and early twenty-first centuries.

Perhaps the more obvious and visible analogs today are the hospital ships USNS *Mercy* (T-AH 19) and USNS *Comfort* (T-AH 20). Commissioned in 1986, these ships and their crews engage in humanitarian assistance and disaster relief operations worldwide, including in such recent emergencies as Typhoon Haiyan in the Philippines (2013), Hurricane Maria in the Caribbean (2017), and COVID-19 in the United States (2020).[10] *Mercy* and *Comfort*, though, represent only the tip of the iceberg. In the twenty-first century, the Service

branches of the U.S. armed forces play a critical role in responding to major disasters and natural emergencies, both at home and abroad.

Overseas, the Department of Defense and the U.S. armed forces participate in dozens of humanitarian assistance and disaster relief operations each year. Some recent examples include the Tham Luang Nang Non cave search and rescue mission in Thailand (2018), Cyclone Idai in Mozambique and other eastern African countries (2018), and Hurricane Dorian in the Bahamas (2019). Normally, the military conducts these foreign assistance operations at the request of the State Department, providing support to the U.S. Agency for International Development, the Bureau for Humanitarian Affairs, and other designated bureaus and offices. This aid takes many forms. American servicemembers routinely assist on the ground in other countries, helping foreign governments meet their citizens' basic needs for food, water, shelter, emergency health care, and electricity and communications services. Every year, the Department of Defense donates large quantities of excess property (including vehicles, tents, rations, and other nonlethal supplies) to partner nations for humanitarian purposes. The U.S. military also transports relief supplies donated by American nongovernmental organizations to partner nations, providing space on military ships and aircraft for this material aid.[11] These humanitarian assistance and disaster relief operations, as the Defense Security Cooperation Agency explains, are intended to "support U.S. military forces by promoting peace and stability in regions of tension and by providing aid and relief in the aftermath of natural or man-made disasters."[12]

Domestically, state governors regularly activate Army and Air National Guard units to respond to emergencies and disasters in their states.[13] When the severity of a crisis demands it, the Robert T. Stafford Disaster Relief and Emergency Assistance Act also authorizes the president to deploy military forces to U.S. states and territories to provide additional assistance. While Hurricanes Katrina (2005), Sandy (2012), and Maria (2017) triggered some of the largest and most memorable responses in recent years, U.S. Service personnel have participated in scores of other domestic disaster relief operations during the twenty-first century. These include responding to catastrophes caused by natural hazards, such as earthquakes and floods, and by human activity, such as wildfires or chemical spills. Whatever the crisis, U.S. forces perform many essential tasks. Their activities include conducting search-and-rescue operations; removing debris and clearing roadways; providing emergency medical care, organizing access to food, water, and shelter; communicating critical information to the public; and restoring essential facilities and services.[14]

Responding to disasters and other national emergencies thus represents a core part of the U.S. military's mission, both historically and in the present day. Yet the United States, it bears noting, is by no means the only country that relies on its military for such purposes. As several of the contributors to this special issue discuss, the armed Services of most countries engage in similar sorts of activities as their U.S. counterparts, responding to both national

and international crises and providing various forms of emergency relief, short-term recovery, and long-term reconstruction assistance.[15] "Because of militaries' unique lifesaving capabilities," as Chilean Navy commander Sergio Gómez explains, "humanitarian assistance and disaster relief (HA/DR) is a mission of many armed services around the world."[16]

What are we to make of the central—and perhaps vital—role that militaries play in responding to disasters and national emergencies, both in the United States and in other nations? On the one hand, these humanitarian operations arguably have many positive benefits. By utilizing the immense logistical capabilities of their nations' militaries, Service personnel save countless lives and assist communities in recovering from crises. Using military aircraft, ships, and vehicles, they transport relief supplies into remote regions and across oceans and continents. Piloting military helicopters and watercraft, Service personnel perform search-and-rescue operations. Operating heavy machinery, they clear away rubble and debris. Large stockpiles of military rations, blankets, tents, medical equipment, field hospitals, and other supplies, originally maintained for warfare, are easily repurposed as humanitarian aid in times of emergency. Given their specialized knowledge and training in many diverse fields, military Service personnel are also equipped to perform a wide range of essential tasks during times of crisis: fighting fires, delivering medical care, distributing food and essential supplies, restoring electrical grids and communications systems, and undertaking engineering projects, just to name a few.

In addition to assisting disaster survivors, humanitarian operations stand to benefit both the militaries that conduct them and their governments. For Service personnel, responding to disasters and other peacetime emergencies serves as a hands-on training exercise, preparing them for other types of deployments in the future. For governments, meanwhile, such military missions have the potential to advance multiple domestic and foreign policy objectives. By providing rapid, generous assistance in times of crisis, armed forces can help their governments demonstrate concern for affected populations, minimize disorder and unrest, outshine geopolitical rivals, and showcase the beneficence and the humanitarian side of military power.

For all the good they achieve, militarized responses to disasters and national emergencies can also have negative consequences and impacts. The presence of armed Service personnel in disaster-stricken areas has the potential to breed resentment, animosity, and hostility among local populations. As all too many historical examples attest, such outcomes are especially likely when military forces behave not as equal partners but as occupiers, attempting to coerce and control—sometimes through violent means—the very populations they are supposed to assist. Even when military interventions proceed more smoothly and cordially, they raise a host of thorny ethical, political, bureaucratic, and legal questions. What is the proper relationship between civilian and military responders? How can personnel of armed Services, governmental agencies, and nongovernmental organizations cooperate most effectively in emergency situa-

tions? How much power and authority should be granted to national militaries operating within their own nations or within the international humanitarian system? Should militaries be considered humanitarian actors? What are the potential implications of this designation?

Given these complex questions and considerations, and in recognition of the historic and contemporary role that militaries play in humanitarian assistance and disaster relief, the editors have devoted this issue of the *Journal of Advanced Military Studies* to military responses to national emergencies and natural catastrophes. In the articles that follow, contributing authors explore this topic from multiple angles, analyzing a variety of specific case studies from diverse disciplinary perspectives. Collectively, these articles begin to address some of the questions raised above while, at the same time, prompting new questions to consider and arguments to debate.

Looking back more than a century, the first two articles highlight the long history of military responses to disasters and emergencies, providing illustrative examples from the Americas and Europe. In his article "A Tale of Two Storms," Ian Seavey examines the U.S. Army's actions following two successive hurricanes in 1899 and 1900: the first in Puerto Rico (a newly acquired U.S. territory) and the second in Galveston, Texas. In both locations, the U.S. Army became the lead federal assistance agency. Going well beyond the provision of lifesaving humanitarian relief, Seavey argues, Army personnel fundamentally transformed the political, economic, and social order of the disaster-stricken locales in which they operated. Turning to the Alpine border between Italy and the Austro-Hungarian empire, Mauricio Nicolas Vergara demonstrates the decisive role that natural hazards played in the First World War. As Vergara argues, the hostile Alpine environment represented a "great enemy" to the Italian and Austro-Hungarian militaries alike, contributing significantly to casualty rates and affecting manpower, tactics, and strategy on both sides of the conflict. As his case study convincingly shows, scholars have much to gain by incorporating nature into their studies of warfare and military history.

Moving into the post–World War II era and shifting the focus to Southeast Asia, Norman Joshua examines how the Indonesian National Armed Forces have responded to emergencies in their nation since 1945, when Indonesia formally declared its independence. Over the decades, Joshua argues, these sorts of operations have been deeply influenced by the military's ongoing involvement in counterinsurgency campaigns. As a result, disaster and emergency management in Indonesia has evolved into a heavily militarized practice, as evidenced in the wake of both the 2004 Indian Ocean tsunami and the country's current response to COVID-19.

While Joshua's article bridges the twentieth and twenty-first centuries, the remaining articles in this issue move squarely into the present, offering valuable perspectives on catastrophes and the military in contemporary times. The first two of these articles take the form of broad, theoretical overviews, providing useful analytical frames that can be applied to a variety of more specific case

studies. Myriame Bollen and Jori Pascal Kalkman examine civil-military interactions in disaster and emergency scenarios. Drawing evidence from many parts of the world, they describe practices of civil-military collaboration in crisis situations, underscoring the inherent complexity of these relationships. After assessing both the possibilities and drawbacks of military involvement in emergency response, Bollen and Kalkman make concrete recommendations for ways to mitigate these challenges and improve civil-military cooperation in future disasters. In the next article, Elizabeth G. Boulton urges readers to understand climate and environmental change as a "hyperthreat": an encompassing, existential, and largely unprecedented global crisis. If military and political leaders are to respond effectively to this complex ecological emergency—and to the violence, death, destruction, and other harms it will unleash—they must adopt a new grand strategy, Boulton argues. Such a twenty-first century grand strategy, she stresses, should be built on the concept of "entangled security," or the recognition that planetary, human, and state security are fundamentally and inextricably intertwined.

The next five articles focus specifically on the U.S. armed forces, examining some of the diverse humanitarian activities that different Service branches have performed in recent years. Concentrating mainly on domestic affairs, Michael G. Anderson explores the National Guard's involvement in manifold crises throughout 2020: wildfires and hurricanes, civil and political unrest, the situation at the U.S.-Mexico border, and the COVID-19 pandemic. Telling a cautionary tale, Anderson discusses the challenges of balancing the guard's growing roster of domestic deployments with its existing and ongoing international commitments.

Turning to the COVID-19 pandemic, Nathan Packard and John E. Hall examine the critical role that the Department of Defense played in responding to this novel disease threat. As their article shows, the Defense Department, in collaboration with civilian government agencies and the private sector, was integral to the development, production, and distribution of vaccines and other therapeutics. The military will be able to draw on these experiences, Packard and Hall predict, as it responds to whatever future national and international emergencies lay in store. While Packard and Hall examine how the military helped tackle COVID-19, Timothy Berger considers the inverse: the mental health impacts that COVID-19 has had on the U.S. military. Focused primarily on reducing deaths and physical symptoms, Berger argues, the Department of Defense has paid insufficient attention to the pandemic's grave psychological consequences, for either the U.S. armed forces or the U.S. population as a whole. Without more sustained attention to the stress and trauma that mass loss and suffering have caused, Berger warns, the mental health of U.S. Service personnel will be negatively affected for a considerable period of time. This situation threatens to reduce the military's medical readiness, undermining its ability to respond to either the current pandemic or other, future threats.

Shifting the focus to disasters occurring beyond U.S. borders, Christopher

Davis compares the U.S. military's responses to two recent crises in Haiti: the first, in 2010, caused by a cataclysmic earthquake, and the second, in 2021, triggered by an earthquake and tropical storm. Attuned to the complex political situation in Haiti and the fraught history of U.S.-Haitian relations, Davis discusses the lessons that the U.S. Southern Command learned from its experiences in 2010, showing how these lessons enabled its personnel to stage a more effective response to the 2021 catastrophe. In his article "Staying First to Fight," Eric Hovey likewise focuses on U.S. foreign disaster assistance but turns his attention to the U.S. Marine Corps and its humanitarian assistance efforts in the Indo-Pacific Region. These operations, Hovey explains, have long been an important part of the Marine Corps' mission; in the years ahead, he argues, humanitarian efforts will likely become even more integral to the Marines' mission and identity. Presenting such developments in a positive light, Hovey contends that participation in foreign disaster assistance stands to enhance the Corps' warfighting readiness while advancing the United States' foreign policy objectives in the Indo-Pacific Region.

Moving away from the United States, the final two articles consider the disparate roles that other nations' militaries have played in contemporary disasters and national emergencies. Focusing on central Europe, Dominik Juling recounts how the German armed forces (the *Bundeswehr*) responded to cataclysmic floods that devastated much of Germany during the summer of 2021. While describing the mechanisms and organizational structure of the German domestic disaster relief system, Juling also highlights some of the controversies and challenges that arose because of the Bundeswehr's participation in flood assistance, a responsibility that is typically assumed by other sectors of the German state and society. Turning to the Middle East—and with an eye toward future threats—Austen D. Givens, Nikki Sanders, and Corye J. Douglas warn that the Iranian government will likely increase its use of cyberattacks as a form of military retaliation in coming years. In making this forecast, they assess Iran's current cyber warfare capabilities and the diplomatic and economic factors driving Iranian military and political decision making. In contrast to other contributors to this special issue, Givens, Sanders, and Douglas thus emphasize the role that militaries can play in *instigating* disasters and *fomenting* national emergencies, rather than responding to them.

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ENDNOTES

1. "A New Great White Fleet," *Life*, 27 July 1959, cover, 17–25.
2. For additional information on this proposal, see the following records: folder entitled "Health, Education, & Life for All Peoples,' Box 7, Record Group 286: Records of the U.S. Agency for International Development; folder entitled "800.93 White Fleet of

Mercy Ships," Box 1661, Series IV, Record Group ANRC: Records of the American National Red Cross; both housed at the National Archives and Records Administration II, College Park, MD.

3. Hubert H. Humphrey, speaking in 86th Cong., 1st Sess., *Congressional Record* 105, no. 122 (21 July 1959): 13866.

4. See, for example, Michele Landis Dauber, *The Sympathetic State: Disaster Relief and the Origins of the American Welfare State* (Chicago: University of Chicago Press, 2012); Gareth Davies, "Dealing with Disaster: The Politics of Catastrophe in the United States, 1789–1861," *American Nineteenth Century History* 14, no. 1 (2013): 53–72, https://doi.org/10.1080/14664658.2013.768422.

5. *List of Acts and Resolutions of Congress Granting Relief to the People of Foreign Nations*, 60th Cong., 2d Sess., *Congressional Record* (5 January 1909): 453.

6. Gaines M. Foster, *The Demands of Humanity: Army Medical Disaster Relief* (Washington, DC: Center of Military History, U.S. Army, 1983); Marian Moser Jones, *The American Red Cross from Clara Barton to the New Deal* (Baltimore, MD: Johns Hopkins University Press, 2012); Andrea Rees Davies, *Saving San Francisco: Relief and Recovery after the 1906 Disaster* (Philadelphia, PA: Temple University Press, 2012); and John M. Barry, *Rising Tide: The Great Mississippi Flood of 1927 and How It Changed America* (New York: Simon & Schuster, 1998).

7. Miscellaneous correspondence, 1907–1909, ZO: Great White Fleet and Atlantic Fleet, Z Files, Naval History and Heritage Command Library, Washington, DC; James R. Reckner, *Teddy Roosevelt's Great White Fleet* (Washington, DC: Naval Institute Press, 2001), 145–48; and Salvatore J. LaGumina, *The Great Earthquake: America Comes to Messina's Rescue* (Youngstown, NY: Teneo Press, 2008).

8. Adam B. Siegel, *A Sampling of U.S. Naval Humanitarian Operations* (Alexandria, VA: Center for Naval Analyses, 1990); Adam B. Siegel, *A Chronology of U.S. Marine Corps Humanitarian Assistance and Peace Operations* (Alexandria, VA: Center for Naval Analyses, 1994); J. Charles Schencking, "Giving Most and Giving Differently: Humanitarianism as Diplomacy Following Japan's 1923 Earthquake," *Diplomatic History* 43, no. 4 (2019): 729–57, https://doi.org/10.1093/dh/dhz025; and Julia Irwin, "The 'Development' of Humanitarian Relief: U.S. Disaster Assistance Operations in the Caribbean Basin, 1917–1931," in *The Development Century: A Global History*, ed. Stephen Macekura and Erez Manela (Cambridge, UK: Cambridge University Press, 2018), 40–60, https://doi.org/10.1017/9781108678940.003. Irwin also discuss many of these humanitarian operations in her forthcoming book, *Catastrophic Diplomacy: Foreign Disaster Assistance in the American Century*.

9. S. Res 3657, *A Bill to Amend the Mutual Security Act of 1954, as Amended, So as to Provide for the Establishment of a White Fleet Designed to Render Emergency Assistance to the People of Other Nations in Case of Disaster*, 86th Cong. (1960); H. Res 12065, *A Bill to Amend the Foreign Assistance Act of 1961, as Amended, So as to Provide for the Establishment of a White Fleet Designed to Render Emergency Assistance to the People of Other Nations in Case of Disaster*, 88th Cong., 2d Sess. (1964).

10. "Hospital Ships," U.S. Navy Military Sealift Command, accessed 17 January 2022.

11. *Department of Defense Directive (DODD) 5100.46, "Foreign Disaster Relief (FDR)," Foreign Humanitarian Assistance*, Joint Publication 3-29 (Washington, DC: Department of Defense, 14 May 2019).

12. "Federal Disaster Relief (FDR)," Defense Security Cooperation Organization, accessed 1 April 2022.

13. *Civil Support Operations*, Field Manual 3-28 (Washington, DC: Department of the Army, 2010).

14. Jennifer K. Elsea and R. Chuck Mason, *The Use of Federal Troops for Disaster Assistance: Legal Issues* (Washington, DC: Congressional Research Service, 2012).

15. Sharon Wiharta et al., *The Effectiveness of Foreign Military Assets in Natural Disaster Response* (Stockholm: Stockholm International Peace Research Institute, 2008); Andrea de Guttry, Marco Gestri, and Gabriella Venturini, eds. *International Disaster Response Law* (The Hague: T.M.C. Asser Press, 2012); and David D. Caron, Michael J. Kel-

ly, and Anastasia Telesetsky, eds., *The International Law of Disaster Relief* (New York: Cambridge University Press, 2014).

16.   Sergio Gómez, "Humanitarian Response Is a Military Mission," U.S. Naval Institute *Proceedings* (August 2019).

A Tale of Two Storms
U.S. Army Disaster Relief
in Puerto Rico and Texas, 1899–1900

Ian Seavey

Abstract: This article argues that the disaster relief efforts following hurricanes in Puerto Rico in 1899 and Galveston, Texas, in 1900 represent a watershed in American military history. These two cases highlight a critical juncture where the U.S. Army became the lead federal agency in imperial and domestic disaster relief and established a precedent that lasted well into the twentieth century. By declaring martial law, directly overseeing relief efforts, and plugging into existing social hierarchies, the Army and local elites completely reconstructed the political, economic, and social order of both locales. As this was a relatively new role for the Army, they relied on the local social hierarchy as a matter of expediency because of the absence of any existing doctrine to guide their disaster relief efforts. These Army relief efforts culminated in fostering two antidemocratic governments: a colonial regime in Puerto Rico and the first commission-style government in Galveston that upheld Jim Crow policies that were eventually replicated throughout the United States.

Keywords: U.S. Army, Puerto Rico, Galveston, imperialism, disaster relief, Jim Crow

On 8 August 1899, Hurricane San Ciriaco ravaged Puerto Rico, drowning nearly 3,000 people.[1] Only a few months had passed since the United States assumed control of the island in the Spanish-American

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War in 1898, and military governor U.S. Army brigadier general George W. Davis saw the storm as the perfect opportunity to demonstrate American benevolence to the people of the newly acquired territory. Davis quickly petitioned the federal government for relief supplies. However, American largesse came with strings attached. When American ships arrived with food, medical supplies, and clothing, Davis and chief surgeon Major John Van R. Hoff limited the availability of aid only to those Puerto Ricans willing to help clean up debris and bury the dead. Davis and Van Hoff put local plantation owners in charge of implementing this policy to uphold the social hierarchy. Planters then took this mandate one step further by distributing food only to workers who helped clear property and recover crops.[2]

Not long after, Davis appeared before the Senate Committee on the Pacific Islands and Puerto Rico in 1900, arguing that the United States needed full civic control of the governance of Puerto Rico.[3] Davis based his argument on the economic and political instability he encountered on the island after the hurricane. Davis's testimony proved indispensable in the passing of the Foraker Act in 1900, which established a civil government in Puerto Rico under American rule.[4]

On 8 September 1900, exactly 13 months after Hurricane San Ciriaco struck Puerto Rico, a second great storm devastated Galveston, Texas, claiming the lives of more than 6,000 people. Led by Clara Barton, the American Red Cross (ARC) supported with a U.S. Army detachment swiftly answered Galveston's plea for relief, partnering with the city's elite to administer aid. The Central Relief Committee (CRC), which consisted of elite White Galvestonians, consolidated their power over city affairs when Brigadier General Thomas Scurry declared martial law and issued multiple statements proclaiming that any able-bodied men who did not volunteer to clean debris and bury the dead would not be fed.[5] These proclamations were aimed at poor African Americans who made up 22 percent of Galveston's pre-storm population.

Scurry and the CRC, like Davis in Puerto Rico, treated relief as a reward for labor, not as a necessity to alleviate suffering, and yet again the military was tasked to supervise the distribution of aid. After the storm, this paternal approach persisted as the same elite businessmen who partnered with the Army and oversaw the relief efforts formed a commission-style city government to rebuild Galveston and barred African Americans from political participation. This form of government first originated in Galveston after the storm during the Progressive Era (from the 1880s to the1920s) and then spread to 500 other cities throughout the United States.[6] The commission ruled the city from 1901 until 1960 and continued to exclude Black Galvestonians, thereby reinforcing Jim Crow's presence.

The Argument for U.S. Military Involvement for Disaster Relief

This article argues that the cases of Puerto Rico and Galveston represent a wa-

tershed in U.S. military history, as these two cases highlight a critical juncture where the U.S. Army became the lead federal agency in imperial and domestic disaster relief for the very first time. By declaring martial law, directly overseeing relief efforts, and plugging into existing social hierarchies, the Army and local elites reconstructed the political, economic, and social order of both locales. As this was a relatively new role for the Army, they relied on the local social hierarchy as a matter of expediency because of the absence of any existing doctrine to guide their disaster relief efforts.[7] However, this also meant that access to aid came with strings attached and that the poorest and most in need of aid were largely overlooked.

When comparing both hurricane relief efforts, two common trends appear: the distribution of aid was not equal, and conditions were attached to obtain the aid that created distinctions between the worthy and unworthy poor. These policies directly led to the exclusion of lower-class Puerto Ricans and African Americans from the political and economic rebuilding processes except for menial labor. The two overarching trends exist because the Army's presence in both Puerto Rico and Galveston fostered a top-down approach of disseminating aid. The Army relief efforts were the vital component in empowering local elites, which resulted in the promulgation of two nondemocratic forms of governance: colonial status for Puerto Rico and the commission government in Galveston, which further entrenched Jim Crow laws. This practice of the Army partnering with local elites and administering aid unequally became the standard method for American disaster relief operations beginning with these two storms and persisted into the twentieth century with occasions like the 1906 San Francisco earthquake and the 1928 Caribbean hurricane.[8]

In terms of structure, to make this argument, this article examines both the U.S. Army's response to Hurricane San Ciriaco in Puerto Rico in 1899 and how disaster relief was administered in Galveston in 1900. This examination is followed by a synthesis, analyzing the two case studies to highlight how the inherent similarities represent a critical juncture for the U.S. Army in terms of managing disaster relief. By way of conclusion, the final lessons-learned section illustrates what contemporary military officers and practitioners can take away from these two historical case studies for application in future disaster contingencies.

Why Galveston and Puerto Rico Were Departures from the Norm

Prior disaster relief was handled on a case-by-case basis primarily by private charities and local governments that petitioned for federal government involvement.[9] While the Army Corps of Engineers often aided in domestic flood relief in such instances as the 1882 Mississippi flood or the 1889 Johnstown Flood in Pennsylvania, these relief efforts were largely piecemeal, disorganized, and did not involve federal government and military cooperation.[10] Therefore, the Army's role in Puerto Rico and Galveston deviated from the norm by exerting

complete control over relief operations and directly influencing local politics, economics, and social dynamics.

Scholars have discussed these two storms at length separately but failed to put them in conversation together as a way analyze the Army's vital role in the disaster relief at the turn of the century.[11] By examining the primary sources with a comparative lens, this article also contends that the Army was a product of its time and influenced by wider Progressive Era reform trends such as social control of the lower classes and humanitarianism. At this time, American Progressives developed a growing obsession with professionalism and expertise that cultivated the establishment of new bureaucratic institutions, like the American Red Cross in 1900, which expanded the federal government's power.[12] The ARC had an established history of assisting in military conflicts and providing disaster aid in the 1880s. However, the Galveston storm represented the first partnership between the Army and the ARC after it became an official government institution in 1900.[13]

The fact that these two relief missions took place in the Progressive Era matters for military historians and practitioners because this was a transformative time in the history of the U.S. Army. The Army's experience with disaster relief in Puerto Rico, cooperation with the ARC in Galveston, and experimentation with colonial governance in Puerto Rico, Cuba, Guam, and the Philippines prompted Secretary of War Elihu Root to realize that the Army could be used for what is now termed military operations other than war (MOOTW). This phenomenon influenced Root to also enact reforms to professionalize the U.S. military, especially the officer corps, to create a more efficient and organized force.[14] These reforms expanded the Army's role beyond fighting to include disaster relief, which allowed the Army to exercise a form of soft power.[15] The exertion of that power was showcased in the management of military aid in Puerto Rico and the alignment of the Army with the ARC and elites in Galveston.

The Change in Sovereignty and American Views of Puerto Rico

Puerto Rico lost any semblance of autonomy under U.S. rule but a brief examination of the change in sovereignty highlights the differences between Spanish and American regimes. With the Spanish Empire crumbling in the late 1890s, Liberal Party leader Praxedes Mateo Sagasta signed an autonomous charter for Puerto Rico on 25 November 1897.[16] This charter gave Puerto Rico quasi-dominion status and representation in the Spanish *Cortes Generales* (parliament). However, autonomy lasted a mere four months before U.S. forces landed at the town of Guánica on the southern part of the island on 25 July 1898.[17] General Nelson A. Miles, commander of the American forces, occupied the major ports and population centers on the island within three weeks. Many of the Spanish defenders became ill from disease and offered little resistance.[18] Miles acted as the military governor of Puerto Rico until hostilities ended on

12 August and the last Spanish forces withdrew on 18 October. The Treaty of Paris was signed on 10 December 1898. Article IX left the question of Puerto Rican autonomy purposely ambiguous, stating that "the civil rights and political status of the native inhabitants of the territories hereby ceded to the United States shall be determined by the Congress."[19] The treaty classified Puerto Rico as a protectorate rather than a colony because, as historian Daniel Immerwahr argues, U.S. policy makers were reluctant to use the taboo "c" word.[20] This reluctance to classify Puerto Rico as a formal colony played an important role in influencing the American military and policy maker's attitudes toward Puerto Ricans and the question of autonomy.

In May 1899, the next military governor, Brigadier General George Davis, took over and strongly opposed the prospect of autonomy before assuming the position. Davis, born in Connecticut in 1839, worked as a tutor for a White family in Savannah, Georgia, before the Civil War broke out. After the attack on Fort Sumter, he returned to Connecticut to enlist in the Union Army and participated in the South Mountain and Antietam campaigns. As a captain after the war, Davis served the U.S. Army in the Dakotas, Nebraska, Utah, and Texas fighting in the Indian Wars. Prior to the war with Spain, Davis served in Washington at the War Department, and he worked there until the United States declared war on Spain in 1898.[21]

During the war, Davis achieved the rank of brigadier general and commanded a volunteer division. In November 1898, he embarked for Cuba to serve as military governor of the Pinar del Rio Province. In May 1899, President William McKinley appointed Davis military governor of Puerto Rico for his administrative abilities.[22] His time working as a tutor in Georgia before the Civil War, fighting Native Americans, and canal building in Nicaragua shaped his ideas of race and class. In his reports as military governor, he critically evaluated the race and class of the people of Puerto Rico. The idea of disenfranchising African Americans in the South after the Compromise of 1877 appealed to Davis, who thought it could be implemented in Puerto Rico. As he stated:

> These citizens of the Union who are being disenfranchised are largely descendants of former slaves who were liberated ten years before the Porto Ricans [*sic*] were [Spain abolished slavery in Puerto Rico in 1873]. If the disenfranchisement of the negro illiterates of the Union can be justified, the same in Porto Rico can be defended on equally good grounds, for the educational, social, and industrial status of a large part of the native inhabitants of Porto Rico is no higher than that of the colored people.[23]

Davis's attitude applied to the entire Puerto Rican population, not just people of color. He also wrote that, "if universal manhood suffrage be given to the Porto Ricans [*sic*] bad results are almost certain to follow. The vast majority of the people are no more fit to take part in self-government than our reservation

Indians."[24] Davis viewed suffrage as an element of "true manhood," believing that Puerto Ricans were not "true" men and therefore did not deserve suffrage.[25] For Davis, autonomy for Puerto Rico was certainly out of the question.

Davis's view of Puerto Rico and its people prevailed throughout the U.S. military and the federal government. President McKinley remained uncertain about the Puerto Ricans' capability for self-government until he read a report from Henry K. Carroll, an advisor on the island in 1899, that informed his decision to withhold autonomy from Puerto Rico.[26] Carroll's report echoed the aforementioned paternalistic sentiments and recommended that Puerto Rico not have autonomy, but instead establish an American-led insular government to teach Puerto Ricans how to properly govern.[27] Secretary of War Root also advocated for the United States to take a paternalistic role toward Puerto Rico. Carroll's idea of paternalism combined with Root's rhetoric, which implied that Puerto Ricans should freely submit themselves to America, helped this idea grow.[28] These paternalistic sentiments reflected ideals to pity the poor and those less fortunate, but still maintain a strict social hierarchy. These outlooks manifested in the relief efforts after Hurricane San Ciriaco hit the island on 8 August 1899.

San Ciriaco and the Relief Efforts

The hurricane affected Puerto Ricans of all ages on the coast and in the highlands. Luis Medina was only three years old when San Ciriaco hit southern Puerto Rico; "I remember San Ciriaco, I was living in a house similar to a ranch house. Behind the house there was a hill with a lot of trees. When the hurricane passed, I was amazed to see that the trees had been stripped by the hurricane. It had no leaves or flowers it was completely bare!"[29] Medina and his family did not experience the most devastating effects of this storm because they lived in Cubuy, a small town in the El Yunque rainforest on the northeast part of the island. The city of Ponce, a major population center in the south, witnessed at least 300 people swept away by the flood waters.[30] Altogether the storm claimed more than 3,000 lives throughout the island, devastated the lucrative coffee crop, and caused more than $20 million worth of property damage.[31]

Despite General Davis's racial bias toward Puerto Ricans, he knew that action needed to be taken to show the new territory, the world, and most importantly the American public how the government and the military dealt with disaster relief in its sphere of influence. The destruction of plantations and material wealth blurred the existing social hierarchy between elites and poor farmers.[32] The top of this hierarchy were the elite White landowners—*peninsulares* and *criollos*—then White or mixed-race poor farmers called *jibaros*, and then to newly freed slaves.[33] However, all social classes now needed relief, and elites could no longer patronize the poor because they themselves had nothing to give. Davis, cognizant of the existing patron-client relationship, petitioned Root to create a relief committee for the island. Root created the Central Porto Rican Relief Committee (CPRRC) that consisted of New York businessmen

and situated its headquarters in New York City. The CPRRC partnered with banks and merchant associations to obtain capital and supplies to send to Davis. In his 1902 report as military governor, Davis stated that "the immensity of the work of relief made it impractical to rely on private contributions for the food needed and other supplies."[34] As a result, the federal government and the Army appropriated most of the aid gathered by the CPRRC to the island. This insistence on federal aid assured Davis that ships reached Puerto Rico swiftly. In total, the CPRRC raised just more than $81,000.[35]

When the first ship arrived in Puerto Rico with supplies on 19 August 1899, Davis appointed chief surgeon Major Van Hoff president of the charities board. Hoff received the incoming aid and distributed it en masse to local officials who were then supposed parcel it out to the local populations. However, U.S. Army officers stationed throughout the island wrote to Van Hoff that "results were never entirely satisfactory, and the board was in constant receipt of reports of idleness in return for rations."[36] This prompted Davis and Van Hoff to develop a more top-down structure for administering aid. They ordered noncommissioned officers and enlisted men to oversee the distribution and set criteria to get food, clothing, and medical supplies. These troops were also tasked with ensuring that Puerto Ricans worked to receive aid. Van Hoff gave detailed instructions to the noncommissioned officers, stating, "Food is issued to prevent starvation. It is intended for the worthy poor, and no able-bodied man shall receive any unless he gives a full day's work in return."[37] Secretary of War Root also mentioned this specific quote in his 1899 annual report to demonstrate how these strict conditions created a distinction between the worthy and unworthy poor. This top-down structure that Van Hoff, Davis, and Root mentioned in their reports was commonplace in private relief work during the Progressive Era, but this time, the federal government and the Army made the rules.[38] Davis and Van Hoff originally instituted the conditions in an effort to not run out of supplies, but they also planned to maintain the social hierarchy when they created the program of planter relief.

In mid-September, Davis and Van Hoff received a report from quartermaster Major Thomas Cruse. Cruse wrote, "During the month of September, I had to combat a period of petty thieving, after which I caught half a dozen natives [Puerto Ricans] and two noncommissioned officers who worked for me at the docks with stolen articles in their possession."[39] Secretary Root also highlighted this disorder after the storm among Puerto Ricans and noncommissioned officers in his report, which he then used as proof to deny Puerto Rican autonomy.[40] Such behavior by Army personnel threatened to undermine the reputation of American benevolence on the island.

Thereafter, Davis and Van Hoff decided to foist part of the relief problems onto the elite Puerto Rican sugar and coffee planters to reassure them of the cordialness of U.S. occupation. These planters, whose social standing was now in question because of their destroyed crops, plead with the military government to furnish them with food and medical supplies so that they could hire

laborers to clean up their land. Van Hoff responded that "the board will furnish to proprietors whose lands have been devastated and who are in financial stress, enough food to feed a stated number of peons and their lawful families, as long as there is food at its disposal or until a new crop can be produced."[41] In exchange for their labor, the workers that the planters hired received a usufruct plot of land to till and daily food rations.[42] Planters like Vicente Antonetto responded to Van Hoff in letters that said, "The proposed measure will be a great help to us proprietors who from lack of funds are unable to restore our farms. This will also prevent the peons who refuse labor from getting food."[43] Other planters also thanked Van Hoff for quickly responding to them to maintain order and the social hierarchy.[44] Van Hoff took pride in this "partnership" of planters and peons and saw this as an opportunity to educate Puerto Ricans of the value of honest labor. This sentiment by Van Hoff echoed Progressive Era attitudes toward pitying the poorer classes while upholding the social hierarchy.

Prominent Progressive thinker Lester F. Ward stated in his 1883 tome on the study of sociology that "everything which distinguishes a savage from a civilized man can be directly or indirectly traced to the differences of education."[45] Ward called for the "artificial civilization" of the lesser classes via a governmental system, which consisted of educating the lesser classes to make them civilized and thereby eliminating lesser classes altogether. Root used similar rhetoric when describing the mission of the U.S. military occupation and the relief efforts after the storm, stating that "Porto Ricans, as a people, have never learned the fundamental or essential lesson of obedience, and they have had no opportunity to learn. There can be no free government without educating them."[46] This rhetoric proved eerily similar to Ward's ideas on social welfare and education.

Davis and Van Hoff not only viewed the planter relief program as a way to reestablish the social hierarchy and instill moral guidance but also as a tool for economic recovery. The intended goal was for the planters and peons to work together to restore the land and crops. Nonetheless, the coffee planters forfeited their position on top of the social hierarchy because they lost 90 percent of their crop to the storm. Lieutenant Colonel Joseph P. Sanger noted in his report on the census of Puerto Rico in 1899 that the coffee planters struggled the most during this period of blurred class distinction because they no longer could give patronage due to the coffee crop taking up to five years to regenerate.[47] This caused the coffee planters to either wait for the crop to mature, switch to another crop, or work for another planter. As a result, coffee no longer prevailed as the bulwark of the island's economy; sugar became king.[48]

Transformation of the Puerto Rican Economy

Emblematic of how much power the military government had in Puerto Rico, Davis advocated for completely restructuring the economy to focus on sugar production instead of coffee. Prior to the U.S. invasion and Hurricane San Ciriaco, coffee cultivation dominated the agricultural sector as the island's chief

export.[49] By 1899, coffee accounted for 54 percent of all exports. The main markets for Puerto Rican coffee were Cuba and Europe, but as Davis noted in an earlier report, those markets were practically lost because of the American occupation.[50] Puerto Rican elite Manuel Zeno-Gandía painted a vivid picture of the immense wealth coffee planters accrued during the nineteenth century in his seminal 1894 novel, *La Charca*. Throughout *La Charca*, Zeno-Gandía detailed scene after scene of wealth disparity between elite coffee planters and peasant *jíbaros*. Specifically, when describing protagonist and coffee planter Juan de Salto, Zeno-Gandía wrote, "He had no patience for the stupidities of the *jíbaros*. He oversaw every detail on the plantation that constituted his wealth, with pure affection of a father caressing the tiny heads of his offspring. They knew him as the benefactor who brought money and medicine."[51] This pointedly illustrates how much power and status coffee planters had before Hurricane San Ciriaco.

Army personnel witnessed firsthand the destruction San Ciriaco wrought on the Puerto Rican coffee industry in 1899 and influenced U.S. policy makers to facilitate a dramatic switch from an emphasis on coffee production to sugar production. Based on Davis's estimation, it would take five years for the coffee crop to regenerate and he also asserted that it should be disregarded as an export of value.[52] When Congress convened to debate the status of Puerto Rico in 1900, Davis testified that "free trade with the United States will give stimulus to agriculture, and especially sugar and tobacco; but this will not affect coffee. The general stimulus to other cultivation will perhaps have a detrimental effect upon coffee."[53] His testimony amplified the remarks he made in his 1899 report on the civil affairs of Puerto Rico in which he wrote, "Puerto Rico, never was, is not, and probably never will be, independent. It is now a possession of the United States and must so continue until Congress decides otherwise."[54] Davis's position on Puerto Rico also found favor among an interested party back on the mainland.

During the 1880s through the 1890s, the "Robber Barons" amassed great wealth, presided over monopolies, and meddled in government affairs. The sugar industry's giant was the American Sugar Refining Company, owned by Henry O. Havermeyer. The "Sugar Trust," as its detractors called the company, monopolized the sugar industry in the United States and wielded immense power over foreign policy to expand the American sugar kingdom into the Caribbean.[55] The pressures from the Sugar Trust to turn Puerto Rico into a monocrop sugar-producing economy were clearly articulated in congressional testimony. At the same congressional session in which Davis testified, representatives from the Sugar Trust, including banker John D. Luce and British-born import/export merchant Charles Armstrong, gave statements. They echoed Davis's remarks that Puerto Rico was not capable of self-governance and advocated for the United States to transition the Puerto Rican economy from coffee to sugar production.[56] In opposition to the Sugar Trust, Henry T. Oxnard, an independent sugar industrialist from California, vehemently argued against this

as it posed a threat to mainland sugar producers. Oxnard testified that "I have not the slightest doubt that the cause of Cuban War could be written in one word 'sugar'."[57] Despite Oxnard's insistence against taking Puerto Rico as a colony and switching its economy, Congress sided with the Sugar Trust.

Davis's testimony to Congress proved influential by influencing the Sugar Trust representatives and this proved the death knell for Puerto Rican sovereignty and the coffee industry, moving Puerto Rico away from autonomy and toward a monocrop economy rooted in sugar. This sequence of events led President McKinley to sign the Foraker Act on 12 April 1900, establishing a civil government in Puerto Rico controlled by the United States. In addition, a lower house of elected Puerto Ricans was established, but this body had limited power and little voice. Ultimately, the Foraker Act provided no guarantee of citizenship, statehood, or extension of constitutional protections.[58]

An additional provision in the Foraker Act stated that U.S. interests could only occupy up to 500 acres of land per enterprise, and that Puerto Rico could not trade with any other country except the United States.[59] Subsequently, with a new focus on sugar, U.S. absentee corporations under the umbrella of the Sugar Trust invaded and did not adhere to the Foraker Act's land ownership provision. The Aguirre Sugar Company in 1899, the South Porto Rico Sugar Company in 1901, and the Fajardo Sugar Company in 1905 dominated the export of Puerto Rican sugar to the United States well into the 1930s.[60] Although Puerto Rican elites owned most plantations and refineries, the U.S. sugar companies monopolized who the Puerto Rican planters could sell to. This system of sugar production stimulated the Puerto Rican economy but also served the U.S. sugar interests.

The disaster relief efforts of the U.S. Army after San Ciriaco directly led to the establishment of America's overseas empire. Expansion into Puerto Rico during the Progressive Era informed how the Army and elite intellectuals in America thought about race, poverty, and social class. In addition, the lack of a cohesive disaster relief doctrine enabled Davis to wield enormous control by partnering with local planter elites to disseminate aid, which completely restructured the politics and economics of Puerto Rico. In the eyes of Davis, Van Hoff, Root, and those in Congress that signed the Foraker Act, Puerto Ricans needed to work to receive aid. This lesson in work ethic was meant to educate Puerto Ricans in the hope that someday they could be capable of self-government. However, as the Foraker Act makes clear, they were yet again a colonized people. At the same time, protecting the social hierarchy was of utmost importance so that chaos did not ensue, and the Sugar Trust benefited. The attitudes and policies of the Army in the wake of San Ciriaco contributed to establishing hallmarks of American disaster relief, which included unequally distributing aid, attaching strings to the aid, and excluding lower class Puerto Ricans from the political and economic recovery. An examination of Galveston, Texas, before and after the great storm of 1900 also underlines these similar themes.

Galveston Prior to the Great Storm of 1900

The Great Storm of 1900 saw the U.S. Army employ the same tactics to disaster relief as in Puerto Rico. The Army units deployed to Galveston, under command of General Scurry, declared martial law, directly oversaw aid distribution, and aligned with local elites and the American Red Cross. This empowered the White elites of Galveston to reconfigure the local government and economy to exclude African Americans. However, an analysis of the situation in Galveston during and after reconstruction *prior* to the storm reveals that, like Puerto Rico, politics were more inclusive to African Americans and poor people. The port and its commerce sustained the island city's economy.[61] Cotton, the main export, shipped throughout the United States and Europe made Galveston critical to the Texas economy. Much like other southern cities in the mid-to-late 1800s, Galveston did not industrialize but continued to focus on port commerce. Galveston businessmen operating out of the port argued the lack of a fresh water supply and structural sustainability against hurricanes made industrialization untenable.[62]

During and after the Civil War, Union troops seized the port, crippling Galveston's economy because the port was the bedrock. However, when Union soldiers left in the 1870s, the economy returned to prewar production, but the focus continued to be on the port and not industrialization. The end of Reconstruction in Galveston may have helped the economy, but the presence of thousands of newly freed people living in the city, who were looking for jobs and housing, exacerbated race relations.

Public education, instituted by the Freedmen's Bureau immediately after the war, helped African Americans in Galveston improve their financial and social situations. After Union troops vacated the city in 1870, public schooling for African Americans suffered and attempts at integration were ignored. This phenomenon dominated the Southern post-occupation experience and succeeded in disenfranchising African Americans. An 1871 article in the *Galveston Daily News* stated that "colored children are not sufficiently advanced in civilization to be the fit companions of white children. They are not as cleanly; they are not as well developed morally and intellectually."[63] This view of African Americans persisted in White culture throughout the South.[64]

Galveston's economy in the 1890s appeared unstable because of the hyper focus on the port coupled with the fragility of the industry due to frequent inclement weather. Prior to the great storm of 1900, Galveston experienced harsh environmental conditions other than hurricanes, most notably repeated yellow fever outbreaks every decade starting in the 1830s. The 1890s were no different with a massive outbreak in 1897 that affected the entire Gulf Coast region.[65] When the outbreak occurred in 1897, the city owed $2 million to northern investors who helped finance port improvements.[66] Crippled with serious debt and an inability to repay loans, elites lost faith in the existing local government and called for a change in leadership.

Politically, Galveston employed a typical mayor-council style government

with 12 aldermen elected by wards prior to the 1900 storm. This system fostered corruption and allowed political machines to wield power. One journalist wrote that "the city was bankrupt by a board of ward-alderman who had out-Tweeded Tweed."[67] Prominent historian Charles A. Beard also criticized Galveston's governmental system, commenting, "the local government was paralyzed, because the problems connected with the reparation of the ruin were too much for the old political machine which had control."[68]

Prominent businessmen promoted harbor improvements when they created the Deep Water Committee in 1882, which functioned as a Progressive Era Better Business Bureau. Throughout the 1890s, the committee lobbied to increase local government oversight to boost economic and social progress. The 15 men involved with the committee exercised significant influence because together they owned more than half of Galveston's property.[69] Isaac H. Kempner, a young cotton merchant, and John Sealy, a director of the Galveston Wharf Company, involved themselves with the Deep Water Committee in the mid-1890s. These young men had immense power in city affairs because of their wealth and connections. Kempner became city treasurer in 1899, and while cleaning up the books he noticed the city's massive debt.[70] He secured loans from companies in Cincinnati and New York to keep the city afloat. However, financial matters became more complex a year later, as the city and its economy were swallowed by the sea.

The Great Storm of 1900 and the Relief Efforts

When the storm hit, the U.S. Army had two regular regiments of full-time long service soldiers stationed in San Antonio as a part of the Army's Department of Texas.[71] The commander, Brigadier General Chambers McKibbin, ordered just 200 troops to accompany Clara Barton and a team of ARC workers to Galveston on 13 September, five days after the storm hit the area with the goal to ameliorate suffering.[72] Barton vividly described the scene of the city when she first arrived in her official ARC report that stated, "a city of forty thousand people lay in splinters with the debris piled twenty feet above the surface and the crushed bodies, dead and dying, of nearly ten thousand of its citizens lay beneath."[73] Dour descriptions like this prompted General McKibbin to declare martial law, hand over command of the 200 troops to the adjutant general of Texas, Brigadier General Thomas Scurry, and name him military governor of the city.[74] In an official history of the storm, Clarence N. Ousley, the editor of the *Galveston Tribune*, wrote that "the military regime was an absolute dictatorship without precedent and without restriction."[75] Similar to General Davis in Puerto Rico, Scurry wielded immense power to act independently as military governor and decided that "the maintenance of law and order must be preserved to lead to swift restoration of industrial life in the city."[76] Scurry used the forces at his command similarly to Davis in Puerto Rico, as they were ordered to directly supervise the distribution of aid and ensure that people worked to receive relief.[77] Additionally, because Scurry only had 200 soldiers at his command, he

determined the best way to maintain control of the city was to align with local elites to uphold the racial hierarchy in Galveston and funnel the relief efforts through those elites.

Clara Barton also mentioned in her report that a group of "the best men in the city" created a committee that partnered with the military government and the ARC to organize relief efforts.[78] This group of "best men" consisted of White elite members of the Deep Water Committee. These elites leaned on General Scurry to maintain order and control of the relief efforts so that their economic and social status remained intact. Ship broker W. A. McVitie created and chaired an extension of the Deep Water Committee deemed the Central Relief Committee (CRC), which set up relief stations in each ward of the city.[79] This ad hoc group of elites used martial law to their advantage to determine which residents received aid and what compensation they wanted in exchange for the aid. Conveniently, McVitie complained to Scurry that the CRC faced difficulty in securing enough labor to remove wreckage. After hearing this news, Scurry issued an order to impress men into work gangs.[80] Subsequently, under Scurry's orders, McVitie sent out a notice that established requirements to obtain food, clothing, and medical supplies that stated, "any able-bodied man who will not volunteer to clear debris and dead must not be fed."[81] This statement, aimed toward the poor, insisted that aid not be looked on as a free handout but as compensation for services rendered. The editors of the *Galveston Daily News* reinforced the policy in both the 12 and 13 September issues stating, "Only the worthy shall receive recognition from the relief committee and all able-bodied men that expect to be supplied with food will have to work."[82] This tone rang similar to the efforts in Puerto Rico.

For the elite Whites of Galveston, their partnership with the military government enabled them to use race as the main distinction of who among the poor was considered worthy of aid. The military government in tandem with the CRC sought to keep African Americans in place on the social hierarchy by preferring some city wards over others when it came to distributing relief. The *City Times*, Galveston's only African American newspaper, candidly spoke out against this injustice asserting that "the colored man is good enough to save the lives of the little white babes, white women, and every man. He has lost everything he had and in all of that he has not been good enough to even be represented as a committeeman."[83] This statement appeared in a 29 September issue weeks after the storm passed. A 27 October issue echoed the remarks from the earlier issue when addressing the CRC, "for heaven's sake how long are you going to wait before you set aside some of that financial aid for these poor people who have lost every piece of their household goods. I hope that you all will not overlook the fact so long that there were thousands of people who were losers and did not own a home."[84] With Scurry's military government in power for more than a month after the storm, African Americans still received no relief.

Relief for Black Galvestonians did come but not from the military government or the elite Whites who oversaw the CRC. Instead, Clara Barton report-

ed that she personally received a sum of $397.05 from an African American community in Port Royal, South Carolina, who previously suffered through a terrible hurricane in 1893.[85] She wrote that "when our negro proteges of the old Port Royal hurricane heard of the disaster in Galveston, they at once gathered for aid and sent in their contributions. Of course, I would not permit one dollar of this holy gift to go to anyone but the negroes in Galveston."[86] This act of African American solidarity moved Barton and she entrusted the funds to the superintendent of the African American schools in Galveston, John Rufus Gibson. Gibson wrote a letter to Barton three months after the Red Cross had left that included a calculation of how much relief money the African American community received. Not including the endowment from Port Royal, Black Galvestonians only garnered $52.40.[87] This staggeringly low number confirmed the editorial exposés chronicling the injustice against African Americans in the *City Times*.

A contributing factor to this injustice stemmed directly from sensationalist reporting that claimed African Americans looted dead bodies. One gruesome story reported that an African American man was caught with cut off human fingers in his pocket that still had rings on them.[88] Another account from James Brown, an English immigrant who arrived shortly before the storm, wrote his family and stated, "About 20 men [*sic*] was shot dead for robbing dead of rings and jewelry."[89] In addition, accounts like these were littered throughout the pages of official military reports, ARC reports, and local newspaper articles and also included tales of looting and the consequences for engaging in that type of behavior.[90] In one particular report written by the special assistant to Barton, Fannie B. Ward, she recounted that after a group of Black men were supposedly caught looting, "the band of negroes was forced at bayonet point to move the corpses so far advanced in decomposition that they were falling apart as they moved them."[91] Stories like these represented African Americans negatively and contributed to the lack of relief sent to them. These narratives also run parallel to Quartermaster Cruse's account of thieving in Puerto Rico. While the stories of looting and thieving abound prominently in these aftermath reports, they almost always implicate the lower class and people of color. Such similarities highlight how in both cases, elites and the military in charge of distributing aid painted the less fortunate Puerto Ricans and Black Galvestonians as hostile marauders capable of committing grotesque acts of brutality. These embellishments also had economic and political effects on the African American community as well.

Based on the evidence, Scurry's military government allowed the elites to continue excluding African Americans from relief policies immediately after the storm. The strict martial law and streamlined decision making in turn bled into politics and enabled the White elites to establish a different form of government. The elites chose a commission-style government that elected a chairman and appointed three at large members. It could be argued that this type of government structure could only have been instituted after the prolonged presence

of the Army and their control of the relief efforts through martial law. Nonetheless, this governing body presided over Galveston until 1960. During the reign of the commission, African Americans were continually disenfranchised and excluded in the planning of structural improvements. Therefore, the Army seemingly empowered these elites to act antidemocratically, which manifested in the commission government.

On 12 September 1901, real estate broker Valery Austin became the last member of the four-man commission government appointed by Texas governor Joseph D. Sayers.[92] The other members of the commission were Judge William T. Austin, financier Isaac H. Kempner, and wholesale grocer Herman Lange. Governor Sayers appointed these first commissioners because Galveston needed a governing body quickly to restore order, but subsequent commissioners would be elected. These elite men assumed social and political control of the city. However, Progressives throughout the United States chose to ignore the antidemocratic features of the commission because, by 1917, more than 500 cities adopted this style of government.[93]

In total, the great storm of 1900 claimed the lives of more than 6,000 people and still ranks as the deadliest hurricane in American history. For the people of Galveston, their identity became linked to the storm and served as a defining moment for the city. Citizens shared this moment and referred to events as either prior or post storm. The storm also had a profound effect on how the U.S. Army dealt with future disasters because, as previously stated, prior relief efforts were undertaken unevenly and rarely involved the federal government and the Army working together or at all. In his annual report about the Galveston relief operations, the adjutant general of the U.S. Army, Major General Henry C. Corbin, lamented the fact that a disconnect existed between the federal government and the Army when it came to appropriating aid. Corbin wrote, "the absence of any legal authority to apply the property of the United States to any purpose not specifically mentioned is the cause of much embarrassment in sudden emergencies demanding prompt action."[94] He continued to chide this area of civil-military relations when he later proclaimed that "it is hoped that Congress will issue a legal enactment formally granting full power to the President to afford in similar cases whatever relief is absolutely necessary."[95] These statements by Corbin suggested increasing federal power when dealing with disasters so that the executive branch could bypass Congress and unilaterally apportion aid or deploy the Army. Corbin's ideas were not popular, and it was not until 1950 when Congress passed the Federal Disaster Relief Act of 1950, which gave the president power to declare a state of disaster and deploy the military without congressional approval.[96] Nonetheless, in the cases of Puerto Rico and Galveston, the Army developed a blueprint for disaster relief that prioritized elite Whites, excluded people of color and those of colonial status, determined who was to receive aid, created conditions for that aid, and sought to uphold the racial hierarchy at all costs. These exclusionary actions became hallmarks of American disaster relief and were continually implemented throughout the

twentieth century in such instances as the Great Mississippi Flood of 1927, Hurricane San Felipe in Puerto Rico in 1928, and even as recently as during Hurricane Maria in 2017.[97]

Conclusion

This comparative study of Puerto Rico and Galveston shows how the U.S. Army partnered with local elites in the absence of any guiding doctrine and used disaster relief efforts to completely transform the political, economic, and social structures at the expense of minorities and the poor. Contemporary Progressive Era reform ideas about social welfare, poverty, and race also guided these shifts. The common trends of unequal distribution of aid and conditions attached to the aid led to the delineation of worthy and unworthy poor. Army commanders Davis and Scurry declared martial law in both locations that enabled elites to oversee aid dissemination. This directly facilitated the creation of the Planter Relief Program in Puerto Rico and the Central Relief Committee in Galveston who acted similarly in their relief efforts. In Puerto Rico, the military government gave food, clothing, and medical supplies to the planters who were then supposed to pay the poor to clean their land rather than distributing aid directly to the poor. Some African American wards in Galveston received no aid for months and when they plead their case they were painted as looters who defiled the dead that perished in the storm. These actions by the Army and elites diminished Puerto Ricans' and Black Galvestonians' participation in politics and reconstruction of their communities except for manual labor. Additionally, the Army's execution of disaster relief efforts directly fostered two antidemocratic governments: a colonial regime in Puerto Rico and the first commission-style government in Galveston, which upheld Jim Crow laws and was eventually replicated throughout the United States.

Both operations entrenched the hallmarks of American disaster relief: distributing aid unequally, excluding African Americans and many Puerto Ricans from political participation, and maintaining control of social hierarchy. The implementation of these ideas in the wake of the hurricanes in Puerto Rico and Galveston guided the way those societies developed for better and for worse. These two cases set precedent for how the Army carried out future disaster relief efforts of the twentieth century.

Lessons to Learn

What can current military practitioners take away from the historical cases of disaster relief in Puerto Rico and Galveston? Given the prevalence of climate change and increasing instability in the developing world and Global South, the instances where the military becomes the primary first responder to climate-related disasters will only increase domestically and internationally. While the National Guard is the primary disaster relief response force for domestic contingencies, the active duty component has in the past, and will continue in the future, to respond to disasters abroad. Currently, U.S. military

doctrine concerning disaster relief abroad is *Foreign Humanitarian Assistance*, Joint Publication 3-29. The cases of Puerto Rico and Galveston showcase the vital need for cultural awareness and expertise within the military when planning or executing disaster relief operations. In both cases, the U.S. Army tapped into the existing social hierarchy defined by contemporary racial and cultural attitudes of the time. Davis had very little knowledge of Puerto Rican culture, and thus relied on local White elites to act as the gatekeepers of relief. Scurry in Texas was imbued in the local social hierarchy and again facilitated the same gatekeeping by local White elites. In both cases, the results were disaster relief predicated on maintaining a social hierarchy that ensured relief did not get where it was most needed, or was provided as part of a larger plan to ensure the maintenance of White supremacy over other races, in this case the persistence and continuance of Jim Crow segregation and disenfranchisement of African Americans. Cultural expertise is noted in *Foreign Humanitarian Assistance* as a planning consideration, and a lack thereof is identified as an obstacle to effective civil-military coordination.[98] In Puerto Rico and Galveston, there was very little civil-military coordination; instead, U.S. Army officers simply established committees of local elites and accepted their recommendations for relief policies without much challenge or oversight, a decision that seemed simplest from their perspective, but a decision that ran contrary to the mission of providing relief to those who needed it most.

This matters because in the world today the U.S. military responds to contingencies in countries with differing attitudes and social hierarchies defined by gender, race, religion, ethnicity, and nationality. If there is a lack of cultural awareness and expertise when conducting a disaster relief operation, or if in the interests of expediency disaster relief is apportioned by enabling local elites' total control over who gets access to aid, there will be a pronounced disparity of outcomes in disaster zones where the most in need, or marginalized groups, will be left behind in the interests of maintaining the existing social status quo. Puerto Rico and Galveston serve as key examples of what can happen in this regard, and in some ways, the consequences of decisions made by Davis and Scurry are still being felt today.

Endnotes

2. BGen George W. Davis to Chief Surgeon Maj John Van Hoff, 29 August 1899, Commanding Officer Humaco Porto Rico to Van Hoff, September 1899, and Commanding Officer Manati Porto Rico to Van Hoff, 19 September 1899, appendix L, *Report*

of the Board of Charities of Porto Rico, pt. 1, "Relief Work," in BGen George W. Davis, *Military Government of Porto Rico: Report of the Military Governor of Porto Rico on Civil Affairs From October 18, 1898, to April 30, 1900* (Washington, DC: Government Printing Office, 1902), 702.

3. *Hearings before the Committee on Pacific Islands and Puerto Rico of the United States Senate on Senate Bill 2264, to Provide a Government for the Island of Puerto Rico and for Other Purposes*, 56th Cong. (15–20 January 1900) (statement of BGen George W. Davis).

4. Foraker Act, Pub. L. 56–191, 31 Stat. 77, 56th Cong. (12 April 1900).

5. W. A. McVitie, "Instructions to Chairman of the Various Ward Relief Committees," 10 September 1900, John Focke Papers, MSS #04-0028, Rosenberg Library (hereafter RL), Galveston Texas History Center (hereafter GTHC), Galveston, TX; "General Committee Discussed the Questions and Heard Reports," *Galveston (TX) Daily News*, 12 September 1900, 3; and "Supplies and Medicine," *Galveston (TX) Daily News*, 13 September 1900, 4.

6. Bradley Robert Rice, *Progressive Cities: The Commission Government Movement in America, 1901–1920* (Austin: University of Texas Press, 1977), 110.

7. Gaines M. Foster, *The Demands of Humanity: Army Medical Disaster Relief* (Washington, DC: U.S. Army Center of Military History, 1983), 1517.

8. Joanna L. Dyl, *Seismic City: An Environmental History of San Francisco's 1906 Earthquake* (Seattle: University of Washington Press, 2017); and Christopher M. Church, "The 1928 Hurricane in Florida and the Wider Caribbean," in *Environmental Disaster in Gulf South: Two Centuries of Catastrophe, Risk, and Resilience*, ed. Cindy Ermus (Baton Rouge: Louisiana State University Press, 2018).

9. Gareth Davies, "The Emergence of a National Politics of Disaster, 1865–1900," *Journal of Policy History* 26, no. 3 (2014): 305–26, https://doi.org/10.1017/S0898030614000141; Caroline Grego, "Black Autonomy, Red Cross Recovery, and White Backlash after the Great Sea Island Storm of 1893," *Journal of Southern History* 85, no. 4 (November 2019): 803–40, https://doi.org/10.1353/soh.2019.0244; and Cynthia A. Kierner, *Inventing Disaster: The Culture of Calamity from the Jamestown Colony to the Johnstown Flood* (Chapel Hill: University of North Carolina Press, 2019).

10. Julia F. Irwin, *Making the World Safe: The American Red Cross and a Nation's Humanitarian Awakening* (New York: Oxford University Press, 2013), 3, https://doi.org/10.1093/acprof:osobl/9780199766406.001.0001.

11. For works on San Ciriaco, see Stuart B. Schwartz, "The Hurricane of San Ciriaco: Disaster, Politics and Society in Puerto Rico, 1899–1901," *Hispanic American Historical Review* 72, no. 3 (August 1992): 303–34, https://doi.org/10.2307/2515987. He also includes a chapter in his larger work, *Sea of Storms: A History of Hurricanes in the Greater Caribbean from Columbus to Katrina* (Princeton, NJ: Princeton University Press, 2015). For agricultural and economic perspectives of San Ciriaco, see Laird B. Bergad, *Coffee and the Growth of Agrarian Capitalism in Nineteenth-Century Puerto Rico* (Princeton, NJ: Princeton University Press, 1983); and Cesar J. Ayala and Rafael Bernabe, *Puerto Rico in the American Century: A History Since 1898* (Chapel Hill: University of North Carolina Press, 2007); and Cesar J. Ayala and Laird B. Bergad, *Agrarian Puerto Rico: Reconsidering Rural Economy and Society, 1899–1940* (New York: Cambridge University Press, 2020). For the Galveston storm of 1900, see Erik Larson, *Isaac's Storm: A Man, a Time and the Deadliest Hurricane in History* (New York: Vintage Books, 2000); Patricia Bellis Bixel and Elizabeth Hayes Turner, *Galveston and the 1900 Storm: Catastrophe and Catalyst* (Austin: University of Texas Press, 2000); Casey Edward Green and Shelly Henley Kelly, eds., *Through a Night of Horrors: Voices from the 1900 Galveston Storm* (College Station: Texas A&M University Press, 2002); and Andy Horowitz, "The Complete Story of the Galveston Horror: Trauma, History, and the Great Storm of 1900," in *Environmental Disaster in the Gulf South: Two Centuries of Catastrophe, Risk, and Resilience*, ed. Cindy Ermus (Baton Rouge: Louisiana State University Press, 2018).

12. For works on the Progressives' adoption of expertise, bureaucracy, and professionalism,

see William A. Link, *The Paradox of Southern Progressivism, 1880–1930* (Chapel Hill: University of North Carolina Press, 1992); Daniel T. Rodgers, *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge, MA: Harvard University Press, 1998); and Thomas C. Leonard, *Illiberal Reformers: Race, Eugenics, and American Economics in the Progressive Era* (Princeton, NJ: Princeton University Press, 2016).

13. Marian Moser Jones, *The American Red Cross from Clara Barton to the New Deal* (Baltimore, MD: Johns Hopkins University Press, 2013), 40–42.

14. For more information about the transformation of the American military during the Progressive Era and the "Root reforms," see Ronald J. Barr, *The Progressive Army: US Army Command and Administration, 1870–1914* (New York: St. Martin's Press, 1998); Edward M. Coffman, *The Regulars: The American Army, 1898–1941* (Cambridge, MA: Harvard University Press, 2007), and J. P. Clark, *Preparing for War: The Emergence of the Modern U.S. Army 1815–1917* (Cambridge, MA: Harvard University Press, 2017).

15. "Geneva Convention: Additional Articles," in *U.S. Army Surgeon General's Office Manual for the Medical Department* (Washington, DC: Government Printing Office, 1902), 49, 68, 124.

16. Christina Duffy Ponsa, "When Statehood Was Autonomy," in *Reconsidering the Insular Cases: The Past and Future of the American Empire*, ed. Gerald L. Neuman and Tomiko Brown-Nagin (Cambridge, MA: Harvard University Press, 2015), 23.

17. Edward J. Berbusse, *The United States in Puerto Rico, 1898–1900* (Chapel Hill: University of North Carolina Press, 1966), 56; and David F. Trask, *The War with Spain in 1898* (Lincoln: University of Nebraska Press, 1981), 353.

18. Davis, *Military Government of Porto Rico*, 15.

19. Treaty of Peace between the United States and Spain, 10 December 1898, Article IX.

20. Daniel Immerwahr, *How to Hide an Empire: A History of the Greater United States* (New York: Farrar, Straus, and Giroux, 2019), 7.

21. Merrill E. Gates, *Men of Mark in America: Ideals of American Life told in Biographies of Eminent Living Americans*, vol. 1 (Washington, DC: Men of Mark Publishing, 1905), 277.

22. Gates, *Men of Mark in America*, 278; and Berbusse, *The United States in Puerto Rico, 1898–1900*, 98–99.

23. Davis, "Elections and the Franchise," in *Military Government of Porto Rico*, 115. The formal U.S. spelling of the island at this time was "Porto Rico" and in all quotes it will be spelled this way. Outside of quotes, it will be spelled "Puerto Rico," which became the formal spelling in 1931.

24. Davis, *Military Government of Porto Rico*, 116.

25. Davis, *Military Government of Porto Rico*, 116.

26. See Henry K. Carroll, *Report on the Island of Porto Rico: Its Population, Civil Government, Commerce, Industries, Productions, Roads, Tariff, and Currency* (Washington, DC: Government Printing Office, 1899).

27. Carroll, "Capacity for Self-Government," in *Report on the Island of Porto Rico*, 58.

28. "Relief Measures Adopted," *New York Times*, 12 August 1899, 2.

29. Barbara Tasch Ezratty, *Puerto Rico Changing Flags: An Oral History, 1898–1950* (Charlottesville, VA: Omni Arts, 1986), 5.

30. "Ponce Wrecked by Hurricane," *New York Times*, 12 August 1899, 1.

31. BGen George W. Davis, "The Hurricane of August 8," in *Report of Brigadier General George W. Davis U.S.V. on the Civil Affairs of Puerto Rico, 1899* (Washington, DC: Government Printing Office, 1900), 67.

32. Julian Go, *American Empire and the Politics of Meaning: Elite Political Cultures in the Philippines and Puerto Rico During U.S. Colonialism* (Durham, NC: Duke University Press, 2008), 145.

33. *Peninsulares* were White, born in Spain, and moved to the New World; *criollos* were White but born in the New World; and *jibaros* were poor peasant farmers who were either White or mixed race. Slavery was abolished in Puerto Rico in 1873, so these new freedmen began to work as sharecroppers, similar to freedmen in the American south.

34. Davis, "Hurricane Relief," in *Military Government of Porto Rico*, 217.

35. Chairman of the Central Porto Rican Relief Committee Cornelius N. Bliss, "Report of the of the Central Porto Rican Relief Committee," in Davis, *Military Government of Porto Rico*, 456–57.

36. Davis to Van Hoff, 29 August 1899, Commanding Officer Humaco Porto Rico to Van Hoff, September 1899, and Commanding Officer Manati Porto Rico to Van Hoff, 19 September 1899, appendix L, "Report of the Board of Charities of Porto Rico," pt. 1, "Relief Work," in Davis, *Military Government in Porto Rico*, 702.

37. Maj John Van Hoff, "Instructions to Noncommissioned Officers in Charge of Subposts of the Board of Charities of Porto Rico," 20 September 1899, appendix L, "Report of the Board of Charities of Porto Rico," pt. 1, "Relief Work," in Davis, *Military Government of Porto Rico*, 703. This same phrasing was also expressed in Secretary of War Elihu Root, "Organization of the Civil Government of Porto Rico," *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1900: Report of the Secretary of War and Miscellaneous Reports* (Washington, DC: Government Printing Office, 1901), 37–38.

38. This process of determining worthy poor is discussed at length in Robert H. Wiebe, *The Search for Order, 1877–1920* (New York: Hill & Wang, 1966); and David Huyssen, *Progressive Inequality: Rich and Poor in New York, 1890–1920* (Cambridge, MA: Harvard University Press, 2014), 96.

39. Quartermaster Maj Thomas Cruse to Van Hoff, 18 July 1900, appendix L, "Report of the Board of Charities of Porto Rico," pt. 1, "Relief Work," in Davis, *Military Government of Porto Rico*, 711.

40. SecWar Elihu Root, "Operations in Porto Rico," in *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1899*: *Report of the Secretary of War and Miscellaneous Reports* (Washington, DC: Government Printing Office, 1899), 18.

41. Van Hoff, "Open Letter to the Planters of Porto Rico," 14 September 1899, appendix L, "Report of the Board of Charities of Porto Rico," pt. 1, "Relief Work," in Davis, *Military Government of Porto Rico*, 716.

42. *Usufruct* refers to the legal right to use or benefit from something that belongs to another.

43. Vicente Antonetto to Van Hoff, 15 September 1899, appendix L, "Report of the Board of Charities of Porto Rico," pt. 1, "Relief Work," in Davis, *Military Government of Porto Rico*, 717.

44. Mr. Echevarria from Gurabo to Van Hoff, 9 October, Mr. Amadeo from Barros to Van Hoff, 12 October, Letter from the planters of Ciales to Van Hoff, 18 October, appendix L, "Report of the Board of Charities of Porto Rico," pt. 1, "Relief Work," in Davis, *Military Government of Porto Rico*, 723–26.

45. Lester F. Ward, *Dynamic Sociology or Applied Social Science as Based upon Statical Sociology and the Less Complex Sciences*, vol. 2 (New York: D. Appleton, 1883), 593.

46. SecWar Elihu Root, "Insular Government," in *Report of the Secretary of War and Miscellaneous Reports*, 26. Root could have been influenced by Ward's ideas and phrasing in *Dynamic Sociology*, 596.

47. LtCol J. P. Sanger, "Discussion of Agricultural Tables," in *Report on the Census of Porto Rico, 1899* (Washington, DC: Government Printing Office, 1900), 153; and Go, *American Empire and the Politics of Meaning*, 146.

48. Sanger, "Roads, Railroads, and Agricultural Improvements," in *Report on the Census of Porto Rico, 1899*, 147; and Cesar Ayala, *American Sugar Kingdom: The Plantation Economy of the Spanish Caribbean, 1898–1934* (Chapel Hill: University of North Carolina Press, 1999), 178.

49. Sanger, "Farm Products: Coffee," in *Report on the Census of Puerto, 1899*, 152.

50. Davis, "Agriculture and Its Development," in *Report on the Civil Affairs of Puerto Rico, 1899*, 40.

51. Manuel Zeno-Gandía, *La Charca*, trans. Kal Wagenheim (Maplewood, NJ: Waterfront Press, 1982), 46.

52. Davis, "Agriculture and Its Development," in *Report on the Civil Affairs of Puerto Rico, 1899*, 40.

53.   Hearing, 15–20 January 1900, 40.

54.   Davis, "Future Civil Government," in *Report on the Civil Affairs of Puerto Rico, 1899*, 74.

55.   Ayala, *American Sugar Kingdom*, 34; and April Merleaux, *Sugar and Civilization: American Empire and the Cultural Politics of Sweetness* (Chapel Hill: University of North Carolina Press, 2015), 15–17.

56.   Testimony of John D. Luce, *Hearings before the Committee on Pacific Islands and Puerto Rico*, 204; and Testimony of Charles Armstrong, *Hearings before the Committee on Pacific Islands and Puerto Rico*, 206.

57.   Testimony of Henry T. Oxnard, *Hearings before the Committee on Pacific Islands and Puerto Rico*, 143.

58.   Sam Erman, *Almost Citizens: Puerto Rico, the U.S. Constitution, and Empire* (New York: Cambridge University Press, 2019), 53–55, https://doi.org/10.1017/9781108233866.

59.   *An Act Temporarily to Provide Revenues and a Civil Government for Porto Rico, and for Other Purposes* (Foraker Act), 56th Cong., 1st Sess., in *Compilation of the Acts of Congress, Treaties, and Proclamations Relating to Insular and Military Affairs, from March 4, 1897 to March 3, 1902* (Washington, DC: Government Printing Office, 1904), 88–100.

60.   Ayala, *American Sugar Kingdom*, 106–7.

61.   "Charter and By-Laws of the Galveston Wharf Company 1898," Port of Galveston Papers, MS #79-0012, Box 1, File Folder (FF) 18, RL, GTHC, Galveston, TX.

62.   David G. McComb, *Galveston: A History* (Austin: University of Texas Press, 1986), 47–48.

63.   *Galveston (TX) Daily News*, 11 February 1871, 1.

64.   C. Vann Woodward, *The Strange Career of Jim Crow*, 2d ed. (New York: Oxford University Press, 1966), 25; Link, *The Paradox of Southern Progressivism, 1880–1930*, 139; and Grace Elizabeth Hale, *Making Whiteness: The Culture of Segregation in the South, 1890–1940* (New York: Vintage Books, 1998), 5.

65.   "A Death in Beaumont," *Galveston (TX) Daily News*, 23 September 1897, 1.

66.   Harold M. Hyman, *Oleander Odyssey: The Kempners of Galveston, Texas, 1854–1980s* (College Station: Texas A&M University Press, 1990), 130.

67.   H. S. Cooper, "Something New in Government," *Success Magazine*, February 1908, 83.

68.   Charles Austin Beard, *American City Government: A Survey of Newer Tendencies* (New York: Century, 1912), 93.

69.   George Kibbe Turner, "Galveston: A Business Corporation," *McClure's Magazine*, October 1906, 611.

70.   Hyman, *Oleander Odyssey*, 128.

71.   Col James N. Wheelan, "Report of Col. James N. Wheelan, Twelfth U.S. Cavalry, Commanding the Department of Texas," in *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1901*, vol. 1, pt. 3 (Washington, DC: Government Printing Office, 1901), 257.

72.   "Army Officers Here," *Galveston (TX) Daily News*, 12 September 1900, 1.

73.   Clara Barton, *Report of Miss Clara Barton, President of the American National Red Cross, to the People of the United States*, 1901, Red Cross Records, MSS #05-0007, RL, GTHC, Galveston, TX, 5.

74.   BGen Chambers McKibbin, "The Galveston Catastrophe," *The United States Army and Navy Journal, and Gazette of Regular and Volunteer Forces*, no. 38 (New York: W.C. Church, 1900–1), 91.

75.   Clarence Ousley, ed., *Galveston in Nineteen Hundred: The Authorized and Official Record of the Proud City of the Southwest as It Was before and after the Hurricane of September 8, and a Logical Forecast of Its Future* (Atlanta, GA: William C. Chase Publishing, 1900), 253.

76.   BGen Thomas Scurry, "The Destruction of Galveston," *Collier's Weekly*, 29 September 1900, 3.

77.   Official Dispatch of BGen Thomas Scurry to AdjGen of the U.S. Army, MajGen Hen-

ry Corbin, 19 September 1900, in *The United States Army and Navy Journal, and Gazette of Regular and Volunteer Forces*, 91.

78. Barton, *Report of Miss Clara Barton*, 6.
79. W. A. McVitie, "Notice to All Persons Requiring Food," Galveston Central Relief Committee Records, MSS #24-0149+, RL, GTHC, Galveston, TX.
80. Scurry to Corbin, 19 September 1900, in *The United States Army and Navy Journal, and Gazette of Regular and Volunteer Forces*, 91.
81. W. A. McVitie, "Instructions to Chairman of the Various Ward Relief Committee," 10 September 1900, John Focke Papers, MSS #04-0028, RL, GTHC, Galveston, TX.
82. "General Committee Discussed the Questions and Heard Reports," *Galveston (TX) Daily News*, 12 September 1900, 3; and "Supplies and Medicine," *Galveston (TX) Daily News*, 13 September 1900, 4.
83. "Suggestions and Advice about Conditions of the Poor and Suffering People," *City Times* (Galveston, TX), 29 September 1900, 1.
84. "Central Relief Committee," *City Times* (Galveston, TX), 29 October 1900, 1.
85. For more about this storm, see Caroline Grego, "Black Autonomy, Red Cross Recovery, and White Backlash after the Great Sea Island Storm of 1893," *Journal of Southern History* 85, no 4, (November 2019): 803–40, https://doi.org/10.1353/soh.2019.0244.
86. Barton, *Report of Miss Clara Barton*, 10.
87. John Rufus Gibson to Miss Clara Barton, 11 February 1901, in *Report of Miss Clara Barton,* Red Cross Records, MSS #05-0007, RL, GTHC, Galveston, TX, 12.
88. Lester, *The Great Galveston Disaster*, 61.
89. James Brown to his sisters and cousins, 7 October 1900, James Brown-Winnifred B. Clamp Letters, MSS #85-0013, RL GTHC, Galveston, TX, 6.
90. AdjGen of the U.S. Army, MajGen Henry C. Corbin, "Cyclone at Galveston, Texas," *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1901: Reports of Chiefs of Bureaus* (Washington, DC: Government Printing Office, 1901), 42; McKibbin, "The Galveston Storm," *The United States Army and Navy Journal, and Gazette of Regular and Volunteer Forces*, 55; and "Law and Order: These Are Rapidly Coming Out of Chaos-The System in Vogue," *Galveston (TX) Daily News*, 12 September 1900, 3.
91. Fannie B. Ward, "Report of Mrs. Fannie B. Ward, Special Assistant to Miss Clara Barton," in *Report of Miss Clara Barton*, Red Cross Records, MSS #05-0007, RL, GTHC, Galveston, TX, 50.
92. Telegram from Texas State Senator R. V. Davidson to Valery Hudson, "Senate Confirms Nomination," Kempner Family Scrapbook 1885–1927, Kempner Family Papers MSS # 93-0008, Oversize Box, RL, GTHC, Galveston, TX, 3.
93. Rice, *Progressive Cities*, 110.
94. Corbin, "Cyclone at Galveston, Texas," *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1901*, 42.
95. Corbin, *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1901*, 42.
96. Kevin Rozario, *The Culture of Calamity: Disaster and the Making of Modern America* (Chicago: University of Chicago Press, 2007), 150.
97. Richard M. Mizelle Jr., *Backwater Blues: The Mississippi Flood of 1927 in the African American Imagination* (Minneapolis: University of Minnesota Press, 2014); and *The West Indies Hurricane Disaster, September 1928: Official Report of Relief Work in Porto Rico, the Virgin Islands, and Florida* (Washington, DC: American National Red Cross,1929).
98. *Foreign Humanitarian Assistance*, Joint Publication 3-29 (Washington DC: Department of Defense, 2019), III-19, IV-34.

Nature's Tragic Role
at the Alpine Front during World War I
The Consequences

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Abstract: During the First World War, the front between the Austro-Hungarian Empire and the Italian Kingdom ran across hundreds of kilometers through the Alpine mountain range. In this geographical context, the armies had to survive in a hostile environment that abounded with fierce and relentless natural hazards. Despite the widely recognized relevant role of nature on the Alpine front, works focusing on this topic are still few. This article gathers and organizes the information found in literature concerning the impact of nature on casualties. The article further identifies the mechanisms through which natural hazards inflicted losses and evidences the necessity of quantitative data and analyses for reaching a better-supported and improved quantification and characterization of these victims. Despite the still-limited knowledge about the casualties due to natural hazards, the Alpine front represents a historical case of how the consequences of waging war in inhospitable environments go beyond the difficulties concerning fighting and how nature can cause great damage to armies.

Keywords: First World War, Alpine front, Alps, avalanches, frostbite, casualties, natural hazards

Introduction

World War I (WWI) historiography has been largely focused on the western front and strongly anchored in national frameworks.[1] This remains true despite the importance of conducting comparative and

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international studies and recent efforts in these directions.[2] Similarly, interest in the environmental history of this conflict is still sparse although there have been recent studies in this field.[3]

In this historiographical context, the efforts to understand and characterize WWI have emphasized the particular historical circumstances that set the stage for the war's apocalyptic scenarios; for example, industrial power, technological sophistication, universal male conscription, and Europe's global dominance in part through colonialism. It has almost gone unnoticed, however, that these historical circumstances determined one of the most terrible features of this war: the extension of the battlegrounds to extremely inhospitable environments. Indeed, technological sophistication and the availability of personnel and resources, among other things, allowed armies to wage war in inhospitable environments, such as mountain ranges or arid deserts, in a more stable way than in the past. Technology in particular not only allowed armies to reach remote or inaccessible areas, but it also allowed modifying and adapting these places to their needs.

Many of those who experienced this conflict understood that engaging in war in such environments was unique from a historical point of view. Christopher Thornhill, a British intelligence officer, wrote of the campaign in German East Africa, "[this] campaign was unique of its kind: the first tropical warfare waged under modern conditions of transport and armament."[4] Similarly, the General of Artillery Konrad Krafft von Dellmensingen, commander of the German Alpine Corps, said about the Alpine front that, before WWI, "no one would have ever thought that man would be able to pass the winter on the highest peaks surrounded by glaciers and defended by them, and also to fight up there."[5]

The fronts, campaigns, and theaters of war where nature turned into a terrible foe were many. The Alpine and eastern fronts, as well as the Caucasus and East Africa campaigns, represent some examples. Despite this diffusion of cases and the early recognition of their historical relevance, the history of WWI in extreme environments thus far has rarely been the focus of in-depth studies.[6] From the few studies on this topic, it is still possible to outline some of the varied and critical effects that nature had on persons, armies, and nations involved in extreme environments:

- It determined huge numbers of casualties, often larger than the ones caused by the enemy army;
- It modified the army's planning and organization, not just concerning tactical and strategical issues but also their logistical and medical systems;[7]
- It affected the combat employment of troops (e.g., concerning command, control and coordination) and the development and result of military operations;[8]
- It constrained the living conditions of the people deployed;
- It led to improvements in science and technology;

- It influenced the experience of the soldiers and subsequently the characteristics of the literature about the war;
- It shaped the memory of the war and, in some cases, even the construction of national identity;[9]
- It aroused the interest of the Italian nation for the Alps.[10]

The Alpine front could be considered one of the emblematic cases of WWI in extreme environments. Indeed, many of the hundreds of thousands of people who were deployed at that front fought and wintered in some of the highest and most inhospitable mountains in Europe. Namely, many men found themselves deployed in altitudes more than 3,000 meters above sea level, where no human being had ever set foot. The Alpine front ran across peaks, glaciers, cliffs, and valleys of the southeastern Alps, in large part along the border between Italy and Austria-Hungary. In particular, from May 1915, when Italy declared war on Austria-Hungary, the front ran from the northwestern part of the southern Rhaetian Alps to the southern Julian Prealps (figure 1). From October 1917, after the Italian defeat in the Battle of Caporetto, to November 1918, when the Armistice was signed, the front between these two countries was short-ened. Thus, from the Venetian Prealps, it turned southern into the Venetian Plain. The main armies involved at the Alpine front were the Italian and the Austro-Hungarian armies. Troops of the German Empire, allied with Austria-Hungary, and of the British Empire, France, the United States, the Czechoslo-vak Legion, and Romanian Legion, allied with Italy, also participated in certain moments at the front.[11] The experience undergone at the Alps by some of these forces proved unique and invaluable for future wars.

The literature concerning the Alpine front presents a paradox. Probably every text underlines the central role of nature; still interest in this topic has not been adequately reflected in its historiography, as the studies that focus on this topic are few. In particular, the role of the environment was recognized as dominant in personal testimonies and memoirs that were, to varying degrees, based on individual experiences. These sources include firsthand accounts writ-ten during the war, such as diaries and letters, and works composed after the war, such as biographies, autobiographies, and narrative histories. From person-al testimonies and memoirs and from their consideration and study, almost all the current knowledge on the role of the environment at the Alpine front was gained.[12]

A reason such narratives are our principal source of knowledge for this topic is primarily owing to their availability. WWI is often remembered as the literary war because of the extensive production of texts by its participants. A second reason is the amount and kind of information that these sources contain regarding natural hazards and their impacts. Natural phenomena were part of war participants' everyday lives, and thus they were a main subject considered in detail in the narrative accounts of war. According to Diego Leoni, "no diary left off to record avalanche accidents."[13] A main part of the information recorded

Figure 1. The Alpine front
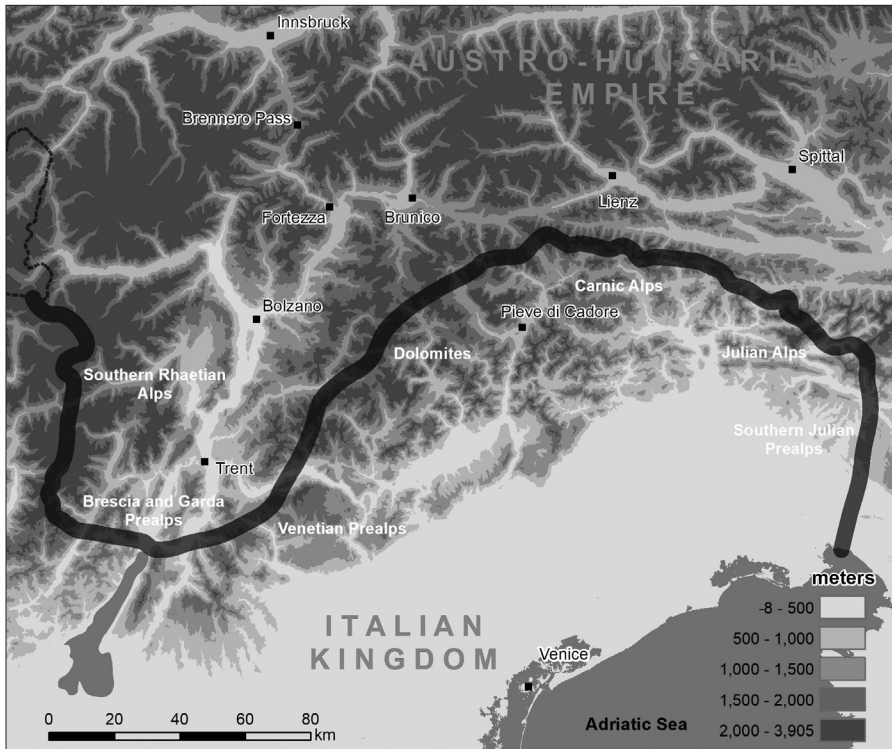
The black line represents approximately the line of the front between Austria-Hungary and Italy from May 1915 to October 1917. During this period, some attacks and retreats moved parts of this front for at most a few tens of kilometers. Thus, this line is a simplified representation of the front. The black dashed line (upper left) shows the border with Switzerland.
Source: courtesy of author.

in these narratives could be referred to as factual, as it concerns specific events, places, or periods. This kind of information, which stems from personal observations or from other unknown sources (such as comrades in arms), is crucial, as it provides a remarkably wide range of aspects concerning the characteristics of natural hazards and their impacts.

An especially relevant study that considered personal testimonies and memoirs to increase the understanding about the relationship between people and nature at this front is the one of Diego Leoni. In this work, the author obtained a comprehensive picture of the characteristics of the Alpine front by focusing on the multiple aspects of the relationship of men and armies—not just with the natural environment but also with the machinery and the animals used there. In particular, Leoni compiled a significant number of personal testimonies and memoirs as well as other kinds of sources, such as songs, poems, and official records from archives. These sources included authors with different backgrounds that conducted different activities during the war, such as sol-

diers, officers, nurses, doctors, workers, etc., for both the Italian and the Austro-Hungarian armies. In this way, Leoni was able to explore the various aspects and moments of the Alpine front that he discussed from many points of view. In turn, this led him to find a more complex and detailed understanding of the front than other authors.[14]

Perhaps one of the biggest merits of Leoni's book is that it tells, probably for the first time in such a well-documented way, that for people at the Alpine front the struggle to survive natural hazards and poor health and living conditions was often on par with surviving the enemy's weapons. From this perspective, Leoni's book represents probably the most advanced knowledge of the role of nature at the Alpine front. However, not focusing only on this, the topic appears often scattered, disorganized, and not clearly illustrated inside a dense book that aims to cover almost every aspect of the life at the front. In this way, considering that this represents one of the few in-depth studies, the current knowledge of this topic remains fragmentary, unclear, and uncertain for many aspects. This is particularly true concerning the causes and consequences of the negative role of nature at the Alpine front.

In continuing the discussion on the role of nature at the Alpine front, this article aims to outline the current knowledge of the negative consequences of waging war in such an inhospitable environment. The focus is put on the most important and immediate consequences, the victims and casualties, and on other impacts that had a repercussion on these. Still, it is important to remember that the negative consequences of nature at the Alpine front could be analyzed from many other perspectives, such as the impact on military tactics and strategy.

The information considered in this article includes and integrates that presented by Leoni.[15] It concerns mainly the armies of Austria-Hungary and Italy. Because the goal of this article is to paint a general picture of the negative consequences of nature, the information of the two armies has been mostly treated indistinctly. The analysis of the collected material is organized around three sections: "The Impacts of Natural Hazards," "How Natural Hazards Contributed to Casualties," and "The Estimations on the Number of Casualties Directly Determined by Natural Hazards."

The Impacts of Natural Hazards

Natural hazards represent a distinguishing feature of mountainous areas. The elements and processes corresponding to the different natural components (e.g., geological, hydrological, meteorological, and vegetational) and the relationship between them determine hostile conditions that often lead to death, injury, and missing persons. For example, meteorological elements (e.g., air temperature, pressure, solar radiation, wind, precipitation, and humidity) and particular meteorological phenomena (e.g., thermal inversion, breezes, and storms) in mountains determine cold and wind chill that lead to frostbites and hypothermia; lightning that electrocutes; wind pressure that blows people off-balance, leading

to falls; and exposure to ultraviolet radiation that leads to ophthalmia (inflammation of the eye).[16]

Avalanches, the sudden and rapid downslope movement of masses of snow, are the most widespread and common hazardous processes in high mountains.[17] At the Alpine front, avalanches and cold were the most devastating natural hazards. The majority of the victims were soldiers, which represented the principal portion of the persons at the front. However, there were also many civilian victims who were working at the front, for example, building roads or as carriers for the supply of higher positions. In addition, there were many animal casualties, including livestock, that occupied a particular role in the transportation of things due to their strength, resistance, and adaptation to cold and mountain topography (e.g., mules, horses, and dogs).

Besides the human and animal victims, nature inflicted damage to material things, particularly weapons, roads, military huts, military storages, field hospitals, hotels, dairies, farms, telegraph and telephone lines, and cableways. Leopold Pistoja, a soldier at the front, provided an example of this ravage caused by avalanches and snow precipitation: "In the winter 1916/1917 we had to shovel the installation of the cableway 30 times and to repair it a dozen times."[18]

The human and animal casualties and damage to the essential infrastructure and natural resources (e.g., forests and water springs) had great repercussion on many aspects concerning the front. From this point of view, nature had great influence on, for example, military planning, the outcome of military operations, and the logistics and health systems of the armies.

How Natural Hazards Contributed to Casualties

Natural hazards were one of the three main causes that determined casualties at the Alpine front, together with military actions and illnesses. In addition, natural hazards also contributed indirectly to many of the casualties in the Alpine front through at least two levels of influence. At the first level, nature significantly influenced the battlefield settings and the health and living conditions, both crucial aspects in the determination of casualties. In turn, at the second level of influence on the number and kind of casualties, alpine nature negatively affected those military aspects specifically responsible for providing adequate health and living conditions: logistics and health systems.

Direct Influence of Natural Hazards on Casualties

Some of the casualties directly determined by mountain environments that are named in literature are casualties due to avalanches, landslides and lightning, those crushed inside huts under the weight of snow, those fallen along the sides of the mountains and into the precipices, and those who suffered from frostbite and hypothermia.[19] Many also were lost and resulted in missing or dead when moving through forests, fog, storms, nighttime, or whiteouts.[20] In the Pasubio Mount, hundreds of carriers were lost in the fog and went missing.[21]

Another direct impact of natural hazards that is important to consider are

psychological damages. In all the fronts of war, these were largely related to military causes and to the health and living conditions of the soldiers. However, at the Alpine front, nature also seemingly represented a major factor of their origin. In literature, there is neither any historical medical report nor specific study that considers this impact of mountain nature. Still there are several sources, for example those cited by Leoni, which mentioned the relevance of nature for the determination of actual mental illnesses and of mental states that could lead to mental illnesses.[22] Fritz Weber mentioned the occurrence of depression and considered that some mental states originated by the environmental context at the front were "very similar to a mental illness."[23] More recently, Alessandro Massignani also considered the presence of depression among those living at the Alpine front due to environmental conditions and Leoni also mentioned the presence of "melancholic depression."[24] Anxiety disorders may have also determined casualties. However, whether doctors and military authorities considered these eventual cases of psychological damages due to the environmental conditions as casualties is unknown.

The last kind of direct casualty by natural hazards to consider, even if its main component was voluntary, are those of self-harm. According to witnesses, many soldiers decided to suffer frostbite to avoid war.[25]

Concerning the distribution of these casualties, Alessio Fornasin, Marco Breschi, and Matteo Manfredini, who studied the mortality among Italian soldiers during WWI, stated that "the soldiers of the corps used in the front line experienced the highest death risks for all causes."[26] The highest death risk at the front line was associated with the fighting and the poor health and living conditions as well as to the frequently hostile environment.[27] Indeed, often the front line corresponded to highly exposed areas to natural hazards, such as places at high elevation characterized by freezing conditions. Conversely, the army rear, which more largely developed in valleys and plains, benefited in general from better environmental conditions.

Other important variables concerning the distribution of the casualties due to natural hazards, besides the spatial location, were the season and the kind of activity that the persons conducted. Carriers of supplies and outdoor workers of any kind, shoveling snow, building roads, etc., were among those with higher exposure to natural hazards. According to Weber, in winter, the casualties of carriers and workers were higher than other groups.[28]

First Level of Indirect Influence of Natural Hazards on Casualties

Nature highly affected two main aspects at a first level of indirect influence on casualties. First were the battle conditions, which in turn led to casualties in military action. This occurred in many ways, most of which can be traced back to the terrain. For example, the slope determined very difficult trafficability conditions for attackers and the exposure of the bedrock determined a deadlier artillery effect.[29] Both of these battle conditions increased the rates of injury.[30]

A second main aspect that was significantly affected by nature were the

health and living conditions of the persons at the front. These conditions were often poor, and therefore they were the basis of the risk associated with each of the main kinds of direct factors determining casualties (i.e., military actions, illnesses, and natural hazards). From this point of view, because it affected health and living conditions, alpine nature influenced the rate of every kind of casualty indirectly but significantly. As an example of this indirect influence on casualties due to illnesses, consider the case of pneumonia, which was diffused at the Alpine front: the incidence of this illness could have been in many instances lower with less crowed shelters, which were in part determined by the rugged topography, and with stronger immune systems of the people, on which the alpine weather had adverse effects. Poor health and living conditions determined by alpine nature also led to casualties due to natural hazards. For example, frostbite was determined by low temperatures, the natural hazard, but also by poor health and living conditions. A document released on 12 December 1915 by the Health Section of the Logistical High Command (*Sezione sanitaria dell'Intendenza generale*) of the Italian Army acknowledged the importance of such conditions that resulted in frostbite. Some of these were at least in part due to alpine nature, such as the nutritional and physical state of the individual, inability to move freely, and the humidity of clothes, mainly footwear.[31]

Leoni provided a detailed description of the health and living conditions at the front.[32] Most of them were also largely present in the other fronts of WWI. These conditions included thirst; hunger; malnutrition; cold; poor personal hygiene; sleep deprivation; strenuous mental and physical efforts; uncomfortable, overcrowded and unhygienic barracks with bad insulation; inadequate burial of dead bodies that determined psychological stress and dangerous hygienic conditions; and the presence of infectious illnesses and rats, lice, fleas, and other parasites and disease vectors. These conditions had a wide variation in time and space inside the Alpine front. The worst was likely suffered by soldiers at the front line and by the Russian and Serbian prisoners of the Austro-Hungarian Army, who were mainly used as workers and carriers.[33]

Soldiers also had to face terrible conditions during military actions, which prevented almost any protection from weather conditions and required great physical exertion. For example, this was the case of an attack to Mount Cardinal launched by a battalion in the summer 1916. Second Lieutenant Angelo Maranesi reported that more than the violence of the battle, it was the effort and the weather that broke the physical resistance of the men. Indeed, the battalion registered in 10 days, in addition to 10 deaths and 50 injured, about 267 sick due to the terrible health and living conditions.[34]

Nature contributed in many ways to the poor health and living conditions present at the Alpine front. One can assume that in general this effect was more adverse on the positions along the sides of the mountains and on their peaks, where the environment was more hostile, rather than in the valleys. The impact of nature on the health and living conditions included:

- Temperature, humidity, wind, slope direction, clouds, and vegetation, which contributed to excess cold and heat;
- The limitations of resources, which contributed to many deprivations.[35] In particular, the insufficient amount of water springs represented a serious problem for drinking, hygienic practices, cooking, and performing some works in many parts of the front.[36] In addition to its limited presence, many of the water sources became polluted during the war, due to the putrefaction of dead bodies and the presence of human waste and of toxic chemical substances that resulted from explosions.[37] Particularly during the summer, when most of the snow had melted, the lack of water was considered a main cause of casualties in some cases. According to Heinz Von Lichem, there were deaths from dehydration in Monte Zugna and in the Pasubio Mount;[38]
- Rugged topography, which limited the potential space for building. This contributed to overcrowded camps and barracks;
- Avalanches and other natural phenomena, which produced cold or fear of an eventual imminent accident, contributing to sleep deprivation;
- Taxing physical and mental activities. Moving required significant exertion due to, for example, slopes, snow, wind, and the fact that people had to carry heavy weight because, mainly in high and rugged places, a large part of the transport of materials for living and fighting had to be done by them.[39] Digging trenches, caves, and tunnels in rock and ice, shoveling snow continuously during the cold season, restoring weapons, telephone and telegraph lines, cableways, and other infrastructure frequently destroyed by weather and avalanches were some of the many other ways through which alpine nature required huge exertions;[40]
- Moods, feelings, and mental states were affected negatively due to the alpine climate. Concerning this impact of the environment, Weber referred to restlessness, agitation, desperation, oppression, anxiety, upheaval of the nervous system, and apathy among the persons at the front.[41] In particular, topography and weather contributed to periods of social isolation, precluding contacts with different or larger groups of persons and with civil society and relatives. This happened, for example, when the movement between different positions was impossible or when letters and news did not reach certain sectors of the front. These living conditions highly affected the troops sense of sadness, loneliness, and melancholy. Similar outcomes also created long periods of inactivity and restriction of move-

ments caused by inclement weather. Moreover, the frequent natural hazards represented a continuous threat that "upset the nervous system" and increased the sense of precariousness and uncertainty.[42] These conditions particularly affected those who were not used to mountain weather.

The first consequence of the presence of such health and living conditions was a varied range of largely widespread and enduring psychological and physical disorders and states present along the entire front. After his study of literature, Leoni registered among these disorders and states: weight loss, cough, exhaustion, depression of the immune system, dereliction, desolation, despair, drowsiness, and misery.[43]

These psychological and physical disorders and states could disappear at some point or could develop into casualties caused by military actions and natural hazards. Another possible line of development entailed that these disorders and states were actually signs and symptoms of illnesses and therefore led to casualties of this kind. Many of the illnesses at the Alpine front were present also at other ones (e.g., malaria, typhus, meningitis, tuberculosis, scabies, ringworm, diphtheria, enteritis, cholera, and scurvy). The health and living conditions determined by the environment played an important role on their diffusion. This role was probably even more important and specific in the diffusion of the illnesses that were prevalent at the Alpine front, including rheumatic pathologies and diseases that were related to the respiratory system and of the illnesses that were characteristic of this front—a kind of cardiac pathology and the nephritis caused by cold.[44]

Second Level of Indirect Influence of Natural Hazards on Casualties
Health and living conditions were determined not only by nature but also by human factors. A crucial aspect affecting the health and living conditions in the Alpine front was the logistic system of the armies.[45] In general, logistics was more inadequate in the Italian Army than in the Austro-Hungarian, particularly at the beginning of the conflict.[46] Still, it represented a great problem for everyone (including the German Alpine Corps while operating at the front from May to October 1915).[47] The deficiencies of the logistics reflected not just on the health and living conditions of the people but also, crucially, on the great discrepancies between the aims and efforts of the armies and the results of the military operations that they conducted.

As for the health and living conditions, the efficiency of the logistic system was also affected by both human and natural factors. The human ones regarded the intrinsic malfunction of the armies and states and the factual or potential offenses of the enemy. Natural elements and processes represented difficulties such as:

- Slope, vegetation, kind of surface of the ground, presence of ice on the ground, hydrography, and weather created diffi-

culties moving.[48] Indeed, it was reported that some positions reached 25 days of total isolation and some others more than a month.[49] The impact of nature on transport occurred at almost every step of the supply chain in the Alps, from the snow that stopped the trains circulating along the valleys to the avalanches that engulfed the carriers and struck cableways supplying the higher positions. Weber reported on streets and paths that were impassable for seven months;[50]

- Rugged topography, landslides, avalanches, and hydrography, which caused difficulties and lack of potential space for construction. This contributed to a shortage of adequate roads, paths, and storehouses. The difficulty constructing roads was represented, for example, by the need of the armies to build bridges over streams or dig tunnels inside mountains but also by the low temperatures and avalanches that workers had to suffer;
- Limited resources and hostile weather, which contributed to a high demand and strong dependency of the armies on the supplies coming from the plains. This led often to an overload of the logistics system.

The larger negative effect of nature on these aspects of the logistic system were present in general in the last part of the logistics chain, namely at the higher locations. There, in general, the topography was more rugged and the atmospheric conditions worse. The support provided by technology, such as through the creation of numerous cableways, was essential but still rarely allowed to completely compensate those disadvantages for the logistic system at the higher areas.

Another issue that had great impact on the health and living conditions of the persons at the front was the health system of the armies. This was important for the armies because, beyond the health and living conditions, it also directly influenced the incidence of the direct factors determining casualties (i.e., military actions, illnesses, and natural hazards) in a substantial way. Leoni provided a good description of the health systems of the armies and the great difficulties that caused disadvantages.[51] Among these difficulties, natural features of the mountain environment played an important role in the following ways:

- Slope, vegetation, kind of surface, presence of ice on the ground, hydrography, and weather, which contributed enormously to the difficulty to move. This led to the inefficiency of the transportation of the injured, materials, and personnel by making them extremely arduous and slow. Moreover, the difficulty moving, combined with the dangerous environmental conditions at high altitudes, required specialized personnel and physical suitability.[52]
- Rugged topography, landslides, avalanches, and hydrography,

which contributed to an insufficient presence of infrastructure due to the lack of potential space and the difficulty to build it. In particular, the inadequate amount, quality, size, and location of health facilities resulted mainly in a fragmentation of the means and personnel and in a marked inadequacy of the health service at high altitudes.

As for logistics, in general, the negative effects of nature increased with the altitude due to the generally more rugged topography and the worse atmospheric conditions. The main problem at higher elevations was the inadequate amount and quality of the health facilities and personnel, which entailed the development of a complex system greatly dependent on the facilities and personnel at lower altitudes. In this way, the entire health system in general and in particular injured people were doomed to rely largely on the very difficult and slow transportation. This circumstance was particularly challenging considering that the front line of each army, namely, the place where the highest concentration of casualties occurred, often was located at high altitudes.[53] Moreover, in the case of front lines at high altitudes, the enemy created severe difficulties to provide adequate first aid for injured people concurrently with the harsh environment.[54]

The Estimations on the Number of Casualties Directly Determined by Natural Hazards

Documenting war casualties is a general problem for statisticians and historians. In Italy, for example, the discussion on the total number of casualties during WWI is still ongoing. Recently, historians reached new counts on the total number of casualties, including the death of prisoners, death due to influenza, and disability.[55]

In the literature of the war, there are some estimations on the total number of casualties in the Alpine front due to environmental factors (table 1). These estimations present four characteristics: 1) focus on avalanches and disregard other natural hazards; 2) tend to be for both armies together; 3) differ greatly with a wide range between the lowest and highest values; and 4) are not based on any published research.

Many historians and novelists repeated the estimations that were published by other authors or did not indicate the sources at the origin of the estimations that they proposed clearly. Walther Flaig and Lichem based their estimations on the reports of commanders that survived the war and on the testimony of soldiers.[56] However, they neither provided any detailed information of their research methodology nor on their sources.

Some sources, such as the Commission for the History of the Alpine Troops and Lichem, wanting to highlight the central importance of natural hazards in the determination of casualties, considered nature-related casualties in relation to those due to military actions and to the total amount of the casualties at the

Table 1. Casualty estimations due to natural hazards at the Alpine front within existing literature

Author, year	Number of casualties	Area	Period
Weber, 1935	Approximately 20,000 killed by avalanches	Whole front	1917
Flaig, 1955	A minimum of 40,000–50,000 killed by avalanches. The average between different estimations is 60,000 killed by avalanches	Whole front	Entire war
Fraser, 1970 (these estimations were proposed also by Roch, 1980)	40,000–80,000 killed by avalanches	Whole front	Entire war
Lichem, 1974 (these estimations were proposed also by Angetter, 1995)	At least 60,000 killed by avalanches. Around 100,000 killed by all the factors related to mountainous environment	Whole front	Entire war
E. Capello, 1968	30,000 killed by avalanches	Whole front	Entire war
Hämmerle, 2014	At least 10,000 killed by avalanches	Dolomites	Entire war

Sources: Weber, Alpenkrieg*; Flaig, Lawinen; Colon Fraser,* L'enigma Delle Valanghe *(Bologna, Italy: Zanichelli, 1970); Andrè Roch,* Neve e Valanghe: Struttura e Origine Delle Valanghe, Le Opere Di Soccorso*; Tecnologia Della Protezione Contro Le Valanghe (Milan, Italy: CAI, 1980); Lichem,* Der Einsame Krieg*; Daniela Claudia Angetter, "Dem Tod Geweiht Und Doch Gerettet: Die Sanitätsversorgung Am Isonzo Und in Den Dolomiten 1915–1918," in* Beiträge Zur Neueren Geschichte Österreichs*, ed. Bertrand-Michael Buchmann (Vienna: Lang, 1995), 258; Elena Capello, "Atlante Delle Valanghe Delle Alpi Orientali Italiane. Nel Periodo 1915–1919,"* Pubblicazioni Dell'Istituto Di Geografia Alpina *10, no. 4 (1968); and Christa Hämmerle, "Eroi Sacrificati? Soldati Austro-Ungarici Sul Fronte Sud," in* La Guerra Italo-Austriaca (1915–1918)*, ed. Nicola Labanca and Oswald Überegger (Bologna, Italy: Il Mulino, 2014).*

Alpine front. However, the absence of any data based on a systematic method casts doubts on these findings. For instance, the Commission for the History of the Alpine Troops stated that during the winter of 1915–16, avalanches caused casualties on both the Austro-Hungarian and the Italian armies that in some

cases were equal to the average of those that did not happen in battles due to the winter stasis.[57] According to Lichem, just one-third of the total amount of casualties in the Alpine front were due to the fights against the enemy—the rest were caused by the alpine environment.[58]

In literature, the only estimation of casualties that considered natural hazards other than avalanches is Lichem.[59] He estimated 100,000 dead on the Alpine front due to all the factors linked to the mountainous environment. The most significant absence of any estimation concerns the casualties due to hypothermia, frostbite, and deprivation caused by cold and humidity. Many publications on the Alpine front referred to the relevant number of cases of hypothermia and frostbite, although, as Alessandro Massignani noted, these have been rarely studied.[60] Leoni gathered some of these references from personal testimonies and memoirs, giving clear proof that frostbite at the Alpine front was abundant throughout the conflict.[61]

In 1915, 60 percent of the Italian soldiers in some sectors were moved away from the front due to frostbite.[62] Those sectors included Mount Adamello, where hundreds of frostbite cases per day in November 1915 occurred according to Italian lieutenant Gualtiero Castellini.[63] One year after the beginning of the conflict, frostbite was still a major problem. During the spring of 1916, Austria-Hungary launched a major attack (the Trentino Offensive, 15 May–10 June 1916) that had a relevant impact on the number of frostbites. For example, the Italian 1st Army had 2,868 cases of frostbite between May and July 1916 and 1,411 of these required hospitalization.[64] On 19 November 1916, the chief of staff of the Italian Army, General Luigi Cadorna, wrote to the chief of the Logistical High Command: "The number of cases of frostbite occurred already at this point of the season is a certain indicator that the measures devised and adopted by the Health Office of this High Command are at least inadequate to the real needs."[65] During the winter of 1916–17, Weber reported that at the Pasubio Mount a new fatality occurred daily mainly as a result of hypothermia or of falling in the crevices of the mountain.[66] On 28 February 1917, Lieutenant Felix Hecht noted in his diary: "almost one third of the company suffers from frostbites and coughs tremendously."[67] In November 1917, a British liaison officer on Mount Grappa reported that the men in trenches were weeping—some with ice on their faces—and that "the conducting officer said that three or four of them were freezing to death nightly."[68]

Discussion

Almost all the current knowledge on the negative consequences of alpine nature during WWI relies on personal testimonies and memoirs. An advantage of this kind of sources is that it facilitates an effective comprehension of the tragedy represented by these consequences, mainly due to the narrative form and the emotional and fairly detailed information contained. On the contrary, its disadvantage is represented by the difficulty to collect, analyze, and generalize this information, which is scattered across a vast number of sources, is rarely treated

specifically inside the texts, concerns locally and temporally limited events, is extremely heterogeneous, is sometimes imprecise, and is difficult to distinguish between its objectiveness and subjectiveness.

Leoni's work is unique among the publications on the Alpine front, extracting relevant information on the impact of nature from personal testimonies and memoirs.[69] The amount of this information as well as the selection and contextualization that he presented allowed him to generalize about the features of the front. Occasionally, Leoni supported the information taken from personal testimonies and memoirs with statistics and information for large military units and areas of the front, which he extracted from historical official reports. Although it is important to note that Leoni represents one of the few works that considered historical material with statistics and information for large parts of the front for characterizing the impact of nature, it appears clear that a greater use of this information would be beneficial for the study of this topic. In particular, more quantitative information on casualties, living conditions, and the health and logistics systems would support the generalizations from the testimonies better.

In spite of this limit, the remarkable work of Leoni represents the most advanced, complete, and detailed knowledge of the relationship between men and armies with nature at the Alpine front.[70] Thus, Leoni's work was a main reference on this topic in this article. In particular, this article offers a general idea of the influences of alpine hazards on the history of the front and a model for understanding how nature contributed to casualties. Regarding the ways nature contributed to casualties, many authors recognized the importance of the indirect impact of natural hazards on casualties.[71] However, focusing on and developing this perspective led to a clearer identification of the mechanisms through which natural hazards acted. In particular, the indirect contribution of nature to casualties was based on its role in the determination of the battlefield settings, the health and living conditions, and the logistic and health systems. In addition, this article exposed the limited knowledge and well-supported information in the existing literature about the psychological damages that nature inflicted and the related casualties.

Another weak aspect in the current knowledge on the negative impacts of nature at the Alpine front concerns the distribution of these impacts regarding different variables, such as time, space, kind of impact, type of victims, etc. Fornasin, Breschi, and Manfredini hold that, in the Italian Army, "the soldiers of the corps used in the front line experienced the highest death risks for all causes."[72] As the front line represented often harsher topography and weather compared to the rear, it is highly possible that nature together with the proximity of the enemy had a major influence on higher death rates at the front lines. In addition, according to Weber, the casualties of carriers and workers were higher than other groups in winter.[73] This differential casualty rate according to victim's activities and the season of the year is ascribed at least in large part to the extreme weather.

One of the greatest uncertainties in the literature about the consequences of nature's role at the Alpine front concerns the quantity of casualties determined by natural hazards. The earlier discussion covered the inadequacies of the estimations in literature about the numbers of casualties given that these estimations focused on avalanches and disregarded other natural hazards, considered both armies together, differed greatly between them, and were not based on published research.

These problems in the current knowledge about the number of casualties and the others, mentioned above, about other aspects of the consequences of nature's role at the Alpine front may have a similar reason: the almost complete lack of use of historical statistics and quantitative information in the literature that have regarded this topic. During the war, relevant quantitative information on nature and its negative impacts could be produced only by the armies, which controlled and monitored all aspects of the war. The official WWI histories of Austria and Italy provide some evidence of this. Indeed, sparse information about numbers of casualties due to natural hazards concerning specific periods, parts of the front, or operational formations are available in these works.[74] A clear example that even the largest operational formations kept accounts of avalanche victims and reported them comes from a telegram of General Cadorna on 13 March 1916, which says "avalanches rage so much that for the day 11 [11 March 1916], over 700 victims are counted although it is still missing data concerning the 2nd Army."[75]

The Italian Army's High Command included the Meteorological Section, which was responsible for the study of the weather and its relationships with the needs of the army. This office collected thousands of reports on avalanches that occurred at the front.[76] However, the analysis of these reports was never published and the reports themselves are not publicly available. Besides these reports, other information produced by this section was published during the war, mainly for the prevention and management of the risk associated with these hazards. Carlo Capello studied these publications of the Meteorological Section of the Italian Army.[77]

In conclusion, considering the lack of quantitative information, the estimations on the number of casualties currently present in the literature were the only way to fill the gap between the narratives, which have rightly emphasized the relevance of the negative consequences of natural hazards and the necessity of numbers for characterizing these consequences better. Nevertheless, authors cannot continue to rely solely on estimations that are not supported by any published research. This article reaffirms the relevance of the topic and the necessity of quantitative data and analyses concerning large parts of the front. In particular, historical or current statistics would be essential for supporting the generalizations obtained so far from the personal testimonies and memoirs. Moreover, quantitative data and analyses are needed to conduct a better characterization of the impacts of nature on the front. Specifically, this need concerns: 1) the magnitude of these impacts particularly the number of casualties, 2) the

distribution of these impacts according to different variables (e.g., time, space, kind of impact, kind of victims, etc.), and 3) a comparison of these impacts between the Italian and the Austro-Hungarian armies.

It appears clear in this article, even with the current limitations in the knowledge of casualties caused by natural hazards, that the relevance of nature in warfare can exceed its constraining effect on planning and applying tactics and strategies. In extreme environments such as that of the Alpine front, the challenge of fighting due to the difficulties to move and to communicate, for example, could become secondary when considering nature's injurious potential.

Endnotes

1. Ross Anderson, *The Forgotten Front: The East African Campaign, 1914–1918* (Stroud, UK: Tempus Publishing, 2004); Altay Atlı, "Baptism by Snow: The Ottoman Experience of Winter Warfare During the First World War," in *Other Fronts, Other Wars?*, ed. Joachim Bürgschwentner, Matthias Egger, and Gunda Barth-Scalmani (Leiden, Netherlands: Brill, 2014), https://doi.org/10.1163/9789004279513_005; Gunda Barth-Scalmani, "The Memory Landscape of the South-Western Front: Cultural Legacy, Promotion of Tourism, or European Heritage?," in *Other Fronts, Other Wars?*, https://doi.org/10.1163/9789004279513_022; R. J. B. Bosworth, "Review of *The Italian Army and the First World War*, by John Gooch," *English Historical Review* 130, no. 547 (2015): 1591–92, https://doi.org/10.1093/ehr/cev277; Joachim Bürgschwentner, Matthias Egger, and Gunda Barth-Scalmani, "Introduction: Approaching the Centenary, 1914–2014," in *Other Fronts, Other Wars?*, https://doi.org/https://doi.org/10.1163/9789004279513_002; John Gooch, *The Italian Army and the First World War* (Cambridge, UK: Cambridge University Press, 2014), https://doi.org/10.1017/CBO9781139042956; Jörn Leonhard, *Die Büchse Der Pandora: Geschichte Des Ersten Weltkriegs* (Munich, Germany: Beck, 2014); and Olivier Compagnon and Pierre Purseigle, "Geographies of Mobilization and Territories of Belligerence during the First World War," *Annales. Histoire, Sciences Sociales* (English ed.) 71, no. 1 (2016): 37–60, https://doi.org/10.1017/S2398568217000024.
2. Hew Strachan, "Towards a Comparative History of World War I. Some Reflexions," *Militaergeschichtliche Zeitschrift* 67, no. 2 (2008): 339–44, https://doi.org/10.1524/mgzs.2008.67.2.339. Also see, for example, Bürgschwentner, Egger, and Barth-Scalmani, "Introduction"; Hew Strachan, ed., *The Oxford Illustrated History of the First World War* (Oxford, UK: Oxford University Press, 2014); and Richard P. Tucker et al., eds., *Environmental Histories of the First World War* (Cambridge, UK: Cambridge University Press, 2018), https://doi.org/10.1017/9781108554237.
3. Tait Keller, "Mobilizing Nature for the First World War," in *Environmental Histories of the First World War*, 1–16, https://doi.org/10.1017/9781108554237.001; Shawn M. Reagin, "The First World War on the Periphery: The Effect of the Environment on British Soldiers in German East Africa, 1914–1918," *Scientia Militaria* 46, no. 2 (January 2018), https://doi.org/10.5787/46-2-1203. Also, see for example, Bürgschwentner, Egger, and Barth-Scalmani, eds., *Other Fronts, Other Wars?*, https://doi.org/10.1163/9789004279513; Selena Daly, Martina Salvante, and Vanda Wilcox, eds., *Landscapes of the First World War* (Cham, Switzerland: Springer International, 2018), https://doi.org/10.1007/978-3-319-89411-9; Frank Jacob and Sarah K. Danielsson, eds., *War and Geography* (Leiden, Netherlands: Brill, 2017), https://doi.org/10.30965/9783657783779; and Tucker et al., *Environmental History of the First World War*.
4. Reagin, "The First World War on the Periphery," 35.
5. Gunther Langes, *Guerra Fra Rocce e Ghiacci: La Guerra Mondiale 1914–1918 in Alta Montagna* (Bolzano, Italy: Athesia, 1981), 14.

6. There are a few exceptions, including Reagin, "The First World War on the Periphery," who focused on the East Africa campaign; Atlı, "Baptism by Snow," who concentrated on the Caucasian and Galician front; and Diego Leoni, *La Guerra Verticale: Uomini, Animali e Macchine Sul Fronte Di Montagna 1915–1918* (Torino, Italy: Einaudi Storia, 2015), who studied the Alpine front.

7. Mauricio Nicolas Vergara, Aldino Bondesan, and Francesco Ferrarese, "GIS Analysis of the Trafficability Determined by Slope in the Eastern Tyrol Front (WWI, Eastern Alps): A Military History Reading," *Cartography and Geographic Information Science* 45, no. 6 (2018): 477–94, https://doi.org/10.1080/15230406.2017.1399828; and Mauricio Nicolas Vergara and Aldino Bondesan, "The Cadore Offensive: Theoretical Military Geography Considerations," in *Military Geoscience: Bridging History to Current Operations*, ed. Peter L. Guth (Cham, Switzerland: Springer, 2020), 67–83, https://doi.org/https://doi.org/10.1007/978-3-030-32173-4.

8. Vergara, Bondesan, and Ferrarese, "GIS Analysis of the Trafficability Determined by Slope in the Eastern Tyrol Front (WWI, Eastern Alps)"; Mauricio Nicolas Vergara et al., "The Geomorphological Constraints of the Italian/Austro-Hungarian Front in the Dolomites during the First World War," *Geografia Fisica e Dinamica Quaternaria* 43, no. 1 (2020): 167–90.

9. Marco Armiero, *Le Montagne Della Patria. Natura e Nazione Nella Storia d'Italia. Secoli XIX e XX* (Torino, Italy: Einaudi Storia, 2013).

10. Armiero, *Le Montagne Della Patria.*

11. *American Armies and Battlefields in Europe* (Washington, DC: U.S. Army Center of Military History, 1992).

12. See, for example, Leoni, *La Guerra Verticale*; and Heinz Von Lichem, *Guerra in Solitudine: Prima Documentazione Complessiva Della Guerra in Montagna 1915–1918 Dalle Alpi Giulie Al Passo Dello Stelvio* (Bolzano, Italy: Athesia, 1996).

13. Leoni, *La Guerra Verticale.*

14. Leoni, *La Guerra Verticale.*

15. Leoni, *La Guerra Verticale.*

16. Stefano Micheletti, Gianni Marigo, and Renata Pelosini, *Meteorologia Alpina* (Trento, Italy: AINEVA, 2010).

17. James S. Gardner, Robert W. Rhoades, and Christoph Stadel, "People in the Mountains," in *Mountain Geography: Physical and Human Dimensions*, ed. Martin F. Price et al. (Berkeley: University of California Press, 2013), https://doi.org/10.1525/9780520956971-014.

18. See Heinz Von Lichem, *La Guerra in Montagna, 1915–1918*, vol. 1 (Bolzano, Italy: Athesia, 1991).

19. Antonio Berti, *Guerra in Ampezzo e Cadore, 1915–1917* (Milan, Italy: Mursia, 1996); Leoni, *La Guerra Verticale*; Heinz Von Lichem, *Der Einsame Krieg: Erste Gesamtdokumentation Des Gebirgskrieges 1915–1918 von Den Julischen Alpen Bis Zum Stilfser Joch* (Munich, Germany: Athesia, 1974); Lichem, *La Guerra in Montagna*; Alessandro Massignani, "La Guerra Combattuta in Trentino," in *Annali, n. 17–22, 2009–2014* (Rovereto, Italy: Museo storico italiano della guerra, 2015), 418; and Fritz Weber, *Tappe Della Disfatta* (Milan, Italy: Mursia, 1965).

20. See, for example, Walther Schaumann, *La Grande Guerra 1915–1918. Storia e Itinerari. Dolomiti Occidentali: Val Di Fanes, Tofane, Marmolada, Falzarego, Col Di Lana, Passo S. Pellegrino*, vol. 2 (Bassano del Grappa, Italy: Ghedina & Tassotti, 1984).

21. Weber, *Tappe Della Disfatta.*

22. Leoni, *La Guerra Verticale.*

23. Weber, *Tappe Della Disfatta*, 92.

24. Massignani, "La Guerra Combattuta in Trentino"; and Leoni, *La Guerra Verticale*, 171.

25. Leoni, *La Guerra Verticale.*

26. Alessio Fornasin, Marco Breschi, and Matteo Manfredini, "Deaths and Survivors in War: The Italian Soldiers in WWI," *Demographic Research* 40, no. 22 (2019): 599–626, https://doi.org/10.4054/DemRes.2019.40.22.

27. Fornasin, Breschi, and Manfredini, "Deaths and Survivors in War."

28. Weber, *Tappe Della Disfatta*.
29. Vergara, Bondesan, and Ferrarese, "GIS Analysis of the Trafficability Determined by Slope in the Eastern Tyrol Front (WWI, Eastern Alps)."
30. Leoni, *La Guerra Verticale*. Chapter 7 provides more details of the importance of natural features for battles at the Alpine front.
31. Direzione generale dei servizi logistici ed amministrativi Ministero della guerra, "Provvedimenti per La Campagna Invernale 1915–1916" (Rome: Ufficio Storico dello Stato Maggiore dell'Esercito, n.d.), F1/183/6. See Leoni, *La Guerra Verticale*, 161.
32. Leoni, *La Guerra Verticale*.
33. See Fornasin, Breschi, and Manfredini, "Deaths and Survivors in War"; and Leoni, *La Guerra Verticale*.
34. Angelo Maranesi, "Ricordi Di Guerra: Con Gli Alpini in Valsugana (Dicembre 1915–Giugno 1916)," *Italia Augusta*, July 1927. See Leoni, *La Guerra Verticale*, 188. It can be deduced from the source that the deaths and casualties were due to military actions, while the sick were likely due to the vulnerability of the troops to weather.
35. Luigi Nava, *Operazioni Militari Della 4. Armata Nei Primi Quattro Mesi Della Campagna Di Guerra 1915* (Cherasco, Italy: Raselli, 1922); and Leoni, *La Guerra Verticale*.
36. Leoni, *La Guerra Verticale*.
37. Leoni, *La Guerra Verticale*.
38. Heinz Von Lichem, *La Guerra in Montagna, 1915–1918: Il Fronte Trentino e Dolomitico Da Rovereto a Passo Monte Croce Comelico*, vol. 2 (Bolzano, Italy: Athesia, 1993).
39. Leoni, *La Guerra Verticale*.
40. For more detailed information about these efforts see, for example, Leoni, *La Guerra Verticale*, 128, 142.
41. Fritz Weber, *Alpenkrieg* (Vienna: Köllisch, 1935); and Weber, *Tappe Della Disfatta*.
42. Weber, *Tappe Della Disfatta*.
43. Leoni, *La Guerra Verticale*.
44. See Leoni, *La Guerra Verticale*, 189, for more information about illnesses characteristic of the Alpine front.
45. For a good description of the logistic system of the armies and its relevance, see Leoni, *La Guerra Verticale*, chap. 8.
46. Leoni, *La Guerra Verticale*.
47. Leoni, *La Guerra Verticale*.
48. For more information, see Leoni, *La Guerra Verticale*; and Weber, *Alpenkrieg*.
49. Berti, *Guerra in Ampezzo e Cadore*; and Luigi Cadorna, "La Seconda Campagna Invernale" (Rome: Ufficio Storico dello Stato Maggiore dell'Esercito, 1917), Fondo L-3, Busta 42.
50. Weber, *Tappe Della Disfatta*.
51. Leoni, *La Guerra Verticale*.
52. Leoni, *La Guerra Verticale*.
53. Fornasin, Breschi, and Manfredini, "Deaths and Survivors in War."
54. Leoni, *La Guerra Verticale*.
55. Alessio Fornasin, "The Italian Army's Losses in the First World War," *Population* 72, no. 1 (2017), https://doi.org/10.3917/popu.1701.0039; P. Scolè, "I Morti," in *Dizionario Storico Della Prima Guerra Mondiale*, ed. Nicola Labanca (Rome-Bari, Italy: Laterza, 2014); Alessio Fornasin, "Quanti Soldati Italiani Morirono in Prigionia Nella Prima Guerra Mondiale?," *Contemporanea* 21, no. 2 (2018): 223–39; Alessio Fornasin, Marco Breschi, and Matteo Manfredini, "Spanish Flu in Italy: New Data, New Questions," *Infezioni in Medicina* 26, no. 1 (2018); and Fabiano Quagliaroli, "Le Pensioni per Gli Invalidi Della Prima Guerra Mondiale," *Contemporanea* 19, no. 1 (2016).
56. Walther Flaig, *Lawinen: Abenteuer Und Erfahrung, Erlebnis Und Lehre*, 2d ed. (Wiesbaden, Germany: Brockhaus, 1955); and Lichem, *La Guerra in Montagna, 1915–1918*.
57. Emilio Faldella, ed., *Storia Delle Truppe Alpine* (Milan, Italy: Cavalotti Editori, 1972).
58. Lichem, *La Guerra in Montagna*.
59. Lichem, *Der Einsame Krieg*.

60.   Massignani, "La Guerra Combattuta in Trentino."

61.   Leoni, *La Guerra Verticale*, chap. 9.

62.   "Relazione Del Corpo Sanitario" (Rome: Ufficio storico dello Stato maggiore dell'esercito, n.d), B I, 40–42. See Leoni, *La Guerra Verticale*.

63.   Gualtiero Castellini, *Tre Anni Di Guerra. Diario* (Milan, Italy: Treves, 1919); and Gualtiero Castellini, *Lettere, 1915–1918* (Milan, Italy: Treves, 1921). See Leoni, *La Guerra Verticale*.

64.   Direzione di sanità I Armata, "Norme Contro i Congelamenti," Fondo E-7, Carteggio sanitario della Prima guerra mondiale (1914–1927), b 44, fascc. 398–99 (Rome: Ufficio storico dello Stato maggiore dell'esercito, 1916). See Leoni, *La Guerra Verticale*.

65.   Ufficio storico Stato maggiore dell'esercito, "Le Operazioni del 1916," in *L'esercito Italiano Nella Grande Guerra, 1915–1918* (Rome: Instituto poligrafico dello stato, 1931), 614.

66.   Weber, *Tappe Della Disfatta*.

67.   Felix Hecht, *Diario Di Guerra Da Corno Di Cavento* (Trento, Italy: Manfrini, 1995).

68.   James Edmonds and Henry Rodolph Davies, *Military Operations, Italy, 1915–1919* (London: Her Majesty's Stationery Office, 1949), 116.

69.   Leoni, *La Guerra Verticale*.

70.   *Leoni, La Guerra Verticale*.

71.   See, for example, Leoni, *La Guerra Verticale*; and Weber, *Alpenkrieg*.

72.   Fornasin, Breschi, and Manfredini, "Deaths and Survivors in War," 616.

73.   Weber, *Tappe Della Disfatta*.

74.   Österreichischen Bundesministerium für Heereswesen und Kriegsarchiv, "Von Der Einnahme von Brest-Litowsk Bis Zur Jahreswende," in Österreich-Ungarns Letzter Krieg*, 1914–18*, trans. Stan Hanna (Vienna: Verlag der Militärwissenschaftlichen Mitteilungen, n.d.); Österreichischen Bundesministerium für Heereswesen und Kriegsarchiv, "Die Ereignisse von Jänner Bis Ende Juli," in *Österreich-Ungarns Letzter Krieg*; Österreichischen Bundesministerium für Heereswesen und Kriegsarchiv, "Die Ereignisse von August Bis Zur Jahreswende," in *Österreich-Ungarns Letzter Krieg*; Österreichischen Bundesministerium für Heereswesen und Kriegsarchiv, "Das Kriegsjahr 1917," in *Österreich-Ungarns Letzter Krieg*; Ufficio storico Stato maggiore dell'esercito, "Le Operazioni Del 1915," in *L'esercito Italiano Nella Grande Guerra, 1915–1918* (Rome: Instituto poligrafico dello stato, 1929); and Stato maggiore dell'esercito, "Le Operazioni Del 1916."

75.   Stato maggiore dell'esercito, "Le Operazioni Del 1916," 174.

76.   Ettore Ricci, "Nota Sul Contributo Dato Dall'Esercito Nazionale Alla Illustrazione Della Climatologia Friulana e Della Morfologia Delle Alpi e Prealpi Carniche e Giulie, Nel 1915–19," in *Extracted from "Atti Del XII Congresso Geografico Italiano"* (Udine, Italy: Tipografia D. del Bianco e figlio, 1938).

77.   From April 2016 to April 2017, the author conducted a fruitless search tracing the reports of the Meteorological Section on avalanche accidents and victims at the Alpine front. Many archives and personnel of different institutions were consulted based on the documents found at the Historic Office of the General Staff of the Army (Rome), including the Alpine Training Center of the Alpine Troops Command (Aosta), the Alpine Troops Command and the Service Meteomont (Bolzano), the Alpine Troops History Museum (Trento), the Cartographic Archive of the Military Geography Institute of the Italian Army (Florence), and the National Library of the Italian Alpine Club (Turin). Carlo Capello, "Le Ricerche Sulle Valanghe in Italia. Dalle Origini Al 1965," *Pubblicazioni Dell'Istituto Di Geografia Alpina* 9, no. 3 (1968).

Counterinsurgency, Emergency, and Civil-Military Relations in Indonesia

Norman Joshua

Abstract: The Indonesian Armed Forces (TNI) has responded to a variety of national emergencies in Indonesia since 1945. This article argues that in Indonesia, the military role in emergencies is shaped by the long tradition of counterinsurgency. This article examines how historical experiences, military doctrine, and legal frameworks shaped civil-military relations in Indonesia, particularly regarding the military's role in emergency management.

Keywords: Indonesia, army, TNI, emergency, military operations other than war, MOOTW, emergency management, disaster response

Introduction

In early 2020, the COVID-19 pandemic reached Indonesia. As with many other countries, the Indonesian state's initial response was to implement a status of emergency. On 28 January 2020, Lieutenant General Doni Monardo, chief of the Indonesian National Board for Disaster Management (*Badan Nasional Penanggulangan Bencana*, BNPB), announced that Indonesia is in a "Particular State of Emergency for a Pandemic Disaster" (*Status Keadaan Tertentu Darurat Bencana Wabah*) as an initial response to the spread of the COVID-19 pandemic across the world.[1] Initially, this state of exception was implemented from 28 January until 28 February, and the situation was later extended into May.

The framework of "state of particularity" (*keadaan tertentu*) within the BNPB nomenclature means that there is an elevated vigilance against any disaster potential, paving the way for ad hoc coordination between ministries and organizations, such as the Interior Ministry, Finance Ministry, Health Ministry,

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the armed forces (*Tentara Nasional Indonesia*, TNI), the National Police, and other state institutions.[2] In this state of exception, however, the highest command for disaster response is still held by the regional governors and regents.[3]

As the pandemic gradually expanded, on 13 March 2020, President Joko Widodo (Jokowi) declared that the COVID-19 pandemic as a "Public Health Emergency" (*Kedaruratan Kesehatan Masyarakat*) and a "National Disaster" (*Bencana Nasional*), based on Law No. 6/2018 on Health Quarantines and Law No. 24/2007 on Disaster Management, respectively.[4] Jokowi also established a new Task Force for the Acceleration of the Management of Corona Virus Disease (COVID-19) (*Gugus Tugas Percepatan Penanganan Corona Virus Disease (COVID-19)*.[5] This intervention paves the way for state intervention on managing the pandemic, which is now considered a national disaster. Jakarta also decided that the pandemic should be combated by implementing large-scale social limitations (*Pembatasan Sosial Berskala Besar*, PSBB), which is based on the Health Quarantine Law.[6]

The implementation of PSBB was heavily criticized at the outset. For instance, urban planning observer Yayat Supriatna stated that the limitations are not effective as the policy relies on proper socialization and oversight.[7] Meanwhile, public policy expert Agus Pambagyo highlights the problems plaguing the nation's disaster management, such as tardy responses to emergencies, ineffectual implementation of laws, the prevalence of contradictory rules, and frequent changes in policy leadership.[8] Another concern is the domination of the armed forces and police in the state's response to emergencies. The BNPB, for instance, which was initially the chief agency leading the response against COVID-19, has been led by three- and two-star army and navy officers since its inception in 2008.[9] Civil rights groups in Indonesia are also concerned that excessive domination by the armed forces and police in disaster mitigation, especially during the current pandemic, contributes directly to the inefficacy of disaster-mitigation policies.[10]

Meanwhile, some elements, even within the civilian executive itself, viewed the current state of emergency as a militarized one. In 2020, President Widodo once considered the declaration of a state of general "civil emergency."[11] Later on 16 July 2021, Coordinating Minister for Human Development and Culture Muhadjir Effendy said that "in this government, even though it is not declared, the country is in a situation of military emergency. . . . Currently, we are in a state of military emergency."[12] Both statements were immediately criticized by many jurists, as the current law for the state of emergency in Indonesia—the Governmental Regulation in Lieu of Law (*Perpu*) 23/1959—is hopelessly outdated: many of the institutions referred in the law no longer exist, as it was designed for Indonesia in the 1960s.[13]

At the outset, these incidents indicate two things. First is the militarized nature of emergency and disaster mitigation in Indonesia. Indonesian emergency management and disaster relief is a market that is dominated by the military as its primary stakeholder. Second is the ambiguous character of the legal and

operational frameworks on emergency management, humanitarian assistance, and disaster relief (HA/DR) in contemporary Indonesia. The legal ambiguity of Indonesian emergency laws explains why many of the disaster responses in the country are often ad hoc in nature. These two things are closely related and often paved the way for military domination in the field of disaster mitigation and emergency management.

This article traces the historical origins and development of military participation in military operations other than war (MOOTW) in Indonesia. The article argues that the TNI's current role in emergency response is substantially shaped by its long tradition in counterinsurgency operations, methods, and techniques. From the development of Dutch colonial counterinsurgency techniques to the practice of revolutionary and postrevolutionary Indonesian military doctrine, Indonesia has a long tradition of close cooperation between civilian and military spheres. While this fact has certainly laid the foundation for military politics and praetorian rule, it also provided the military with a broad range of institutional capacity in MOOTW operations such as civic mission and HA/DR.

In Indonesia, this institutional capacity is inherently reflected in the TNI's territorial doctrine with its military area commands and strategic mobile strike forces. Military area commands entail that the TNI continuously participates in MOOTW, such as in territorial management operations. Meanwhile, strategic strike forces such as the TNI Quick Disaster Response Teams are often deployed in response to disasters. After the fall of the New Order authoritarian regime in 1998, the TNI often turned to peacekeeping operations, humanitarian assistance, and disaster relief operations as its primary avenue of maintaining its relevance while also offering its expansive institutional capacity for MOOTW tasks. This capacity, however, may impede security sector reforms and developments within the emergency management sector. This problem is particularly evident today, as Indonesia faced the COVID-19 crisis.

The Logic of Counterinsurgency: Emergency and Civil-Military Relations in Indonesia before 1998

Indonesian military politics have invited many scholarly discussions. The classic view is that the armed forces came into power as the military saw themselves as an agent of progress and development, while the Indonesian Army as an institution had already been "politicized" since its inception during the revolution.[14] Others view the army's political role as a rational response against civilian meddling in military affairs and their incompetence in ruling.[15] These "institutional" approaches were complemented by "culturalist" approaches, which viewed the army as a product of a military ideology shaped by Western professionalism and Javanese culture.[16] This fact is also reflected in the army's self-image produced in its own historiography, which promoted it as "a self-sacrificing people's army[,] guardians of the spirit of independence, and the protectors of the Pancasila."[17]

In addition to its own experiences during the Japanese and revolutionary periods, the Indonesian Armed Forces inherited many of the qualities and values from its colonial predecessor. One of the most important elements here is the logic of counterinsurgency, a mainstay of the colonial armed forces. Indeed, colonial warfare has been lauded as a testing ground for modern counterinsurgency doctrine.[18] Counterinsurgency here is defined as "the complete range of measures that governments take to defeat insurgencies," which include "political, administrative, military, economic, psychological, or informational and are almost always used in combination."[19] Counterinsurgency, whether at the level of doctrine, strategy, operations, or tactics, engendered the close relationship between civilian and military domains of life.

In colonial Indonesia, counterinsurgency techniques were first developed by the Royal Netherlands East Indies Army (*Koninklijk Nederlands Indisch Leger*, KNIL), a force primarily designed for fighting internal enemies. At least from the second half of the nineteenth until the first half of the twentieth century, the KNIL has fought no less than 32 colonial wars in a state of "armed peace."[20] Major counterinsurgency wars include the Padri War in Sumatra (1803–38), the Java War (1825–30), Dutch military interventions in Bali (1849), the Kongsi wars in West Kalimantan (1850–54), and the Aceh War (1873–1904) among others. It was during these colonial campaigns that counterinsurgency techniques—and subsequently military politics—began to take root in Indonesia.

The first crucible for Dutch colonial counterinsurgency techniques was the long Java War, which was essentially an agrarian counterinsurgency war between the KNIL and the forces under Prince Diponegoro. After a two-year stalemate, Dutch commander general Hendrik M. de Kock (1779–1845) implemented a five-point counterinsurgency strategy that emphasized the importance of political, rather than military, efforts. These efforts included securing alliances with local Javanese princes, maintaining areas already loyal to the Dutch, restoring civilian administration, security, and economy in newly pacified areas, isolating the enemy in pockets of mountainous "killing areas," and capturing Diponegoro and his lieutenants.[21] In executing the strategy, de Kock deployed a territorial and mobile strategy dubbed the *Benteng Stelsel* ("Benteng System") in 1827. The strategy relied on quickly building up temporary battlefield fortifications and deploying mobile flying columns in crushing insurgent forces.[22] These fortifications also became centers for winning the hearts and minds of the local population.[23] The strategy was considered successful, as Diponegoro was captured in 1830, signifying the end of the war.

There were important lessons in counterinsurgency from the Java War. First was the use of territorial forces and fortifications (*bentengs*), while the second was the use of mobile forces (flying columns). Thirdly was the importance of the military role in civilian administration. While perhaps this was not the first time that a military force experimented with territorial and mobile forces or civilian administration, the lessons of the Java War were well-documented into

the corpus of Dutch colonial military science. This similar approach was redeployed all across the archipelago, especially in dealing with problematic areas such as in West Kalimantan during the Kongsi wars.[24]

The second crucible for Dutch counterinsurgency methods was during the Aceh War. In this protracted colonial bloodletting, the war lasted for 40 years, and heavy casualties included the death of 75,000 Acehnese, 12,500 colonial soldiers, and 25,000 laborers in service of the KNIL. After this, Dutch colonial policy experienced a turning point.[25] Meanwhile counterinsurgency, by its nature, necessitates the deep understanding of military operations and war making, but also of governance and policing. Indeed, after Aceh, "the lessons and techniques of the Dutch counterinsurgency were incorporated directly into the colonial regime, which allowed for targeted violent suppression to be a regular element of civilian rule."[26]

The Dutch indeed learned their lessons from the Java War. In Aceh, the colonial military first institutionalized the mechanisms of civil-military rule. In March 1884, the governor of Aceh, P. F. Laging Tobias, assigned two KNIL officers, a major and a captain, to be *officier-civiel gezaghebber* (officer-civil authority holder, later *civil-militaire gezaghebber* or civil-military authority holder) responsible for governing particular areas. In addition to its military tasks, the civil-military administrator was required to establish relations with local chiefs or village heads and arrest, detain, and adjudicate persons in their assigned territory.[27]

Meanwhile, the Dutch also reinvented the mobile element in their counterinsurgency methods. In 1898, KNIL major J. B. van Heutsz (1851–1924) was assigned military governor of Aceh. Together with the Leiden-trained Indologist Christiaan Snouck Hurgronje (1857–1936), van Heutsz formulated the counterinsurgency strategy based on decapitating the local Acehnese religious leaders (*uleebalang*).[28] To do this, a new form of mobile force was invented. The new unit, the *Korps Maréchaussée te Voet*, was a light infantry unit capable of long-range raids against the enemy. They consisted of small units of 20–250 men, mostly Javanese, Ambonese, or Manadonese soldiers led by European officers and were armed with both the light Mannlicher M1895 bolt-action rifle and the *klewang* (sword).[29] Many of these *Maréchaussée* officers subsequently became civilian administrators to oversee regional pacification efforts. Two major examples are Major Gotfried Coenraad Ernst van Daalen (1863–1930) in residency of Pidië, Captain Paul Walter Franz Kaniess (1871–1936) as civil-military administrator in the residency of Gayo Lues, and Captain M. J. J. B. H. Campioni in underdistrict (*onderafdeling*) Tapa Toean and Meulaboh in 1901 and 1903, respectively.[30] These officers did not only oversee defense policy in the region, but they also communicated with local leaders, constructed infrastructure such as roads and schools, gathered taxes, and played the role of judicial authorities in their respective territories.

In 1937, KNIL infantry captain H. A. Reemer wrote an article titled "Dual Function of the Civil and Military Administrator" (*Dubbelfunctie van Civiel-*

en Militair-Bestuurder) in the *Indische Militaire Tijdschrift*, the Indies' premier journal for military science. The article elaborates on the various problems of civil administration that will be faced by newly minted KNIL officers. These include managing political relations with local *adat* leaders, demography, law, education, religion, health, finance and taxation, corvée labor, legal disputes, economy, and local administration.[31] While certainly not the only person to write about civil-military officership, Reemer was perhaps the first to coin the term "Dual Function" (*dubbelfunctie*) in the Dutch-Indonesian corpus of military science, almost 30 years before the Indonesian Army formalized the concept as its foundational doctrine.[32]

Revolution

Similar to its colonial predecessor, the TNI had a long experience in participating—or coordinating—with civilian authorities during the Indonesian National Revolution (1945–49). Established at the height of the revolutionary war, the TNI officer corps initially consisted of two groups, the Dutch-educated former KNIL officers and the Japanese-educated former Defenders of the Homeland (*Pembela Tanah Air*, PETA). It is important to acknowledge that these groups carried two distinct cultures of war into the TNI as an institution. However, it is clear that during the revolution, strategic positions in the TNI high command were held by the former KNIL group.[33] The KNIL-trained Abdul Haris Nasution (1918–2000), for instance, was the main strategist behind many of the TNI's operations during the war. Further, the borders between these two epistemological groups were often less clear-cut than it seems, as many of the KNIL-trained officers such as Nasution, Tahi Bonar Simatupang (1920–90), Gatot Soebroto (1907–62), and Soeharto (1921–2008) also participated in Japanese training during the occupation.[34] It is clear that during the revolution, the TNI organized territorial forces such as the Village Security Units (*Organisasi Keamanan Desa*, OKD) and mobile forces such as the Mobile Command (*Komando Angkatan Perang Mobil*) in 1948.[35]

After the revolution, the lessons of previous wars were institutionalized in studies within the Central Education Bureau of the Ministry of Defense (*Biro Pendidikan Pusat Kementerian Pertahanan, BPP Kemhan*). In the bureau's publication, the *Yudhagama,* Indonesian scholar Ki Hadjar Dewantara wrote that, according to Javanese ideology, the military is an inseparable part of society, and the existence of an army with an ideology (*tentara jang berideologie*) is an inevitability.[36] Within *Yudhagama,* the concept of a civil-military administrator was beginning to be transformed into a new shape. In 1951, Sajidiman Surjohadiprodjo (1926–2021) conceptualized the importance of this liaison role, and he argued for the assignment of military liaison officers (*Perwira Penghubung Masyarakat*) tasked with maintaining correspondence with local administrators and other important societal figures.[37] Decades later, the military liaison officers subsequently became the territorial officer/noncommissioned officer (*Perwira/Bintara Territorial*) that are still attached to TNI infantry battalions today.[38]

In 1953, Nasution published *Fundamentals of Guerrilla Warfare* (*Pokok-Pokok Gerilya*), which was widely lauded as a handbook in the practice of small wars. Nasution's conception of a Total People's War (*Perang Rakyat Semesta*) in the 1950s remain relevant in Indonesia today, as it is still part of the official TNI doctrine.[39] Nasution's concept of Total People's War, which was allegedly based on Indonesia's experiences during the revolution, were focused on two elements: namely, the use of locally recruited militia as territorial forces and professional army units as mobile strike forces.[40] Here we can see the repetition of colonial warfare techniques deployed during the Java and Aceh Wars in the early postcolonial era.

TNI and the "Dutch Period"

During the early postrevolutionary years, the socioeconomic situation in Java was fraught with postwar violence. In response to the nature of Indonesia's security challenges in the early years after the revolution, the TNI focused on policing roles. Initially, the training for these policing roles were shaped during the brief period from 1950–54 when the TNI received the Dutch Military Mission (*Nederlands Militaire Missie in Indonesië*, NMM) by which "hundreds of Dutch military instructors became an influential factor in Indonesian military history," where they were embedded in TNI units from the "Command and Staff School down to the battalion training centers."[41] At least 799 TNI officers and noncommissioned officers (NCOs) took three-month courses on tactics, terrain, pioneering, and ballistics in the infantry school.[42] On 17 January 1951, the NMM also played a major initial role in establishing the Army Command and Staff School (*Sekolah Staf Komando Angkatan Darat*, SSKAD, now SESKOAD), where officers took coursework on political, economic, legal, and sociocultural topics. The SESKOAD was important for the TNI, as "most of the basic ideas of national strategy and policy were formulated there in the late 1950s and early 1960s, before the advent of other schools."[43] At its inception, the SSKAD were manned by Dutch teachers, mostly drawn from the NMM, while its curriculum was modeled on the Higher War College (*Hogere Krijgsschool*, HKS) at Breda.[44]

It was during this Dutch period that the TNI developed its early counterinsurgency methods. The TNI adopted many manuals from the Dutch Military Mission. One such manual was the *Regulations for the Exercise of Political and Policing Tasks of the Army* (*Voorschrift voor de Uitoefening van de Politiek-Politioneele Taak van het Leger,* VPTL), which was subsequently translated into the *Guide for the Political and Policing Task of the Army* (*Penuntun Pekerdjaan Politik Polisionil Tentara*) in 1951.[45] These tactics included light infantry operational methods in conducting raids into enemy territory, navigation in tropical environments, intelligence-gathering methods, the use of locals as guides and interpreters, management of field bivouacs, logistical methods, and the procedure for conducting patrols.[46] Originally designed for the KNIL, the manual was heavily based on the historical experiences from the Dutch counterinsur-

gency and policing campaigns during the Aceh War.[47] While this is just one example of the many foreign lessons that the TNI eventually adopted, it is clear that the presence of VPTL within the TNI corpus of military knowledge indicates the incorporation of Dutch military thought into the TNI, particularly regarding counterinsurgency and policing tasks.[48]

In addition to policing techniques, the TNI also developed its legal apparatus, especially when states of emergency were invoked by the government. After the fall of the second Ali Sastroamidjojo cabinet on 14 March 1957, President Soekarno—in cooperation with Nasution, who was chief of staff of the army—unilaterally declared a state of siege (*keadaan darurat perang, staat van beleg*) for the whole of Indonesia.[49] It has been argued that this nationwide declaration of a state of siege immediately "catapulted military commanders everywhere in the country into positions of formidable [legal] authority, such as they had known only during the revolution."[50] This situation of exception also remained under the later laws on the state of emergency: the Law No. 74/1957 and Government Regulation in lieu of Law No. 23/1959.[51]

The declaration of a state of emergency—and the invoking of executive emergency powers—has been long considered as an important and decisive moment for the army's entry into Indonesian politics. Indeed, the army had an interest in legal matters since 20 August 1952, when they established the first Military Law School (*Sekolah Hukum Militer*, later *Akademi Hukum Militer*, AHM).[52] Led by Basarudin Nasution, a protégé of the famed jurist Djokosoetono, the AHM became a study center for army-related legal research, such as on military discipline, criminal law, and martial law.[53] During Guided Democracy (and the New Order), many of the army juridical officers played a major role in the nationalization of Dutch enterprises while also promoting the organicist-integralist ideology, thus paving the way for military participation in everyday life in Indonesia.[54]

Operationalizing Counterinsurgency: On the TNI Civic Mission

As a direct consequence of the developments in its counterinsurgency and juridical capabilities, the stage was set for the TNI to conduct its own policing and civic mission programs. Throughout the 1950s, the TNI gradually developed its doctrines and capabilities in civic mission. In the October 1951 edition of *Yudhagama*, Colonel Goesti Pangeran Harjo Djatikusumo (1917–92) wrote that "soldiers are not only on the front line for affairs of defense, but they are also on the front lines for the development of the country," echoing a similar call made by then-armed forces chief of staff, Major General T. B. Simatupang.[55]

Civic mission operations quickly became an important part of the TNI's repertoire. The army's first foray into civic action programs was in 1952, when the West Javanese *Siliwangi Division* first experimented with "construction battalions" that were split into three phases of operations. First, the TNI participates in national developmental programs in the regions, such as the dispatch

of infantry and combat engineer units to the national road projects in West and Southeast Kalimantan. Second, the TNI will transmigrate units of the National Reserve Corps (*Corps Tjadangan Nasional*, CTN). Third, there was to be a general demobilization of the army, with reductions of 15,000–25,000 personnel per year for three to five years.[56]

According to a statistical report in 1956, the CTN and its civilian counterpart, the National Reconstruction Bureau (*Biro Rekonstruksi Nasional,* BRN), managed to relocate a total of 26,585 men and their families to Lampung, South Sumatra, in 1953.[57] These initial actions became the basis for the army's later efforts in civic action operations in the late 1960s, when army divisions, pioneered by the *Siliwangi Division*, conducted civic action operations in villages affected by the *Darul Islam* rebellion in Java under the banner of *Operasi Bhakti*. During their *Bhakti* operations, the *Siliwangi Division* repatriated the population while also building and revitalizing houses, mosques, schools, roads, bridges, and other infrastructure.[58] In addition, these *Bhakti* operations were part of the main counterinsurgency strategy operated by the *Siliwangi Division* to eradicate the *Darul Islam* rebellions in West Java, titled "*Petunjuk Pokok Pelaksanaan Pemulihan Keamanan Kodam VI Siliwangi*," or P4K, which was first devised in 1959.[59]

Throughout the 1960s, the *Siliwangi Bhakti* operations subsequently became a template for army civic mission projects, which then became an integral part of the Territorial Warfare and Territorial Management Doctrine of the TNI.[60] In December 1962, President Soekarno promulgated Presidential Proclamation No. 371 of 1962, which provides the army with political legitimacy in expanding its civic mission projects.[61] Meanwhile, in February the following year, the TNI published an influential report on the importance of civic mission operations to the Territorial Management Doctrine, which gradually became the TNI's main doctrine on national defense.[62] This report was followed by a discussion of civic mission, now called "*Darma Warga*" within the SESKOAD, which was subsequently published in its quarterly journal *Karya Wira Djati* in October.[63] In both instances, the rationale for army civic mission operations did not only comprise pacification and normalization of post-conflict areas but also disaster relief and mitigation efforts.[64]

During the New Order, these *Bhakti* and *Karya* operations were expanded, as they became the primary framework for army participation in military operations other than war, which includes civic action programs, research programs, and disaster relief operations.[65] In times of natural disasters, for instance during the floods in Lamongan, East Java (1963), the eruption of Mount Agung in Bali (1963), floods in Kediri, East Java (1964), and landslides in Batusangkar, West Sumatra (1979), the armed forces participated in disaster evacuation, rehabilitation, and mitigation efforts.[66] During the 1963 eruptions of Mount Agung, for instance, the TNI sent in units for disaster mitigation. The eruptions on March and May 1963 claimed at least 1,500 lives and destroyed 62,000 hectares of productive land, subsequently creating a massive food shortage and

dislocation for the local populace.[67] The TNI sent in Army Health Corps units under Operation *Widjajakusuma*.[68] During seasonal floods in Central Java, the TNI flew in heavy equipment, food, and materials, while also building bailey bridges and river safety dykes to mitigate future flooding.[69] All of these operations were conducted under the label of *Bhakti* and *Karya* operations.

Ultimately, however, the TNI's most ambitious civic mission program was conducted during the New Order. The national civic mission program, the "Armed Forces in the Village" (*ABRI Masuk Desa*, AMD), was inaugurated in 1980. Mostly operated by the territorial forces of the various Army Regional Commands, the AMD was a quarterly army civic mission program, where various "ABRI units [were sent] into the villages to assist with community development in various fields."[70] In essence, the AMD was quite similar to the *Bhakti* operations, albeit implemented massively and simultaneously across the country. For an indication of the scale of the project, it should be noted that during Operation *Manunggal I* (1980), which was the first operation of the *ABRI Masuk Desa* project, the army deployed 51 companies in 125 villages across Indonesia. In *Manunggal V* (1981), Jakarta dispatched 61 companies to 187 villages across the archipelago.[71] Although the program has been criticized as a tool for surveilling rural populations and promoting the army's image in the public, the AMD remained a permanent program of the Army Regional Commands at least until 1996.[72]

Politicizing Counterinsurgency: The Territorial Doctrine

On the 1963 Armed Forces Day, the armed forces chief of staff, General A. H. Nasution declared that the Indonesian Armed Forces (*Tentara Nasional Indonesia, TNI*) will follow a "Middle Way" (*Jalan Tengah*) as its political doctrine. The Middle Way Doctrine, according to Nasution, means that the "armed forces will not try to dominate political processes, yet it will not exist as a 'dead tool' in the hands of the civilian government."[73]

One year earlier, the Army Command and Staff College (*Sekolah Staf dan Komando Angkatan Darat*, SESKOAD) published a monograph on the Territorial Warfare Doctrine (*Doktrin Perang Wilajah*). For the TNI, "Territorial Warfare" implies the "use and development of political, economic, sociopsychological, and military forces which are intertwined during peace and war in maintaining national security."[74] The Territorial Warfare Doctrine differentiates war into five phases, in which the battle was to be driven by three elements, namely mobile strategic reserve units (General Reserve forces), regional territorial units (organic Military Area Command forces), and territorial militia units (People Defense Organizations, *Organisasi Pertahanan Rakyat*).[75]

The concepts of "Middle Way" and "Territorial Warfare" then became the ideological basis of Indonesia's postwar defense doctrine. After the rise of the New Order in 1966, the Middle Way and Territorial Warfare doctrines developed into the Non-Military Function Doctrine (*Doktrin Kekaryaan*), Man-

agement Doctrine (*Doktrin Pembinaan*), and the Total People's War Doctrine (*Doktrin Perang Rakyat Semesta*), which were the foundational parts of the Indonesian Army's new general official doctrine published in 1966.[76] At the political level, these doctrines imply that the armed forces have a dual function (*dwifungsi*), as a military and a sociopolitical force.[77] At the operational level, the "Non-Military Function," "Management," and "Total People's War" concepts heralded the rise of the military-dominated government of the New Order. The army's territorial system became the tool on the ground, as the archipelago was split into various Military Area Commands (*Komando Daerah Militer, Kodam*). After 1965, these Military Area Commands were institutionalized as the core of the army's doctrine.

After the institutionalization of the Army Territorial Doctrine in 1965, civic mission and HA/DR operations were formalized into the TNI's day-to-day tasks. In 1975, the Territorial Doctrine, which is predicated on the Army's conduct of Territorial Operations (*Operasi Teritorial*), also includes Territorial Management Operations (*Operasi Pembinaan Territorial*) and Internal Security Operations (*Operasi Keamanan Dalam Negeri*). While the Internal Security Operations were generally policing operations, the Territorial Management Operations included military operations in infrastructure construction, reforestation, public information campaigns, natural disaster mitigation, intelligence, policing, and other operations that are currently categorized as MOOTW.[78] According to one field manual for TNI Military District commanders, "the objective of Territorial Management is to establish maximum and effective national resilience through a welfare and security approach [in order to] achieve the national goal."[79] Thus, throughout much of Soeharto's New Order, the TNI participated in MOOTW operations, whether it was in the name of national security, development, or disaster management.

From Counterinsurgency to Emergency?:
Post-*Reformasi* State of Emergency
and Civil-Military Relations

After the fall of Soeharto's New Order and the advent of democratization in 1998, Indonesia embarked on major security-sector reforms. One of the important steps of these reforms was the abolition of the Dual Function doctrine through the promulgation of Law 34/2004 on the TNI.[80] After 2004, the TNI lost the political privileges that it enjoyed during the New Order. Nevertheless, the TNI maintained its logic of counterinsurgency in contemporary times. This fact is reflected in the maintenance of the territorial system, as army units are still organized in various Army Regional Commands across the country, although the country has moved on from postrevolutionary chaos and military authoritarian rule. Consequently, it was necessary to find a new output for these territorial forces and their expertise in nonmilitary work. Military participation in nonmilitary affairs found new relevance in MOOTW activities, which currently includes peacekeeping, HA/DR, and counterterrorism.[81]

One of the primary markets for TNI MOOTW is disaster management. This fact was evident during the 2004 Indian Ocean tsunami in Aceh, which was a major turning point for Indonesian disaster management. One of the most devastating natural disasters in modern Indonesian history, the tsunami caused 131,029 fatalities, 37,066 missing, and 572,126 people displaced.[82] It was during the Aceh HA/DR operations that the TNI found its new role as a significant player in the business of disaster relief. The National Coordinating Body for Disaster and Evacuees Management (*Badan Koordinasi Nasional Penanggulangan Bencana dan Penanganan Pengungsi, Bakornas PBP*) was immediately authorized to manage half of the 40,000 TNI personnel in the area tasked with security.[83] However, the *Bakarnas PBP* was unable to effectively function, as the body "had neither real assets, nor implementation, policy-making or enforcement powers."[84] Therefore, many disaster-relief operations were independently conducted by the local Army Regional Subcommands and District Subcommands (*Korem* and *Kodim*) in Aceh, in which units conducted initial search and rescue operations and management of refugee shelters during the early phase of the disaster response.[85] Throughout much of the early post-disaster recovery phase, TNI units, particularly engineering battalions that were equipped with amphibious vehicles, excavators, and bridge-laying equipment were dispatched to reestablish land connections between the provincial capital of Banda Aceh and the other parts of the province.[86]

After Aceh, Indonesia further incorporated the military into its national disaster-response frameworks. First was through Law No. 24/2007 on Disaster Management and the inauguration of the National Disaster Management Agency (*Badan Nasional Penanggulangan Bencana*, BNPB) in January 2008. The new body is tasked as the nation's leading agency in disaster management while also coordinating other governmental and civil organizations, including the military and police.[87] Subsequently, military participation in domestic MOOTW was legitimized through these functions, which in turn was also continuously developed and trained as an internal capability of the army through its territorial operations.[88] Indeed, it is not wrong to say that in Indonesia, the field of disaster management is relatively dominated by the military or its former members.

After the post-Aceh emergency management reforms, the Indonesian defense establishment also developed its own disaster management systems. In 2010, the TNI inaugurated the Disaster Mitigation Quick Response Force (*Pasukan Reaksi Cepat Penanggulangan Bencana*, PRCPB), a centralized joint quick response force consisting of two battalions of army engineers.[89] One year later, the Indonesian Ministry of Defense (MOD) published a regulation that formalizes the tasks for TNI HA/DR missions, which includes rescue and evacuation of victims, the fulfillment of basic needs, protection for vulnerable groups in the population, management of refugees, and the restoration of public facilities and infrastructure.[90] This MOD regulation was expanded in 2015, with further provisions governing the possibility of deploying TNI units in domestic and international HA/DR operations in three phases: predisaster or mitiga-

tion phase, emergency management phase, and post-disaster or reconstruction/rehabilitation phase.[91]

The MOD regulation also stipulates that in the case of a national-level emergency, the BNPB may officially request assistance from the TNI, while for local-level emergencies, the governor, regent, or mayor of the affected area may immediately request military assistance from a local TNI unit commander.[92] Accordingly, after 2015, the TNI has a relatively robust and secure legal and operational framework for its HA/DR roles.[93]

In Indonesia, the organic personnel attached to the Disaster Management Quick Response Force and the various Regional Military Commands became the twin spearhead for military HA/DR responses, reflecting the Army's Territorial Warfare Doctrine in practice.[94] This illustrates how emergency management in Indonesia has become militarized as the current pattern echoes the older colonial and Cold War-era logic of counterinsurgency: the deployment of territorial and mobile forces in responding to perceived threats.

Current and Future Challenges for the Military Role in Emergency Management in Indonesia

Military participation in strictly nonmilitary operations such as emergency response against disasters poses its own problems and challenges. To be clear, military participation in HA/DR is not a uniquely Indonesian phenomenon, nor is it an indication of an undemocratic or illiberal political system. Two democratic nation-states, such as Japan and the United States, serve as examples. After the end of the Second World War and its inception in 1954, the role of the Japan Self-Defense Forces (JSDF) has been primarily focused on MOOTW such as HA/DR and civil engineering operations, which has been beneficial in fostering a close relationship with civilians.[95] One major example of HA/DR operations conducted by the Self-Defense Forces was during the great eastern Japan earthquake on 11 March 2011, which saw at least 100,000 JSDF personnel mobilized to provide relief and help with the evacuation of survivors.[96]

During the COVID-19 pandemic, at least 4,900 JSDF personnel played a major role in containment, testing, and logistics support at important sites such as airports and quarantine centers.[97] Indeed, for a country that outlaws war in its constitution, the JSDF enjoys broad support from its civilian counterparts as indicated by the record defense budget by the Fumio Kishida administration in 2021, although this raise in funding may also be attributed to the worsening security environment in East Asia.[98]

In the United States, the primary agency for emergency management is the Federal Emergency Management Agency (FEMA), which has the capability of calling in military assistance in responding to disasters. Furthermore, within the United States armed forces itself, the tradition of the military's role in MOOTW has a long history, as it was part of the civic mission and counterinsurgency techniques developed during the Cold War.[99] Within the domestic context, the armed forces in the United States—whether active duty, reserves,

or National Guards—also often play major roles in emergency management, such as during Hurricane Katrina in 2005, in which the military played a leading role in disaster response.[100]

In Indonesia, however, the military's role in emergency management has its own challenges. The current operational approach employed by the TNI in emergency management, which echoes the classic logic of counterinsurgency by emphasizing the use of territorial and mobile forces is problematic in several ways. First, problems may arise when a particular type of disaster that necessitates centralized control and specialized knowledge, such as pandemics, emerge. In the face of its extensive emergency-management system, Indonesia's initial response to COVID-19 was far from satisfactory.[101] It is questionable whether the TNI has sufficient institutional capability in responding to a widespread biological emergency such as COVID-19. In contrast with Japan and the United States, which possess robust military health and medicine research capacities, TNI's capability in medical research is rather limited—it relies on the development of new research in collaboration with private research institutions such as universities.[102]

Furthermore, in contrast to the militarized relationship between the BNPB and the TNI, the disaster-management system in the United States and Japan are led by civilian institutions and personnel that are specialized in emergency management rather than soldiers that are trained to be first responders.[103] Last but not least, the safety of TNI soldiers is also an important concern, as a substantial number of TNI personnel have been infected throughout the pandemic.[104]

Another challenge for the TNI is related to military politics and Indonesia's long trauma with army rule. There is always a potential, however remote, for MOOTW operations to become a pretext for legitimizing military participation in nonmilitary affairs, whether for the benefit of civilian politicians or for the army's own political purposes. One research article suggests that the widespread military role in the COVID-19 crisis has been used by army elites to advance their own institutional agenda.[105] Meanwhile, other research has indicated that, even before the pandemic started, the TNI had exhibited a pattern of using MOOTW operations in its efforts to maintain its institutional legacy from the Soeharto years.[106] Additional research evaluating TNI's performance in disaster response indicates that there is a need to simplify bureaucratic and legal barriers, ramp up the quantity of military quick response forces, and decentralize the current command and control structure by delegating command authority to regional heads (i.e., governors or regents vis-à-vis the Army Military Region commanders).[107] This approach, however, may be problematic in the context of a pandemic, as it calls for institutional expansion in an already bloated organization: after May 2020, the TNI already deployed 340,000 personnel to 29 provinces, cities, and regencies that have high numbers of infections.[108] The TNI's village noncommissioned officers (*Bintara Pembina Desa*, *Babinsa*) are back patrolling the streets again, now enforcing pandemic regulations rather than

looking for rebel supporters or political insurgents.[109] Hence, in light of the already semi-militarized public policy in Indonesia's response to COVID-19, there is the possibility that the expansion of the logic of counterinsurgency in disaster management will lead to rising military influence in civilian affairs.[110]

Within the emergency-response framework, however, the Indonesian government still uses the TNI as a spearhead in the integrated response against the COVID-19 emergency.[111] This militarization of pandemic response in Indonesia invited a mixed response, as critics indicate that the effectiveness of military and police participation is questionable, while supporters have lauded the TNI's role in enforcing discipline.[112] Nevertheless, it is possible that continued or expanding military participation in responding to the COVID-19 pandemic may substantially affect the legitimacy of TNI participation in domestic MOOTW projects in the future.

Conclusion

This article has explored the historical origins of the role of the military in emergency management in Indonesia. The article argues that the Indonesian military's role in emergencies originated in its tradition of counterinsurgency operations. In Indonesia, the roots of military participation in nonmilitary tasks—or in contemporary language, MOOTW—dates back to Dutch colonial counterinsurgency techniques, Indonesian revolutionary experiences, and postrevolutionary military doctrine. Indonesia's unique history has provided the country's armed forces with the theoretical background and practical experience in developing its doctrine on MOOTW. Historically, this fact has also laid the foundation for military politics and the authoritarian regime under Soeharto. After the fall of Soeharto's New Order in 1998, military participation in nonmilitary affairs has been severely curtailed.

After the Aceh tsunami of 2004, however, the TNI received a new opportunity, namely in the field of disaster management. Disaster management in Indonesia is heavily militarized, as the country relies on the TNI as a primary response force, while the nation's BNPB is also led by military or former military personnel. To a certain extent, this phenomenon is driven by the long tradition of employing military forces in MOOTW. The TNI has the capacity for responding to disasters as part of its territorial system. The emergence of the concept of MOOTW in military parlance also further legitimizes this military role in emergency response. Indeed, as this article has shown, the TNI has redeployed its logic of counterinsurgency: the institution has relied on the dispatch of territorial and mobile forces in responding to various emergencies and disasters.

Meanwhile, the "counterinsurgency approach" to emergency management is also problematic when the TNI has to deal with emergencies that require a high level of centralization and specialized knowledge such as the current COVID-19 crisis. Unlike in counterinsurgency operations, pouring a massive amount of manpower into a troubled territory certainly will not solve a pan-

demic. As this article has shown, the TNI's continued role in disaster management in the future may pose a problem for the TNI itself, as it invites scrutiny of the military, especially if the military reactivated and redeployed old institutions and techniques that were used during the New Order, such as the village noncommissioned officers, albeit packaged in the new concept of MOOTW. Consequently, further developments in laws, doctrines, and rules of engagement regarding a military role in MOOTW remains to be a future challenge for Indonesian military thinkers.

Endnotes

1. Surat Keputusan Kepala Badan Nasional Penanggulangan Bencana No. 9a Tahun 2020 (2020).
2. The term itself is quite hard to translate. *Keadaan* means condition and *tertentu* means particular. The term itself, however, refers to something more like "current circumstances." *Peraturan Badan Nasional Penanggulangan Bencana Republik Indonesia No. 5 Tahun 2018 Tentang Kondisi Dan Tata Cara Pelaksanaan Penyelenggaraan Penanggulangan Bencana Dalam Keadaan Tertentu* (Jakarta: Badan Nasional Penanggulangan Bencana, 2018), article 5–8.
3. The term *state of exception* is defined by Agamben as the "no-man's land between public law and political fact, and between the juridical order and life." Giorgio Agamben, *State of Exception,* trans. Kevin Attell (Chicago: University of Chicago Press, 2005), 1.
4. "Undang-Undang Republik Indonesia No. 6 Tahun 2018 Tentang Kekarantinaan Kesehatan," hukumonline, 2018; and "Undang-Undang Republik Indonesia No. 24 Tahun 2007 Tentang Penanggulangan Bencana," bnpd.go.id, accessed 29 March 2022.
5. *Keputusan Presiden No. 11 Tahun 2020 Tentang Penetapan Kedaruratan Kesehatan Masyarakat Corona Virus Disease 2019 (COVID-19)*, peraturan.bpk.go.id, 2020; *Keputusan Presiden No. 12 Tahun 2020 Tentang Penetapan Bencana Nonalam Penyebaran Corona Virus Disease 2019 (COVID-19) Sebagai Bencana Nasional*, peraturan.bpk.go.id, 2020; and *Keputusan Presiden No. 7 Tahun 2020 Tentang Gugus Tugas Percepatan Penanganan Corona Virus Disease 2019 (COVID-19)*, peraturan.bpk.go.id, 2020.
6. *Peraturan Pemerintah RI No. 21 Tahun 2020 Tentang Pembatasan Sosial Berskala Besar Dalam Rangka Percepatan Penanganan Corona Virus Disease 2019 (COVID19)*, peraturan.bpk.go.id, 2020.
7. "PSBB Belum Efektif, Kenapa?," Kompas.tv, 19 April 2020.
8. "Ragam Masalah Kebijakan Saat Pandemi Covid-19," Hukumonline.com, 5 August 2021.
9. The BNPB Chiefs were MajGen Syamsul Maarif (2008–15), RAdm Willem Rampangilei (2015–19), LtGen Doni Monardo (2019–21), LtGen Ganip Warsito (May–November 2021), and MajGen Suharyanto (November 2021–present).
10. For instance, see Irwan Syambudi, "LaporCOVID-19: TNI Dan Polri Dominasi Penanganan Pandemi Corona," tirto.id, 18 August 2021
11. "Saat Jokowi Rencanakan Darurat Sipil Hadapi Pandemi Covid-19," Nasional-Kompas.com, 31 March 2020.
12. Wahyuni Sahara, "Muhadjir Effendy Analogikan Indonesia Hadapi Covid-19 Seperti Darurat Militer," kompas.com, 16 July 2021.
13. For instance, the law explicitly refers to the role of a first minister (*Menteri Pertama*) as part of the authority holder for a state of emergency. This position has been abolished since the late 1960s. Further, see Friski Riana, "Jokowi Singgung Darurat Sipil, Pengamat: Lari Dari Tanggung Jawab," Nasional.tempo.co, 31 March 2020; and "Pakar Hukum Sebut Muhadjir Keliru Soal Darurat Militer Covid," CNN Indonesia, 17 July 2021.
14. Harold A. Crouch, *The Army and Politics in Indonesia* (Jakarta: Equinox Publishing,

2007), 22; and Salim Said, *Genesis of Power: General Sudirman and the Indonesian Military in Politics, 1945–49* (Singapore: Institute of Southeast Asian Studies, 1991), 2.

15. Ulf Sundhaussen, *Politik militer Indonesia 1945–1967: menuju dwi fungsi ABRI* [Indonesian Military Politics 1945–1967: Towards the Dual Function of the ABRI] (Jakarta: LP3ES, 1986), ix–x.

16. Peter Britton, *Profesionalisme Dan Ideologi Militer Indonesia: Perspektif Tradisi-Tradisi Jawa Dan Barat.* [Professionalism and Indonesian Military Ideology: Perspectives on the Traditions of Java and the West] (Jakarta: LP3ES, 1996), 226; Rudolf Mrázek, *The United States and the Indonesian Military, 1945–1965*, vol. 1, *Dissertationes Orientales*, no. 39 (Prague: Oriental Institute in Academia, Publishing House of the Czechoslovak Academy of Sciences, 1978); and Rudolf Mrázek, *The United States and the Indonesian Military, 1945–1965*, vol. 2, *Dissertationes Orientales*, no. 39 (Prague: Oriental Institute in Academia, Publishing House of the Czechoslovak Academy of Sciences, 1978).

17. *Pancasila*: (The Five Silas) is Indonesia's national ideology. Katharine E. McGregor, *History in Uniform: Military Ideology and the Construction of Indonesia's Past*, Southeast Asia Publications Series (Honolulu: University of Hawai'i Press, 2007), 216.

18. For instance, see Thomas Rid, "The Nineteenth Century Origins of Counterinsurgency Doctrine," *Journal of Strategic Studies* 33, no. 5 (October 2010): 727–58, https://doi.org/10.1080/01402390.2010.498259.

19. *Insurgencies and Countering Insurgencies*, U.S. Army Field Manual 3-24 and Marine Corps Warfighting Publication 3-33.5 (Washington, DC: Headquarters, Department of the Army, 2014), 1–2; and David Kilcullen, *Counterinsurgency* (Oxford: Oxford University Press, 2010), 1.

20. H. L. Wesseling, "Koloniale Oorlogen En Gewapende Vrede, 1871–1914," *Tijdschrift Voor Geschiedenis*, no. 91 (1978): 478–89.

21. P. B. R. Carey, *The Power of Prophecy: Prince Dipanagara and the End of an Old Order in Java, 1785–1855*, Verhandelingen van Het Koninklijk Instituut Voor Taal-, Land-En Volkenkunde 249 (Leiden, Netherlands: KITLV Press, 2007), 646.

22. Carey, *The Power of Prophecy*, 647.

23. The Dutch fort commanders promised "free ploughs, draught animals and seeds if [the population] moved to areas under their control. They also lowered tax rates, diminished corvée demands, and paid higher rates for day labourers in the immediate vicinity of their fortified outposts to encourage the settlement of peasant cultivators and their families." Carey, *The Power of Prophecy*, 651–52.

24. J. A. de Moor, "Warmakers in the Archipelago: Dutch Expeditions in Nineteenth Century Indonesia," in *Imperialism and War: Essays on Colonial Wars in Asia and Africa*, ed. J. A. de Moor and H. L. Wesseling (Leiden, Netherlands: Brill, 1989), 60.

25. Petra M. H. Groen, "Colonial Warfare and Military Ethics in the Netherlands East Indies, 1816–1941," *Journal of Genocide Research* 14, no. 3–4 (2012): 284, https://doi.org/10.1080/14623528.2012.719365; and Henk Schulte Nordholt, "A Genealogy of Violence," in *Roots of Violence in Indonesia: Contemporary Violence in Historical Perspective*, ed. Freek Colombijn and J. Th. Lindblad (Leiden, Netherlands: KITLV Press, 2002), 36–37. Paul van't Veer's *De Atjeh-Oorlog* was translated as *Perang Aceh: Kisah Kegagalan Snouck Hurgronje*. Paul van't Veer, *De Atjeh-Oorlog* (Amsterdam: Uitgeverij de Arbeiderspers,1979); and Paul van't Veer, *Perang Aceh: Kisah Kegagalan Snouck Hurgronje* (Jakarta: Grafitipers, 1985).

26. Andrew Goss, "Mobile Warriors and Cosmopolitan Intellectuals: The Legacy of the Dutch Counterinsurgency in Colonial Aceh," in *Insurgency and Counterinsurgency: Irregular Warfare from 1800 to the Present, Proceedings of the XXXVI International Congress of Military History, Amsterdam, 2010*, ed. Thijs Brocades Zaalberg, Jan Hoffenaar, and Alan Lemmers (Amsterdam: Netherlands Institute for Military History, 2010), 625.

27. H. W. van den Doel, "Military Rule in the Netherlands Indies," in *The Late Colonial State in Indonesia: Political and Economic Foundations of the Netherlands Indies, 1880–1942*, ed. R. B. Cribb, Verhandelingen van Het Koninklijk Instituut Voor Taal, Land-En Volkenkunde 163 (Leiden, Netherlands: KITLV Press, 1994), 61.

28. Snouck Hurgronje's famous 1892 report, *Atjeh-verslag*, is published in the *Ambtelijke Adviezen van C. Snouck Hurgronje* that was translated to Indonesian as *Nasihat-Nasihat C. Snouck Hurgronje Semasa Kepegawaiannya Kepada Pemerintah Hindia Belanda*. An extended version of the report was published as the two-book monograph *De Atjèhers*, in 1893. C. Snouck Hurgronje, *De Atjèhers*, 2 vols. (Batavia, Dutch East Indies: Landsdrukkerij, 1893); E. Gobée and C. Adriaanse, *Nasihat-Nasihat C. Snouck Hurgronje Semasa Kepegawaiannya Kepada Pemerintah Hindia Belanda*, vol. 1, Seri Khusus Indonesia Netherlands Cooperation in Islamic Studies (INIS) (Jakarta: Indonesia Netherlands Cooperation in Islamic Studies [INIS], 1990), 106; and E. Gobée and C. Adriaanse, eds., *Ambtelijke Adviezen van C. Snouck Hurgronje*, vol. 1 (Gravenhage, Netherlands: Martinus Nijhoff, 1957), Inleiding.

29. Groen, "Colonial Warfare and Military Ethics in the Netherlands East Indies," 287.

30. Doel, "Military Rule in the Netherlands Indies," 72–73. Born in East Prussia in 1871, Paul Walter Franz Kaniess was a *Maréchaussée* officer who served in Sulawesi from 1906–8 and Aceh from 1909–12. Nicknamed "Father of the Gayos" in his obituary, Kaniess was famous for his role in the pacification of the Gayo region during his tenure as civil-military administrator. See "In Memoriam Captain Paul Walter Franz Kaniess," *Indische Militair Tijdschrift*, no. 67 (1936). Capt Marie Joseph Jan Baptiste Hubert Campioni (1868–1904) was a *Maréchaussée* officer serving in Aceh from 1895 until his death in 1904. "In Memoriam Captain Marie Joseph Jan Baptiste Hubert Campioni," *Indische Militair Tijdschrift*, no. 35 (1904).

31. A. Reemer, "Dubbelfunctie van Civiel-En Militair-Bestuurder [Dual Function of Civil and Military Administrator]," *Indische Militair Tijdschrift*, no. 68 (1937).

32. On other *Indische Militair Tijdschrift* articles discussing civil-military cooperation in the colonial context of the Indies, inter alia: J. Drewes, "De Nieuwe 'Regeling van de Verhouding En de Samenwerking Tusschen Burgerlijke En Militaire Gezaghebber' Vastgesteld Bij Gouv.Besluit van 20 Juni 1927 No.1 (Staatsblad 1927 No. 345), A.O. 1927 No.11," *Indische Militair Tijdschrift*, no. 58 (1927); A. M. Sierevelt, "Een Voorbeld Tot Waarschuwing," *Indische Militair Tijdschrift*, no. 56 (1925); L. Wijerman, "Leger En Politie," *Indische Militair Tijdschrift*, no. 63 (1932): 159–66; and A. M. Sierevelt, "Leger En Politie," *Indische Militair Tijdschrift*, no. 63 (1932): 385–94.

33. Benedict R. O'G. Anderson, *Java in a Time of Revolution: Occupation and Resistance, 1944–1946* (Jakarta: Equinox Publishing, 2006), 234–35.

34. On the impact of Japanese occupation on Nasution's thought and Gatot Subroto's Dutch and Japanese training, see Barry Turner, *A.H. Nasution and Indonesia's Elites: "People's Resistance" in the War of Independence and Postwar Politics* (Lanham, MD: Lexington Books, 2018); and Moh Oemar, *Jenderal Gatot Subroto, Pahlawan Nasional* (Jakarta: Departemen Pendidikan dan Kebudayaan, 2006).

35. Saleh As'ad Djamhari, *Ichtisar Sedjarah Perdjuangan ABRI (1945–Sekarang)* [An Overview of the History of the Struggle of the ABRI [1945–Now] (Jakarta: Pusat Sejarah ABRI, Departemen Pertahanan-Keamanan [Centre for the History of the Armed Forces, Department of Defence and Security], 1971), 37–41.

36. K. H. Dewantara, "Ketentaraan Dan Kebudajaan," *Yudhagama*, no. 8 (May 1951): 316–17.

37. Sajidiman Soerjohadiprodjo, "Penjelesaian Suatu Perang Gerilja," *Yudhagama*, no. 9 (June 1951): 327.

38. Most famous are the village guidance noncommissioned officers (*Bintara Pembina Desa, Babinsa*). Sajidiman Soerjohadiprodjo, "Batalion Infanteri Sebagai Inti Pertahanan Indonesia," *Yudhagama*, no. 16 (January 1952): 597–98.

39. On 11 November 2019, Indonesian defense minister Prabowo Subianto mentioned to the parliament that Indonesian defense policy will still use the concept of *Pertahanan Rakyat Semesta* (Total People's Defense), a concept that is based on the nation's historical experiences. It is clear that Prabowo refers to Nasution's conception in this case. "Konsep Pertahanan Rakyat Semesta Yang Diperjuangkan Prabowo," CNN Indonesia, accessed 23 February 2021; "Prabowo: Jika Terpaksa, Kita Lakukan Perang Semesta Rakyat," CNN Indonesia, 11 November 2019; and Kristian Erdianto, "Konsep Per-

tahanan Rakyat Semesta Lima Tahun Ke Depan Ala Prabowo . . .” Kompas.com, 12 November 2019.

40. Abdul Haris Nasution, *Pokok-Pokok Gerilya Dan Pertahanan Republik Indonesia di Masa yang Lalu dan yang akan Datang* [Fundamentals of Guerilla Warfare and the Defense of the Republic of Indonesia in the Past and in the Future] (Yogyakarta, Indonesia: Narasi, 2012), 90.

41. Mrázek, *The United States and the Indonesian Military, 1945–1965*, vol. 1, 83.

42. *Verslag van de Werkzaamheden van de Voorlopige Nederlandse Militaire Missie in Indonesie. Afgesloten 15 November 1950* [Reports on the Activities of the Provisional Dutch Military Mission in Indonesia. Concluded on 15 November 1950] (Jakarta: Voorlopige Nederlandse Militaire Missie in Indonesie [Provisional Dutch Military Mission in Indonesia], 1950), 9–10.

43. Charles Donald McFetridge, “Seskoad: Training the Elite,” *Indonesia*, no. 36 (October 1983): 88.

44. At the inauguration of the first SSKAD cohort in November 1951, there were 18 Dutch instructors, 12 of them from the NMM. Compare this to six Indonesian military and civilian instructors. *SESKOAD: Sejarah Perkembangan Dan Pengabdiannya* [SESKOAD: History of Its Development and Service] (Jakarta: Dinas Sejarah Angkatan Darat [Army Historical Service], 2016), 140.

45. Staf Umum Angkatan Darat Kementerian Pertahanan Republik Indonesia [Army General Staff Ministry of Defence Republic of Indonesia], *Penuntun Pekerdjaan Politik Polisionil Tentara* [Regulation for the Exercise of the Political-Police Tasks of the Army], no. 6515 (Jakarta: Masa Baru, 1952).

46. *Voorschrift Voor de Uitoefening van de Politiek-Politioneele Taak van Het Leger* [Regulations for the Exercise of the Political-Police Task of the Army] (Batavia, Dutch East Indies: Reproductiebedrijf, 1937).

47. G. Teitler, “Voorlopers van Het VPTL, 1928–1829: Een Terugblik,” *Militaire Spectator* 170, no. 5 (2001): 268; and J. A. De Moor, “Colonial Warfare: Theory and Practice. The Dutch Experience in Indonesia,” *Journal of the Japan-Netherlands Institute*, no. 2 (1990): 104.

48. This is in contrast to the Japanese influence, which did leave an ideological footprint yet no doctrinal manual of any sort. The Japanese also did not return to train the TNI in the 1950s. Another major influence is the Americans, which only arrived in the 1960s.

49. The colonial Regulations on the State of War and Siege refers to two legal situations that may be invoked by the state. First is a State of War/*Keadaan Perang* (*Staat van Oorlog*) and second is a heavier, harsher State of Siege/*Keadaan Darurat Perang* (*Staat van Beleg*). *Keputusan Presiden No. 40 Tahun 1957*, peraturan.bpk.go.id, 1957.

50. Daniel S. Lev, *The Transition to Guided Democracy: Indonesian Politics, 1957–1959* (Jakarta: Equinox Publishing, 2009), 16.

51. *Undang-Undang Republik Indonesia Nomor 74 Tahun 1957 Tentang Pencabutan “Regeling Op de Staat van Oorlog En Beleg” Dan Penetapan “Keadaan Bahaya,”* peraturan.bpk.go.id, 1957.

52. Korps Perwira Mahasiswa, *Buku Kenang-Kenangan Perwira Mahasiswa Angkatan Ke-V Akademi Hukum Militer Dan Peringatan 17 Tahun Akademi Hukum Militer* (Jakarta: Akademi Hukum Militer-Perguruan Tinggi Hukum Militer, 1969), 15.

53. Corps Perwira-Siswa Akademi Hukum Militer, *Peringatan 1 Tahun Sekolah Hukum Militer* (Jakarta: Akademi Hukum Militer, 1953), 7, 17.

54. Crouch, *The Army and Politics in Indonesia*, 38–39; and David Bourchier, *Illiberal Democracy in Indonesia: The Ideology of the Family State* (Abingdon, UK: Routledge, 2016), 240–41.

55. G. P. H. Djatikusumo, “5 Oktober Hari Angkatan Perang,” *Yudhagama*, no. 13 (October 1951): 487; and T. B. Simatupang, “Pidato Kepala Staf Angkatan Perang Untuk 5 Oktober 1951,” *Yudhagama,* no. 13 (October 1951): 477.

56. A. H. Nasution, “Tentara Menjumbangkan Tenaga Untuk Pembangunan,” *Yudhagama*, no. 19 (April 1952): 724–26.

57. According to the statistics, the CTN relocated 12,037 men, while the BRN 14,548 men. These numbers do not include the families of the men transferred. See Biro Pusat Statistik, *Statistik 1956* (Jakarta: Biro Pusat Statistik, 1956), 16; and Herbert Feith, *The Decline of Constitutional Democracy in Indonesia* (Jakarta: Equinox Publishing, 2007), 81.

58. Disjarahdam VI/Siliwangi, *Siliwangi Dari Masa Ke Masa*, Edisi ke-2 (Bandung, Indonesia: Penerbit Angkasa, 1979), 349–57.

59. Kodam VI/Siliwangi, *Esa Hilang Dua Terbilang. Album Kenangan Kodam VI/Siliwangi, 1946–1977* (Bandung, Indonesia: Angkasa 1977), 34; and Kilcullen, *Counterinsurgency*, 90.

60. Guy J. Pauker, *The Indonesian Doctrine of Territorial Warfare and Territorial Management* (Santa Monica, CA: Rand, 1963), 38.

61. "Keputusan Presiden No. 371 Tahun 1962" (1962).

62. S. Sokowati, *T.N.I Dan Civic-Mission Suatu Aspek Pembinaan Wilayah* [TNI and Civic Mission: An Aspect of Territorial Management], Penerbitan Chusus 251 (Jakarta: Departemen Penerangan Republik Indonesia [Ministry of Information, Republic of Indonesia], 1963).

63. R. Soedarto, "Darma Warga Angkatan Bersenjata Dan Pembangunan Negara," *Karya Wira Djati (Madjalah Resmi Sekolah Staf Dan Komando Angkatan Darat)*, no. 10 (1963): 419–28.

64. Sokowati, *T.N.I Dan Civic-Mission Suatu Aspek Pembinaan Wilayah* [TNI and Civic Mission: An Aspect of Territorial Management], 27; and Soedarto, "Darma Warga Angkatan Bersenjata Dan Pembangunan Negara," 420–22.

65. Markas Besar Angkatan Bersenjata Republik Indonesia, *30 Tahun Angkatan Bersenjata Republik Indonesia* (Jakarta: Pusat Sejarah dan Tradisi ABRI, 1976), 280.

66. Markas Besar Angkatan Bersenjata Republik Indonesia, *30 Tahun Angkatan Bersenjata Republik Indonesia*, 280–81; and Markas Besar Angkatan Bersenjata Republik Indonesia, *40 Tahun Angkatan Bersenjata Republik Indonesia* (Jakarta: Pusat Sejarah dan Tradisi ABRI, 1985), 376–77.

67. Geoffrey Robinson, *The Dark Side of Paradise: Political Violence in Bali* (Ithaca, NY: Cornell University Press, 1995), 239.

68. Soedarto, "Darma Warga Angkatan Bersenjata Dan Pembangunan Negara," 421–22.

69. *Visual Momentum of the Indonesian Armed Forces' "Operasi-Bhakti" (Civic Mission)* (Jakarta: Kementerian Pertahanan dan Keamanan, 1972), 29–33.

70. Jun Honna, *Military Politics and Democratization in Indonesia* (London: Routledge, 2003), 60; and *Tinjauan ABRI Masuk Desa (Tahap I)* [Overview of the ABRI Masuk Desa (Phase I)] (Jakarta: Staf Teritorial Mabes TNI-AD, 1980), iii–v.

71. Dinas Penerangan Angkatan Darat, *Sewindu TNI-ABRI Masuk Desa, 1980–1988* (Jakarta: Dinas Penerangan Angkatan Darat, 1988).

72. The program is currently revived as the *TNI Manunggal Masuk Desa* (TMMD). Honna, *Military Politics and Democratization in Indonesia*, 60; and Donald E. Weatherbee, "Indonesia's Armed Forces: Rejuvenation and Regeneration," in *Southeast Asian Affairs*, ed. Huynh Kim Khanh (Singapore: Institute of Southeast Asian Studies 1982), 152.

73. Angel Rabasa and John B. Haseman, *The Military and Democracy in Indonesia: Challenges, Politics, and Power* (Santa Monica, CA: Rand, 2002), 10.

74. Territorial warfare is described as "a form of war that is universal (*semesta*), predicated upon the whole use of national forces in total, with priorities to military forces as its main element of strength, in order to decide the end of the war through *counteroffensive*, in order to protect the nation's sovereignty." Sekolah Staf dan Komando Departemen Angkatan Darat, *Doktrin Perang Wilajah*, NS 1124-01 (Bandung, Indonesia: Sekolah Staf dan Komando Angkatan Darat [SESKOAD], 1962), 3, 7.

75. Sekolah Staf dan Komando Departemen Angkatan Darat, *Doktrin Perang Wilajah*, attachment.

76. The Indonesian Army's first official doctrine, the "Three Sacred Vows" (*Tri Ubaya Çakti*), was published in the First Army Seminar in 1965. After the rise of the New Order in 1966, the doctrine was revised by the army leaders to erase references to

Soekarnoist revolutionary concepts. The new doctrine was called the *Catur Dharma Eka Karma.* Honna, *Military Politics and Democratization in Indonesia*, 233n5.

77. David Jenkins, "The Evolution of Indonesian Army Doctrinal Thinking: The Concept of *Dwifungsi*," *Southeast Asian Journal of Social Science* 11, no. 2 (1983): 24–25; and David Jenkins, *Suharto and His Generals: Indonesian Military Politics, 1975–1983* (Jakarta: Equinox Publishing, 2010), 258.

78. Markas Besar Tentara Nasional Indonesia Angkatan Darat, *Buku Petunjuk Lapangan Teritorial Komando Distrik Militer* (Jakarta: Departemen Pertahanan Keamanan, 1975), 62–65.

79. Markas Besar Tentara Nasional Indonesia Angkatan Darat, *Buku Petunjuk Lapangan Teritorial Komando Distrik Militer*, 41.

80. Article 39 of Law 34/2004 states that soldiers and officers are not allowed to become members of a political party, participate in politics, conduct business, or be elected to legislative offices and other political positions. See M. Mietzner and L. Misol, "Military Businesses in Post-Suharto Indonesia: Decline, Reform and Persistence," in *The Politics of Military Reform: Experiences from Indonesia and Nigeria*, ed. J. Rüland, M. G. Manea, and H. Born (Heidelberg, Germany: Springer, 2013), 112; and "Undang-Undang Republik Indonesia No. 34 Tahun 2004 Tentang Tentara Nasional Indonesia," dpr. go.id (2004), articles 2 and 39.

81. In Indonesia, MOOTW (*Operasi Militer Selain Perang*, OMSP) was legitimized as one of the TNI's main tasks under Law 34/2004 on the TNI. Prior to its current formulation, the concept of MOOTW/OMSP was first adopted through Law No. 03/2002 on National Defence and the 2003 Defence White Paper (Defence Ministry). *Undang-Undang Republik Indonesia No. 34 Tahun 2004 Tentang Tentara Nasional Indonesia*, article 7; and Muhamad Haripin, *Civil-Military Relations in Indonesia: The Politics of Military Operations Other Than War*, Routledge Security in Asia Series (Abingdon, UK: Routledge, 2020), 8, 9.

82. R. C. Morrow and D. M. Llewellyn, "Tsunami Overview," *Military Medicine* 171, no. 10 (2006): 61–62, https://doi.org/10.7205/milmed.171.1s.5.

83. The TNI was deployed in Aceh for counterinsurgency operations against the Acehnese Free Aceh Movement (*Gerakan Aceh Merdeka*). Sharon Wiharta, ed., *The Effectiveness of Foreign Military Assets in Natural Disaster Response* (Stockholm: Stockholm International Peace Research Institute, 2008), 90.

84. Wiharta, *The Effectiveness of Foreign Military Assets in Natural Disaster Response*, 89.

85. Winner Fradana Dieng, "Indonesia Military Roles in Disaster Response" (master's thesis, U.S. Army Command and General Staff College, 2020), 43.

86. Wiharta, *The Effectiveness of Foreign Military Assets in Natural Disaster Response*, 90–91.

87. Haripin, *Civil-Military Relations in Indonesia*, 63.

88. Haripin, *Civil-Military Relations in Indonesia*, 63.

89. Yanfri Satria Sanjaya, I. Gede Sumertha K. Y., and Beni Rudiawan, "Kapabilitas Pasukan Reaksi Cepat Penanggulangan Bencana (PRCPB) Yonzipur 10/2 Kostrad Terhadap Penanganan Bencana Alam Banjir Bandang Di Bima NTB," *Jurnal Strategi Dan Kampanye Militer* 4, no. 2 (2018): 68.

90. MOD Regulation No. 09/2011 (*Peraturan Menteri Pertahanan Republik Indonesia No. 9/2011*); and Darma Agung, "Bencana Alam, Militer, Dan Pertahanan Negara," *Wira: Media Informasi Kementerian Pertahanan* 3, no. 3 (2019): 7.

91. MOD Regulation No. 06/2015 (*Peraturan Menteri Pertahanan Republik Indonesia No. 6/2015*).

92. According to MOD Regulation No. 06/2015 articles 16 and 10, this may be a military district (*Komando Distrik Militer*), naval base, or air base commander (usually colonel or lieutenant colonel). See also Haripin, *Civil-Military Relations in Indonesia*, 74–75.

93. Haripin, *Civil-Military Relations in Indonesia*, 74–75.

94. Haripin, *Civil-Military Relations in Indonesia*, 74.

95. Tomoyuki Sasaki, *Japan's Postwar Military and Civil Society: Contesting a Better Life*, SOAS Studies in Modern and Contemporary Japan (London: Bloomsbury Publishing, 2015), 16.

96. Yuki Tatsumi, *Great Eastern Japan Earthquake: "Lessons Learned" for Japanese Defense Policy* (Washington, DC: Stimson, November 2012), 3.

97. "Japan Self-Defense Force Engagement in Response to COVID-19," Ministry of Defense, Japan, 18 May 2020, 4–11.

98. Kosuke Takahashi, "Japan Approves Record Extra Defense Budget," *Diplomat*, 26 November 2021.

99. See Andrew J. Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine 1860–1941* (Washington, DC: Center of Military History, United States Army, 2004); and John W. De Pauw and George A. Luz, *Winning the Peace: The Strategic Implications of Military Civic Action* (Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College, 1990).

100. See James A. Wombwell, *Army Support during the Hurricane Katrina Disaster*, Long War Series Occasional Paper 29 (Fort Leavenworth, KS: Combat Studies Institute Press, 2009).

101. Tim Lindsey and Tim Mann, "Indonesia Was in Denial over Coronavirus. Now It May Be Facing a Looming Disaster," *Conversation*, 7 April 2020.

102. Soroy Lardo, "Transformation of Infectious Diseases and the Indonesian National Military Health Research Collaboration in Supporting National Health Security," *Infectious Disease Reports* 12, no. 1 (2020): https://doi.org/10.4081/idr.2020.8763.

103. In contrast, FEMA in the United States and the Directorate General for Disaster Management of the Cabinet Office in Japan are both civilian organizations led by civilians.

104. In April 2020, there were 1,187 cases of COVID-19 in the TNI, while in July 2020, there was a massive outbreak at the Army's Officer Candidate School (*Secapa AD*), infecting 1,280 personnel in a single cluster. Diandra Megaputri Mengko and Aulia Fitri, "Peran Militer Dalam Penanganan Pandemi COVID-19 Dan Dinamika Pengawasannya Di Indonesia," *Jurnal Penelitian Politik* 17, no. 2 (2020): 228–29.

105. Jun Honna, "Military Politics in Pandemic Indonesia," *Asia-Pacific Journal Japan Focus* 18, no. 15 (August 2020): 5.

106. Haripin, *Civil-Military Relations in Indonesia*, 108.

107. Dieng, "Indonesia Military Roles in Disaster Response," 67–68.

108. Honna, "Military Politics in Pandemic Indonesia," 6.

109. Honna, "Military Politics in Pandemic Indonesia," 6.

110. Evan A. Laksmana and Rage Taufika, "How 'Militarized' Is Indonesia's COVID-19 Management? Preliminary Assessment and Findings," *CSIS Commentaries*, 20 May 2020, 2.

111. "Dukung PPKM Darurat Dan Mikro, TNI Kerahkan 63.207 Personel," CNN Indonesia, 13 July 2021.

112. Ardito Ramadhan, "Pemerintah Diminta Kurangi Peran Militer Dalam Penanganan Pandemi Covid-19," Kompas.com, 18 August 2021; and "Jokowi: Keberhasilan Penanganan COVID-19 Tak Lepas Dari Peran TNI," Detik.com, 5 October 2021.

Civil-Military Cooperation in Disaster and Emergency Response
Practices, Challenges, and Opportunities

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Abstract: Civilian authorities increasingly request military involvement in national emergencies and (inter)national disasters. This article aims to contribute to our understanding of these new civil-military interactions. The authors first reflect on three themes: (1) guidelines, principles, and goals of civil-military cooperation; (2) domain consensus through civil-military agreement on the allocation of areas of responsibility; and (3) militarization processes. The authors describe how these themes feature in traditional, expeditionary civil-military cooperation and in these new civil-military partnerships. Next, the authors consider the effects of the growing military role in emergencies and disasters on civil-military relations. The article concludes with some recommendations and a research agenda.

Keywords: civil-military cooperation, disaster, crisis, emergency, civil-military relations, militarization

Introduction

Civil-military cooperation has been an important element of military missions for decades. Still, research by military scholars has demonstrated that it remains contentious and challenging. Civilian and military actors are very different in terms of their organizational cultures, structures, and operational approaches, which complicate their collaborative efforts.[1] Moreover, military interference in humanitarian activities has been criticized by civilian partners as mission creep and deplored for blurring the boundaries between

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military and humanitarian domains of responsibility.[2] Nongovernmental organizations (NGOs) and international organizations will therefore often keep armed forces at a distance when operating in conflict settings or other volatile areas.

While civil-military cooperation is still neither self-evident nor undisputed in expeditionary contexts, a new field of civil-military interactions has emerged. Civilian authorities increasingly request military involvement in national emergencies and (inter)national disasters.[3] Apart from practical reasons (e.g., an urgent need for military capabilities), civilian leadership may also have political motivations to call for military assistance in the aftermath of disasters, such as the fact that it shows to the public that leadership is committed to a fast and efficient resolution of the crisis or to divert attention from failed disaster preparation and prevention. Regardless of the reasons, the armed forces will have to cooperate with local authorities, police, fire brigades, and emergency medical services in response to large-scale or complex accidents and disasters in their home country. Troops might also be deployed to support border management, when large numbers of refugees are arriving, such as in Australia (e.g., Operation Resolute) and in Europe (e.g., during the 2015 European Union [EU] refugee crisis). And in an international context, military units provided assistance in the aftermath of hurricanes (e.g., Hurricane Dorian in the Bahamas) and earthquakes (e.g., in Haiti) to alleviate human suffering and provide much-needed relief.[4]

In this article, the authors take the normative position that civil-military cooperation will often be necessary, as many contemporary crises can hardly be addressed by one governmental actor alone. Instead, contemporary crises require collaboration between various organizations due to their scale and complexity.[5] These crises require a so-called whole-of-government approach, in which public crisis agencies, often even supported by private companies, coordinate their activities and work side-by-side, since neither of them could solve the disaster on its own.[6] The interorganizational effort, if well-coordinated, will be more comprehensive and efficient than what any single organization could achieve. Increasingly, the armed forces are a key player because they have resources and skills that may often be of crucial importance to manage and resolve emergencies and disasters. Inadequate cooperation between civilian and military coactors can lead to failing response efforts, causing existing crises to deepen or worsen. Thus, there is a need to improve collaboration between civilian and military actors.

There is ample research on interorganizational cooperation during disasters and on civil-military cooperation in expeditionary (conflict) settings, but studies on civil-military cooperation in (inter)national disasters and emergencies remain rare, even though these civil-military interactions will face their unique challenges and have their own dynamics. This article aims to contribute to the understanding of the complexity of these civil-military interactions, compare expeditionary to new forms of civil-military cooperation, and provide recom-

mendations as well as a research agenda. To this end, the authors first reflect on three themes: (1) guidelines, principles, and goals of civil-military cooperation; (2) domain consensus through civil-military agreement on the allocation of areas of responsibility; and (3) militarization processes. This article describes how these themes have traditionally been characterized by distinctions and divisions between civilian and military actors, and the authors discuss the relevance of these themes in new civil-military partnerships. Next, the authors consider the effects of the growing military role in emergencies and disasters on civil-military relations. Finally, this article offers some recommendations and raise questions to be explored in future research.

Before moving on to the next section, it is important to emphasize that the relations between civilian and military leaders and organizations differ considerably by country. While many Western countries allocate similar roles to their armed forces, historical and cultural distinctions remain and should not be ignored. This means that analyses of civil-military cooperation and policy recommendations require caution. The authors will reflect more on this near the end of the article.

Guidelines, Principles, and Goals

In expeditionary contexts, humanitarian organizations and armed forces perform fundamentally different tasks and roles, based on distinct principles, responsibilities, motivations, and approaches. These different tasks and roles are not always clear to others in the partnership, which can lead to unclear working relations, in which mutual distrust easily arises.[7] Civilian and military institutions have for many years tried to develop guidelines for the management of civil-military cooperation to reduce complex relationships in the field, but often remain wary in practice about opportunistic behaviors by the other.

From a civilian point of view, civil-military collaboration needs to serve humanitarian interests. According to the Inter-Agency Standing Committee (IASC), which is a civilian interorganizational network coordinating humanitarian assistance in crises, civil-military cooperation consists of "the essential dialogue and interaction between civilian and military actors . . . necessary to protect and promote humanitarian principles, avoid competition, minimize inconsistency, and, when appropriate, pursue common goals."[8] Interactions can vary from coexistence to full-fledged cooperation, but it always revolves around *humanitarian* goals and principles, essential to saving lives and alleviating human suffering. At the level of the operators in the field, it is difficult to strike the right balance between a necessary and appropriate level of cooperation with the military, because civilian and military action must remain distinct but can be complementary and both can mutually benefit from increased cooperation. The United Nations Office for the Coordination of Humanitarian Affairs adopts the premise that military deployment and resources must complement and support the work of humanitarian organizations. The division of tasks and responsibilities and management of this cooperation are regulated by the Last Resort prin-

ciple: (1) military means are unique capabilities for which there are no civilian alternatives; (2) they are available in time to meet an urgent demand; (3) they are controlled by civilians; and (4) deployment is temporary and limited in scale.[9]

The perspective of the North Atlantic Treaty Organization (NATO) is very different in this regard, because it views civil-military cooperation (CIMIC) as essentially about achieving *military* goals.[10] NATO's CIMIC includes supporting local authorities, as well as coordination and planning with civilian actors, including humanitarian organizations. CIMIC activities, however, serve the military mission, follow military priorities, and focus on reaching political goals, thereby deviating from humanitarian principles of humanity, impartiality, neutrality, and independence. Over time, NATO has adopted the belief that military operations sometimes must be integrated with civilian and political elements to achieve lasting peace and stability in fragile regions. This comprehensive approach (CA) sees military operations as Joint and comprehensive enterprises. Still, the primary goal is the achievement of political goals and military interests remain key in this approach. Likewise, in *Civil-Military Operations*, Joint Publication 3-57 by the U.S. Chairman of Joints Chiefs of Staff, it describes civil-military operations as "activities performed by military forces to establish, maintain, influence, or exploit relationships between military forces and indigenous populations and institutions" with a stable operational environment as its main objective.[11]

The number of concepts and definitions in doctrines and other documents is daunting, but the most important observations are that civil-military cooperation does not constitute an end in itself in any guideline or directive and intended goals clearly differ per institution.[12] Likewise, views on management, role distribution, and positioning of civilian and military partners vary, because civilian and military actors in expeditionary contexts primarily attempt to resolve the complexity of civil-military contexts by subordinating the other partner to their own interests and goals.

In emergencies and disasters, particularly in a domestic context, goals and interests may well be more aligned, because both civilian and military actors aim to manage and resolve the crisis. To some extent, the partnership is indeed less complex, because partners are more familiar, can work together on a more permanent basis, and manage to formulate clearer guidelines. Generally, for instance, guidelines prescribe that military personnel are only deployed on the request of civilian authorities and remain subordinate to these civilian authorities throughout the response operations. Besides, there is a clear interdependence in these partnerships. During large-scale disasters, whether it is Hurricane Katrina, the 2010 Haiti earthquake, Australian bushfires, or the global COVID-19 crisis, civilian organizations are overwhelmed and lack resources or adequate security. The military, particularly in the early stages of the response, is one of the few organizations who can offer vast resources or establish a secure operating environment and is therefore likely to be called on for assistance by NGOs, first response organizations, and local authorities.

Yet, important differences remain. For instance, organizational cultures and structures are still quite different. Also, the principles for operations are distinct. While the police, for example, aim to be a community organization, military principles of using overwhelming force to resolve a crisis situation, such as a terrorist threat or riots, may not sit well with police approaches to these issues.[13] In addition, organizational interests do not disappear and might pit organizations against each other, even during disasters and emergencies.[14] Therefore, these themes remain important issues for civil-military cooperation in new areas of cooperation as well.

Breach of Domain Consensus

Civil-military cooperation in expeditionary settings is known to become more complex when actors (are perceived to) trespass into the other's domain. In the wake of stabilization strategies, such as CA, which explicitly links humanitarian, military, and political purposes, humanitarian organizations have experienced military interference in areas beyond the traditional military domain. In their perceptions, traditional domains of responsibilities have not always been respected, while proven expertise and customs are wrongly ignored.[15] This discontent further increased if the local population proved dissatisfied with the quality and nature of the military support.

In the context of disasters and emergencies, perceived breaches of domain consensus are also a frequent occurrence. In this context, as well, criticism of domain breaches are leveled against military actors. In domestic crisis management, for instance, military involvement in restoring public order (e.g., during the Los Angeles riots of 1992) and protection against terrorist threats (e.g., in France's Operation Sentinel and Belgium's Operation Vigilant Guardian both in 2015) means that the armed forces carry out activities in tasks that are traditionally fulfilled by the police.[16] Likewise, when military personnel are deployed to fight wildfires or for rescue operations during floods (e.g., in the UK and the Netherlands), they take over some of the work of the fire brigade. These organizations may see the military involvement as a threat, because it suggests that they are incapable of resolving such emergencies themselves or fear it might foreshadow a shifting of funding to the armed forces.[17] Likewise, during international disaster and emergency response, the deployment of military forces for humanitarian assistance and disaster relief (HA/DR) are bound to be contentious when soldiers are engaged in the same activities as humanitarians, such as handing out emergency supplies and providing medical treatment. In this case as well, the military organization appropriates responsibilities, which used to be carried out by humanitarian organizations. This might even be experienced as improper competition by civilian organizations whose entire existence is based on this work and who collect donations for this very purpose.

In some cases, domain breaches are not restricted to the allocation of responsibilities but may also center around questions of accountability and lead-

ership. An interesting example comes from Hurricane Katrina. During this disaster, the military response was by some perceived to be quite fast and effective, even though others remained critical of the (initial) military contribution.[18] Afterward, a discussion emerged about whether disasters of this size should fall within the military domain of responsibility, so that the armed forces can lead and coordinate the response rather than civilian agencies that clearly had failed in launching an effective relief effort in this instance.[19] Such discussions are always contentious and complicate civil-military relationships.

This analysis shows, first, that domains are not fixed or clearly distinct. With changing emergencies and disasters, there are good reasons to reconsider the respective domains of civilian and military actors. In particular, as climate change leads to larger crises, it makes sense to see how military capabilities can be put to use in various contexts. Second, changing and overlapping domains of responsibility will inevitably result in friction and complicate civil-military cooperation.

Militarization Processes

In expeditionary missions, humanitarian actors regard violations of humanitarian principles as the main obstacle to civil-military cooperation. This happens when humanitarian aid is viewed as a means to promote politico-military strategies and objectives, such as when U.S. secretary of state Colin L. Powell described NGOs as a force multiplier that helped the U.S. government to reach its goals in Afghanistan.[20] This militarization results in three concerns.[21] The first concern is *contagion*, which refers to (the suspicion of) military-strategic use of humanitarian aid, by delivering it to only one of the parties in a conflict. Humanitarian organizations fear that, in this case, they will no longer be viewed as neutral, and thus no longer able to operate safely but will become targets themselves. A second concern is *complicity*: the fear of humanitarian organizations that by cooperating with the military, they will no longer offer the right support to affected communities or they will no longer be able to comply with the "do no harm" principle. Thirdly, there is concern that civil-military cooperation will result in the humanitarian response falling under *military command and control*. While research on this topic is scarce, these concerns complicate relationships between civilian and military actors in expeditionary settings.

In the context of disasters and emergencies, similar concerns are voiced. The militarization of response and relief in the aftermath of such situations may be problematic for civil-military relationships, because there is a fear that military organizations will effectively sidetrack civilian actors.[22] The response to the COVID-19 pandemic, for instance, was militarized, as leaders increasingly employed military metaphors to describe their understanding of the situation and the measures that would need to be taken.[23] This also happened during earlier disease outbreaks, such as Ebola, Zika, and pandemic influenza.[24]

However, when a situation is typified as a war and troops are deployed, armed forces might be less inclined to cooperate with civilian partners to act

more rapidly or because they emphasize security measures in which they are the primary experts. Similarly, in the aftermath of Hurricane Katrina, the affected area was treated as a war zone to be brought back under (military) control rather than as a site rife with human suffering in need of humanitarian support. While civilian agencies need a certain level of security to operate, military organizations are usually not eager to share security-related information with civilian partners or discuss the nature of the threat and potential security mechanisms with civilians, but they prefer to act on their own expertise. Such a militarized mindset is not always conducive to building partnerships with civilian organizations, even more so when civilian and military threat perceptions differ considerably, as is often the case during infectious disease outbreaks and after hurricanes.[25]

In addition, military personnel are trained to see and counter security threats. Disasters and emergencies may indeed produce security threats but first and foremost create situations in which people require humanitarian aid and relief. A strict militarized focus on countering threats can impede the humanitarian work of civilians, fostering anger and frustration among affected populations who feel they are treated as criminals rather than victims, as happened in the aftermath of Hurricane Katrina.[26] An angry population, feeling slighted by its government and lacking basic services, might well avoid cooperation with public agencies and feel a need to take care of itself (e.g., taking food, water, and medicine from stores). In this way, a security approach becomes a self-fulfilling prophecy, as a militarized response to a disaster produces the threats (e.g., looting) it wished to contain. Similarly, in EU border management, the militarized treatment of refugees reinforces their image as security threats to the general public, leading to further security measures, resulting in a vicious cycle of threat perceptions and militarized responses.[27] Such militarized responses to disasters estrange humanitarian and other civilian actors from the armed forces. The different approaches that civilian and military actors intuitively adopt when responding to situations of chaos and crisis are therefore potentially complicating their interactions.

Complexity of the Collaboration and Civil-Military Relations

Major obstacles to civil-military cooperation stem from three distinctions between both sides: they adopt different goals and principles, they compete over domains of responsibility, and they have incongruent ideas about the need for militarized approaches in emergencies and disasters. These obstacles influence the intentions and opportunities for cooperation between actors during the responses to disasters and emergencies as much as in expeditionary contexts. As such, it is important to recognize and accept that civil-military cooperation will always be characterized by an element of conflict.[28] This is not a problem that can simply be resolved, nor is it only problematical. In fact, it is precisely this element of conflict that will stimulate critical thinking, which is necessary

to generate innovation and creativity to solve the multifaceted and complex problems that these civil-military partnerships are facing.

Unfortunately, today's dominant response seems to consist of trying to reduce this complexity with an illusion of control: ever more detailed and stricter guidelines, definitions, and directives to achieve domain and goal consensus.[29] In the meantime, the discretionary space for operators in the field is reducing and spontaneous civil-military cooperative efforts in response to urgent needs are viewed with skepticism or reversed. This is a regrettable trend. The authors believe that it is important to consider and discuss the military's position in our societies by reflecting on its strengths in managing disasters and emergencies and debating the control mechanisms that are needed as its role in these new operational contexts are growing. This requires open dialogue, which will only be possible in a democratic country.

To do so, the authors move back to the key question in the research field of civil-military relations (CMR), which can be formulated as: How does a society ensure that its soldiers will do what its democratically elected leaders want? This remains an essential question to ask when military tasks are expanding, because we must consider how "those with weapons" should relate to "those without weapons."[30] Generally, two main camps have formed in response to this question.

Some scholars are in favor of *objective civilian control*, which is based on a strict separation between military and civilian spheres.[31] Military professionals are expected to strictly follow political decisions, but there is limited civilian interference in military affairs in turn. With such a strict separation, a society runs the risk of its military and civilian actors growing apart, developing ever-diverging views, and political leadership ignoring important military expertise and threat assessments. Other scholars, therefore, prefer *subjective civil control*, which is based on active military citizenship, through which soldiers are immersed in the civilian domain and socialized in such a way that they are willing to do what their society demands.[32] The type of civilian control that a society selects will affect the practices of civil-military cooperation. Whereas a too strict separation between civilian and military domains can endanger cooperation when necessary, overactive military citizenship can lead to a blurring of civilian and military areas of responsibility.

Societies differ in how they deal with this dilemma. Civil-military relations are influenced by national cultures and histories, and therein lies an explanation for the differences.[33] The most relevant model for civil-military relations in every society arises from a dialogue between soldiers, politicians, and civilians.[34] Over time, the importance of engaging in this dialogue has increased, particularly given that military roles are diversifying and military involvement in new contexts evokes novel questions on how to ensure civilian control. Indeed, although historically and culturally embedded views on the position of armed forces in society seem stable, they can adapt to specific local developments.[35] Terrorist threats, for example, appear to lead to a society temporarily and locally

accepting a rapprochement between civilian and military actors.[36] As a result of terrorist attacks, the national military footprint increased in many European countries, while there were few complaints about trespassing of domains or conflicting goals and principles. In addition, it seems that societies are much more eager to accept military contributions in large disasters, while similar involvement in smaller emergencies is eyed with suspicion. The unprecedented military activities during the COVID-19 crisis are testimony to this.[37] Even the nature of the situation matters: military involvement in wildfires and floods is generally perceived to be less threatening and concerns about a weakening of civilian control are mostly absent, but military operations in restoring public order or fighting crime remains very contentious.

Another interesting phenomenon occurs when a country agrees with the deployment of its armed forces abroad, while it would not accept such a heavy military footprint in its own country. Many Western countries, which are hesitant to allow for large-scale military deployments in their own country on historical and cultural grounds, appear to have fewer reservations in deploying troops abroad in similar crisis situations. Clearly, views on civil-military relations are not monolithic, but depend heavily on the type, nature, and context of military operations. In some cases, soldiers are strictly subordinated to civilian crisis organizations, while in other cases, the armed forces are enabled to take charge.

Civil-military cooperation efforts follow these preconceptions. When there are few reservations of military involvement in some emergencies or disasters, the armed forces may easily take a more proactive role and negotiate its role on a more equal footing with civilian counterparts. Conversely, when societies are hesitant about military interference in other emergencies and disasters, soldiers remain strictly subordinate to civilian organizations. Generally, the nature of civil-military interactions in this new area of cooperation needs to follow open dialogue. It is therefore of the utmost importance that civilians, soldiers, politicians, administrators, aid workers, companies, researchers, teachers, and students are aware of civil-military relationships and involved in designing the future of civil-military cooperation.

Recommendations and a Research Agenda

There are no universal guidelines or principles for civil-military cooperation, nor can areas of responsibility be definitively allocated to civilian and military partners. Instead, it is important to acknowledge that cooperation in crisis response is different from expeditionary civil-military cooperation in conflicts and wars. Just like some basic (albeit contested) guidelines, principles, and domain consensus on civil-military cooperation have emerged during the past decades in this latter context, national governments would do well to take the lead in (re)considering guidelines, principles, and domain consensus for civil-military cooperation in disaster and emergency response. Civilian and military roles and relations will inevitably need to differ, depending on the context of operations,

nature of the disaster, and its scale. Thus, it would be wise to invite relevant civilian crisis agencies and military units to discuss the outlines of their respective domains and the nature of the collaboration before crisis strikes on multiple governmental levels for diverse scenarios.

Still, all disasters are unique and dynamic. They produce unanticipated needs, lead to specific resource scarcities, and will see unforeseen organizations (e.g., private companies and community groups) getting involved. Much of the allocation of tasks and principles for cooperation will therefore have to be settled during the disaster or emergency. Colocation of civilian and military representatives in emergency operations centers and the exchange of liaisons are often crucial for resolving misunderstandings and rapidly coordinating organizational activities.[38]

After disasters, evaluation reports should not only focus on how well civilian and military partners communicated and coordinated during the event, but they should also consider the broader societal impact if the armed forces have taken on new or greater responsibilities during the disaster or emergency. The militarization of crisis response is not in the interest of armed forces, nor in that of civilian crisis organizations or society at large, and such effects can be monitored on a case-to-case basis.

In terms of research, attention from scholars for the military involvement in disasters and emergencies is slowly growing. These operational contexts, even more than expeditionary contexts, require civil-military collaboration, both because civilian actors are already active in these crisis settings and because military units typically operate under the supervision of civilian counterparts.

Yet, some aspects require further study. For example, it is crucial to find out how civilian and military actors coordinate and cooperate in different disasters and emergencies, because civil-military interactions may face varying complexities depending on the nature of the crisis, its size, or the context in which it takes place. At the moment, there is no research on whether earlier recommendations for improving civil-military cooperation, such as building trust through maintaining informal relations or exchanging liaisons, can be fruitfully transferred across cooperative efforts.[39] Research is also needed into how elements of immersion and separation can occur simultaneously and how civilian control varies in different contexts. The way in which historically and culturally formed traditions and sentiments influence power dynamics between civilian and military actors during cooperation practices deserves more attention in particular. It would be interesting to gain more insight into how military actors gain new tasks in emergency and disaster response and how civilian perceptions of military involvement as well as practices of civilian control evolve over time. By extension, it is useful to know to what extent civilian and military actors influence each other's approaches regarding the management of disasters and emergencies. This would enable an understanding of whether military involvement does inevitably militarize this domain or whether civilian organizations also affect military approaches and armed forces adopt civilian principles in turn.

Endnotes

1. Volker Franke, "The Peacebuilding Dilemma: Civil-Military Cooperation in Stability Operations," *International Journal of Peace Studies* 11, no. 2 (Autumn/Winter 2006); Donna Winslow, "Strange Bedfellows: NGOs and the Military in Humanitarian Crises," *International Journal of Peace Studies* 7, no. 2 (Autumn/Winter 2002); Francis Kofi Abiew, "NGO-Military Relations in Peace Operations," *International Peacekeeping* 10, no. 1 (2003), https://doi.org/10.1080/714002394; and Robert Egnell, "Civil-Military Coordination for Operational Effectiveness: Towards a Measured Approach," *Small Wars & Insurgencies* 24, no. 2 (2013), https://doi.org/10.1080/09592318.2013.778017.

2. Myriame Bollen, "Working Apart Together: Civiel Militaire Samenwerking Tijdens Humanitaire Operaties" (PhD diss., Wageningen University, 2002); and Sebastiaan Joost Henrikus Rietjens and Myriame T. I. B. Bollen, *Managing Civil-Military Cooperation: A 24/7 Joint Effort for Stability* (Farnham, UK: Ashgate Publishing, 2008).

3. Timothy Edmunds, "What Are Armed Forces For?: The Changing Nature of Military Roles in Europe," *International Affairs* 82, no. 6 (2006), https://doi.org/10.1111/j.1468-2346.2006.00588.x; Jori Pascal Kalkman and Erik J. de Waard, "Inter-Organizational Disaster Management Projects: Finding the Middle Way between Trust and Control," *International Journal of Project Management* 35, no. 5 (July 2017), https://doi.org/10.1016/j.ijproman.2016.09.013; and Jori Pascal Kalkman, "The Expanding Domestic Role of Western Armed Forces and Its Implications," *Journal of Homeland Security and Emergency Management* 16, no. 1 (2019), https://doi.org/10.1515/jhsem-2018-0052.

4. Frank C. DiGiovanni, "A Way Ahead for DOD Disaster Preparedness," *Joint Force Quarterly*, no. 82 (2016).

5. Thomas Goss, " 'Who's in Charge?': New Challenges in Homeland Defense and Security," *Homeland Security Affairs* 2, no. 1 (2006).

6. Veronica Vecchi, Niccolò Cusumano, and Eric J. Boyer, "Medical Supply Acquisition in Italy and the United States in the Era of COVID-19: The Case for Strategic Procurement and Public-Private Partnerships," *American Review of Public Administration* 50, nos. 6–7 (2020), https://doi.org/10.1177/0275074020942061; Austen D. Givens, Nathan E. Busch, and Alan D. Bersin, "Going Global: The International Dimensions of U.S. Homeland Security Policy," *Journal of Strategic Security* 11, no. 3 (2018), https://doi.org/10.5038/1944-0472.11.3.1689; and Ami J. Abou-Bakr, *Managing Disasters through Public-Private Partnerships* (Washington, DC: Georgetown University Press, 2012).

7. A. L. W. Vogelaar and M. T. I. B. Bollen, "The Role of Communication and Information in Civil-Military Cooperation in Humanitarian Operations," in *Information in Context* (The Hague, Netherlands: Ministerie van Defensie 2000); and Bollen, "Working Apart Together."

8. *Civil-Military Relationship in Complex Emergencies* (Geneva, Switzerland: Inter-Agency Standing Committee, 2004), 5.

9. *Foreign Military and Civil Defence Assets in Support of Humanitarian Emergency Operations: What Is Last Resort?* (New York: United Nations Office for the Coordination of Humanitarian Affairs, 2012).

10. *NATO Civil-Military Co-operation (CIMIC) Doctrine*, Allied Joint Publication 9 (Brussels, Belgium: North Atlantic Treaty Organization, 2003).

11. *Civil-Military Operations*, Joint Publication 3-57 (Washington, DC: Joint Chiefs of Staff, 2018).

12. Gwendolyn Bakx, Jori Kalkman, and Myriame Bollen, "Civil-Military Interaction Meets Civil-Military Relations: Confronting the Two Literatures in a Reflection on Ambidextrous Civil-Military Practices," in *The Yin-Yang Military: Ambidextrous Perspectives on Change in Military Organizations*, ed. Jacqueline Heeren-Bogers et al. (New York: Springer International Publishing, 2021), https://doi.org/10.1007/978-3-030-52433-3_5.

13. Peter B. Kraska, "Militarization and Policing—Its Relevance to 21st Century Police," *Policing* 1, no. 4 (2007), https://doi.org/10.1093/police/pam065.

14.   Uriel Rosenthal, Paul 't Hart, and Alexander Kouzmin, "The Bureau-Politics of Crisis Management," *Public Administration* 69, no. 2 (1991), https://doi.org/10.1111/j.1467-9299.1991.tb00791.x; and Jori Pascal Kalkman and Peter Groenewegen, "On Frontline Workers as Bureau-Political Actors: The Case of Civil-Military Crisis Management," *Administration & Society* 51, no. 7 (2019), https://doi.org/10.1177/0095399718780581.

15.   Bollen, "Working Apart Together."

16.   See Rémy Hémez, "The French Army at a Crossroads," *Parameters* 47, no. 1 (2017).

17.   Paul Knox Clarke, *Who's in Charge Here?: A Literature Review on Approaches to Leadership in Humanitarian Operations* (London: ALNAP, 2013); and Kalkman, "The Expanding Domestic Role of Western Armed Forces and Its Implications."

18.   Naim Kapucu, "The Role of the Military in Disaster Response in the U.S.," *European Journal of Economic & Political Studies* 4, no. 2 (Winter 2011); and Donald P. Moynihan, "A Theory of Culture-Switching: Leadership and Red-Tape during Hurricane Katrina," *Public Administration* 90, no. 4 (December 2012): https://doi.org/10.1111/j.1467-9299.2011.02017.x.

19.   William Banks, "Who's in Charge: The Role of the Military in Disaster Response," *Mississippi College Law Review* 26, no. 1 (2007).

20.   Sarah Kenyon Lischer, "Military Intervention and the Humanitarian 'Force Multiplier'," *Global Governance* 13, no. 1 (January–March 2007).

21.   *Steering Committee for Humanitarian Response: Position Paper on Humanitarian-Military Relations* (Geneva, Switzerland: Steering Committee for Humanitarian Response, 2010).

22.   Marjan Malešič, "The Impact of Military Engagement in Disaster Management on Civil-Military Relations," *Current Sociology* 63, no. 7 (2015), https://doi.org/10.1177/0011392115577839.

23.   Jori Pascal Kalkman, "Military Crisis Responses to COVID-19," *Journal of Contingencies and Crisis Management* 29, no. 1 (March 2021), https://doi.org/10.1111/1468-5973.12328.

24.   Sinead Walsh and Oliver Johnson, *Getting to Zero: A Doctor and a Diplomat on the Ebola Frontline* (London: Zed Books, 2018); Adam Kamradt-Scott et al., "Civil–Military Cooperation in Ebola and Beyond," *Lancet* 387, no. 10014 (2016), https://doi.org/10.1016/S0140-6736(15)01128-9; and Christopher Watterson and Adam Kamradt-Scott, "Fighting Flu: Securitization and the Military Role in Combating Influenza," *Armed Forces & Society* 42, no. 1 (2016), https://doi.org/10.1177/0095327X14567364.

25.   Kathleen Tierney, Christine Bevc, and Erica Kuligowski, "Metaphors Matter: Disaster Myths, Media Frames, and Their Consequences in Hurricane Katrina," *Annals of the American Academy of Political and Social Science* 604, no. 1 (2006), https://doi.org/10.1177/0002716205285589.

26.   Tierney, Bevc, and Kuligowski, "Metaphors Matter."

27.   Barry Buzan, Ole Waever, and Jaap de Wilde, *Security: A New Framework for Analysis* (Boulder, CO: Lynne Rienner Publishers, 1998); and Sarah Léonard, "EU Border Security and Migration into the European Union: FRONTEX and Securitisation through Practices," *European Security* 19, no. 2 (2010), https://doi.org/10.1080/09662839.2010.526937.

28.   Myriame Bollen and Joseph Soeters, "Partnering with 'Strangers'," in *Managing Military Organizations: Theory and Practice*, ed. Joseph Soeters, Paul C. van Fenema, and Robert Beeres (London: Routledge, 2010).

29.   See Richard J. Hayes Jr., "DOD Response under the Stafford Act: A Call to Action," *Joint Force Quarterly*, no. 77 (2015).

30.   Peter D. Feaver, "Civil-Military Relations," *Annual Review of Political Science*, no. 2 (1999), https://doi.org/10.1146/annurev.polisci.2.1.211.

31.   Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, MA: Belknap Press, an imprint of Harvard University Press, 1981).

32. Morris Janowitz, *The Professional Soldier: A Social and Political Portrait* (New York: Simon and Schuster, 2017); and James Burk, "Theories of Democratic Civil-Military Relations," *Armed Forces & Society* 29, no. 1 (Fall 2002), https://doi.org/10.1177/0095327X0202900102.

33. Douglas L. Bland, "Patterns in Liberal Democratic Civil-Military Relations," *Armed Forces & Society* 27, no. 4 (2001), https://doi.org/10.1177/0095327X0102700402; and Vladimir O. Rukavishnikov and Michael Pugh, "Civil-Military Relations," in *Handbook of the Sociology of the Military*, ed. Giuseppe Caforio (New York: Springer, 2006), https://doi.org/10.1007/978-3-319-71602-2_7.

34. Rebecca L. Schiff, "Civil-Military Relations Reconsidered: A Theory of Concordance," *Armed Forces & Society* 22, no. 1 (1995), https://doi.org/10.1177/0095327X9502200101.

35. Bland, "Patterns in Liberal Democratic Civil-Military Relations."

36. Derek Lutterbeck, "Blurring the Dividing Line: The Convergence of Internal and External Security in Western Europe," *European Security* 14, no. 2 (2005), https://doi.org/10.1080/09662830500336193.

37. Kalkman, "Military Crisis Responses to COVID-19"; and Nina Wilén, "The Military in the Time of COVID-19: Versatile, Vulnerable, and Vindicating," *PRISM* 9, no. 2 (2021).

38. Thomas E. Drabek and David A. McEntire, "Emergent Phenomena and Multiorganizational Coordination in Disasters: Lessons from the Research Literature," *International Journal of Mass Emergencies and Disasters* 20, no. 2 (August 2002); Aida Alvinius et al., "Emotional Smoothness and Confidence Building: Boundary Spanners in a Civil-Military Collaboration Context," *International Journal of Work Organisation and Emotion* 6, no. 3 (2014); and Jori Pascal Kalkman, José H Kerstholt, and Maaike Roelofs, "Crisis Response Team Decision-Making as a Bureau-Political Process," *Journal of Contingencies and Crisis Management* 26, no. 4 (December 2018), https://doi.org/10.1111/1468-5973.12243.

39. Bollen, "Working Apart Together"; and Alvinius et al., "Emotional Smoothness and Confidence Building."

PLAN E
A Grand Strategy for the Twenty-first Century Era of Entangled Security and Hyperthreats

Elizabeth G. Boulton, PhD

Abstract: A transdisciplinary research project investigated the idea of framing climate and environmental change (CEC) as a new type of threat: a hyperthreat. Traditional military analytical methods were used to assess the hyperthreat and its context and develop ideas about how an adequate response could be conceived. This approach contrasts to prior literature and longstanding geopolitical discourse that identify the risks of taking a securitization approach. Instead, the author argues that it is now riskier not to consider CEC within a mainstream geopolitical and nation-state security strategy. When the hyperthreat of CEC is centered as the main threat to be contained, and its relationship to other threats is analyzed, startling new pathways to stability emerge. The research developed a new theoretical approach called "entangled security" to develop an initial new "grand narrative" and "grand strategy" (PLAN E). This article offers a vision of how military theory can be reimagined to support new policy directions and security priorities.

Keywords: PLAN E, hyperthreat, entangled security, climate change, hyperobject, military strategy, climate emergency, mobilization, transdisciplinary

During the 2019–20 Australian bushfire catastrophe, to effectively convey the magnitude of what they were experiencing, public discourse suddenly became littered with warlike terms and analogies. People

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spoke of the "next bushfire assault," "ember attacks," and doing "whatever it takes to defend the town." Navy ships evacuated citizens, and a climate scientist argued that "failing to adequately plan for the known threat of climate change . . . should now be considered . . . an act of treason."[1]

Similar language is seen in other global climate extremes and emergencies. At such times, the author proposes, threat-like language is used by people not because they wish to securitize the problem, but rather because it helps them to articulate and describe their experiences. Similarly, in geopolitical discourse, describing climate and environmental change (CEC) as a "threat" is not novel —it is pervasive. In the Pacific Island Forum's "Boe Declaration on Regional Security," climate change is described as the "single greatest threat," while at the United Nations (UN) Security Council, Sir David Attenborough proposed CEC presented "threats to security of a new and unprecedented kind."[2] Meanwhile, in the United States the Joseph R. Biden Jr. and Kamala Harris administration has put "the climate crisis at the center of US foreign policy and national security."[3] To be elaborated on below, in academia, climate and environmental change has prompted widespread revision of how security is understood.

This article reports on a research project that centered around this question: If CEC *is* framed as a new type of threat—existential, catastrophic, or an emergency—then could extant military threat analysis methods be applied to the problem to inform civil response? The focus of the exploration was on *deep frames,* or the theoretical conception of threat, with traditional threat analysis methods used in a light manner. The term deep frames comes from neuro and cognitive science research; it refers to complex networks of neuron pathways that hold a person's guiding worldview, identity, values, and influence decision making—mostly at the subconscious level. [4] As cognitive scientist George Lakoff writes:

> Real reason is: mostly unconscious (98%); requires emotion; uses the "logic" of frames, metaphors, and narratives; is physical (in brain circuitry); and varies considerably, as frames vary.[5]

With this *Journal of Advanced Military Studies* issue exploring military contributions to disaster response, the following article proposes that contributions could also be intellectual: military theory can be applied to the planetary-level disaster of climate as well as to ecological crisis.

To introduce the research, the article will provide an overview of the development of the hyperthreat concept and reflect on the strategic rationale for threat framing. Next, prior climate-security literature will be reviewed, with an explanation of how this research departs from previous work and seeks to address gaps in knowledge. The article will then describe the methodology used for the research project. The bulk of the article then turns to discussing the new research insights and conclusions reached. The outcome of the research is a prototype grand strategy, called PLAN E, which has also been published separately in *Expeditions with MCUP*.[6] Because this research is transdisciplinary and uses

technical terms from a range of disciplines and involves the creation of new terms, a glossary is provided to aid comprehension across specialties.

Ecophilosopher Timothy Morton and Climate as a Hyperobject

Drawing on Clausewitzian approaches, the first phase of the research focused on developing an understanding of the nature and form of the climate and environmental threat and determining its underpinning sources of power. Pivotal to this exploration was ecophilosopher Timothy Morton's concept of global warming as a "hyperobject." Morton's work was notable for its abrupt departure from the norms of climate discourse, whereby instead of presenting humanity with long lists of statistics, Morton materializes global warming. The *hyperobject*, Morton argues, displaces humans as the most powerful actor on Earth and renders humanity now weak, lame, and vulnerable.[7] It is a complex notion and new philosophical vision; however, in simple terms, a hyperobject is a gigantic new "thing" that humanity has not encountered before; it moves like fog, is diffused through everyday life, and is beyond human sensory and perceptive capacities. The hyperobject's presence disrupts and displaces humanity's sense of existential identity:

> Yet what has happened so far during the epoch of the Anthropocene has been the gradual realization by humans that they are not running the show, at the very moment of their most powerful technical mastery on a planetary scale. Humans are not the conductors of meaning, not the pianists of the real.[8]

Focusing on a New Form of Violence—the Hyperthreat Concept

Morton's hyperobject theory was then placed into a security context to develop the related concept of a hyperthreat:

> The *hyperthreat* has warlike destructive capabilities that are so diffuse that it is hard to see the enormity of the destruction coherently nor who is responsible for its hostile actions. It defies existing human thought and institutional constructs.[9]

In contrast to the more commonly used *crisification* framings like "climate crisis" or "ecological emergency"—which highlight urgency—the hyperthreat frame spotlights the harm, killing, violence, destruction, and loss of freedoms imposed by unraveling ecological and climate systems.[10] This approach was also informed by and extended Rob Nixon's concept of *slow violence*, whereby destruction of the environment (through impacting people's livelihoods, health, food, or water supply) can inflict harm and kill slowly.[11] Another influence on the hyperthreat concept were ecotheological approaches, which focus on "creation care" and question how the "do not kill" ethic might apply in the context of an ecological crisis.[12] All of this deliberation led to the conclusion, embedded within the hyperthreat concept, that security theorists need to revise their understandings of culpability or hostile intent to cause harm.

In comparison to Morton's hyperobject frame, the hyperthreat notion includes general environmental destruction and degradation, not just global warming. Also, the hyperthreat notion dares to reclaim some human agency. Concepts from military studies, like the importance of moral forces and the capacity to mobilize around overwhelming threat, inform the development of the hyperthreat notion. For example, applying just war theory to the hyperthreat led to the argument that there are three good reasons for humans to mobilize against the hyperthreat: one, the risk of general destruction; two, the loss of autonomy and freedom; and three, due to survival imperatives.[13]

Application of a Hyperthreat Framing

Once a concept of threat had been developed, it was then possible to begin the second phase of the research, which involved subjecting the hyperthreat to a modified threat analysis and response planning activity. In turn, this led to the development of PLAN E.

Strategic Logic

As a preliminary, the strategic logic for a threat framing approach needs to be expanded on. First, grand strategy—a notion subject to "endless debates"—generally refers to a type of statecraft that can "co-ordinate and direct all the resources of a nation."[14] It may comprise a plan, a set of principles, or a pattern of behavior.[15] Grand strategy seeks to shape future events, rather than be shaped by them; it is proactive and creative in that it may involve creating the means to achieve desired ends.[16] In this research, grand strategy was applied to both nation-states and to an assemblage of nations, such as those committed to the Paris Agreement of 2015.

Second, foundational Clausewitzian logic—that security strategy serves political objectives—is applied to the hyperthreat.[17] To explain, what if the Paris Agreement and various climate emergency declarations are accepted as representing the will of the global populace? If these establish that global warming and ecological breakdown constitute a significant and urgent threat, then it follows that security strategy must reorient to support the larger political objective.

Accordingly, this research anticipates the civil sector requesting a new climate-environmental survival-based security strategy but cannot specify exactly how this would come about. Speculatively, a mandate could be achieved through multiple declarations of climate emergency by cities, regions, nation-states, or other groups around the world or through other, yet-to-emerge, new political concepts such as Extinction Rebellion's proposed Citizens' Assembly on Climate and Ecological Justice or political rewilding.[18] Alternatively, militaries might initiate investigation as a part of contingency planning.

Prior Research: Climate-security Discourse Is Incoherent

The logic of extant approaches to geopolitical security has been seriously questioned since 1995, when the UN Commission on Global Governance suggest-

ed that "the concept of global security must be broadened . . . to include the security of people and the security of the planet."[19] Since then, expansive research on human and planetary security has ensued, accompanied by arrays of new projects, initiatives, and conceptual approaches, reviewed previously.[20]

Some further examples help outline the parameters of this discussion. Challenging the Copenhagen School ideas that "threats are socially constructed," Maria Julia Trombetta argued security is also about "survival, urgency and emergency"—its meaning relates to context.[21] Conversely, Joshua W. Busby cautioned on a loss of coherence when too many problems are placed in the "security box"; instead, he prefers a pragmatic focus—a careful analysis of the ways in which climate change might impact the state and the state's interests.[22] Alternate concepts include a human, gender, and environmental security approach (HUGE) or a focus on ecological security.[23]

More recently, ecological security research has morphed into the broader fields of existential threat, collapsology, and global catastrophic risk (GCR). GCR research examines potential "global systems death spirals"; linkages between global warming, food insecurity, and societal collapse; and has proposed that security must now be understood as relating to "the survival of humanity."[24] However, despite this wide-ranging planetary security literature and discourse, at the meta-strategic level, the speech act (of describing CEC as an existential threat) has yet to fundamentally alter humanity's security posture.

Conceptualization remains a problem. A Swedish study concludes that climate security discourse is fragmented and incoherent for two main reasons. First, the discourse is constrained by a siloed structure where "different policy communities use different concepts to frame security risks posed by climate change," while, second, there is limited institutional capacity to create cooperation and synergies.[25] Examples of these different concepts, discussed by Malin Mobjörk et al., include resilience approaches; analyses of fragility, vulnerability, or insecurity; climate-resilient peacebuilding; and conflict-sensitive climate programming.

Analyzing the same problem, Lisa M. Dellmuth et al. find there is a lack of theoretical or empirical research on how to integrate the varied climate-security approaches that are found across different intergovernmental organizations (IGO) or to assess their effectiveness. They conclude that

> there is little evidence that climate change has been coherently securitized across IGOs, and scholars' debate whether we are witnessing a "failed securitization" of climate change or a "climatization" of specific security-related issues such as defense, migration, and development.[26]

Likewise, in overviewing practice, Joshua Busby identifies a patchwork of measures, including the United Nation's "climate security mechanism," which seeks to mainstream climate security considerations into general planning and integrated risk assessment procedures. Yet, he laments the lack of any systemic

approach or solution: "the discussion of threats and policy initiatives begs the question of what to do."[27]

Pertinent to climate-security discourse is other research on the gendered nature of both climate policy and traditional security.[28] Collectively, this literature finds that climate policy and mainstream security approaches are predominantly conceived in hegemonic masculine terms, which emphasize the importance of science, economics, traditional hard power military approaches, and technical solutions. In contrast, coded as feminine are ethics and human and planetary security issues, which were rendered less important. Thus, gendered frames may distort threat perception.

A feature of prior discourse is persistent fear and suspicion toward securitization, which is often associated with top-down, simplistic, and draconian measures that would erode human rights.[29] On existential risk, Nick Bostrom warns that

> speculative risk mongering could be exploited to rationalize self-serving aggressive action, expansion of costly and potentially oppressive security bureaucracies, or restrictions of civil liberties that keep societies free and sane.[30]

Accordingly, military input has been limited to providing advice about the security impacts of a changing climate and environment and assisting with disaster response. In a report for the UN Security Council, an "informal expert group" of military advisors on climate security suggest their future role could involve providing "fine-grained, contextualized analysis" to UN agencies and helping to persuade decision makers on the need for action. They warn that if the UN Security Council fails to respond to the climate crisis, it will "appear out of touch with fundamental threats to international peace and security—and human survival."[31]

Related to hesitation about securitization is research on climate action, which finds that doom and gloom narratives and top-down solutions may be counterproductive, while bottom-up transformative win-win narratives are better at motivating climate action.[32]

Climate-security literature often calls for a new approach. A wide-lens review of the United Kingdom's security posture, which considered organized crime, infectious disease, financial stability, and climate change found that the strategy was "unbalanced" and its strategic moorings were "unsound."[33] In 2016, international relations practitioners issued an "urgent call for a profound restructuring of international politics and order that can assure the planet's survival."[34] More recently, Simon Dalby argues that "traditional notions of security need a rapid overhaul," and he advocates for a focus on decarbonization and making flourishing ecosystems.[35] Such calls set new ambitions and seek a change of focus and priority, yet do not always describe what an alternate strategy might look like.

This research separates itself from prior work in five ways. First, the hyper-

threat of climate and environmental change is centered as the primary threat, with the aim to find a pathway to a *safe Earth* (avoiding dangerous climate change and ecological collapse) in the context of other security threats.[36] Second, the approach is scaled to the magnitude of the problem; it answers calls for a crisis or emergency response. Third, it applies a different and newly curated transdisciplinary lens to the problem, called *entangled security,* which acknowledges the interconnected nature of planetary, human, and state security. Fourth, economic actors are brought into the threat analysis process. Fifth, applying the deep framing research insights, creative, and description narrative techniques are used to convey the results via PLAN E.

Methodology

In broad terms, the hyperthreat was subjected to established threat analysis methods developed in military, security, and strategic studies, such as the military appreciation process (MAP) or the strengths, weaknesses, opportunities, and threats (SWOT) strategic planning method. However, these traditional methods were only used in a light manner; they provided the overarching analytical scaffolding within which more experimental philosophical and theoretical exploration could occur. Also, and akin to standard military planning practices, threat analysis methods were modified to first suit the unique circumstance being analyzed (the hyperthreat) and second to iteratively respond to the results of the analysis. An eagle-eye overview of the entire research project is offered below, which describes the steps taken but also highlights some of the key insights and subsequent decision points made about *how* to analyze the hyperthreat and develop strategic response ideas.

First, the research began with a critical inquiry into the risks of a threat framing. Exploration of linguistics; genocide studies; sociology; psychology; hate-crimes research; securitization theory; and militarization studies highlighted many risks, which peaked when threat was linked to a particular group identity. Yet, faulty threat analysis, whereby the nature of the threat was misunderstood, obscured, or manipulated also created risk, as it impaired capacity for effective response. Balancing these two sets of risks led to an approach that focused on *harm-doing* and actions that strengthened the hyperthreat, paired with a steadfast determination to avoid assigning threat identities.[37]

The second step was a preliminary problem scoping activity, which drew on the Joint Military Appreciation Process (JMAP) and design thinking to undertake an initial iterative frame-environment-threat analysis and center of gravity (COG) analysis.[38] In analyzing humanity's failures to respond effectively to climate and environment issues, and what might allow a seismic pivot, drawing on a range of climate policy and communication research, it was deduced that the COG for humanity to succeed was its "deep frames" (figure 1).[39]

Accordingly, for the third step, research analytical activity narrowed its focus to one sole objective: the hunt for a new deep frame or way of conceiving threat and security in the Anthropocene. In simple language, to solve the COG

Figure 1. Iterative frame-environment-threat analysis and COG determination
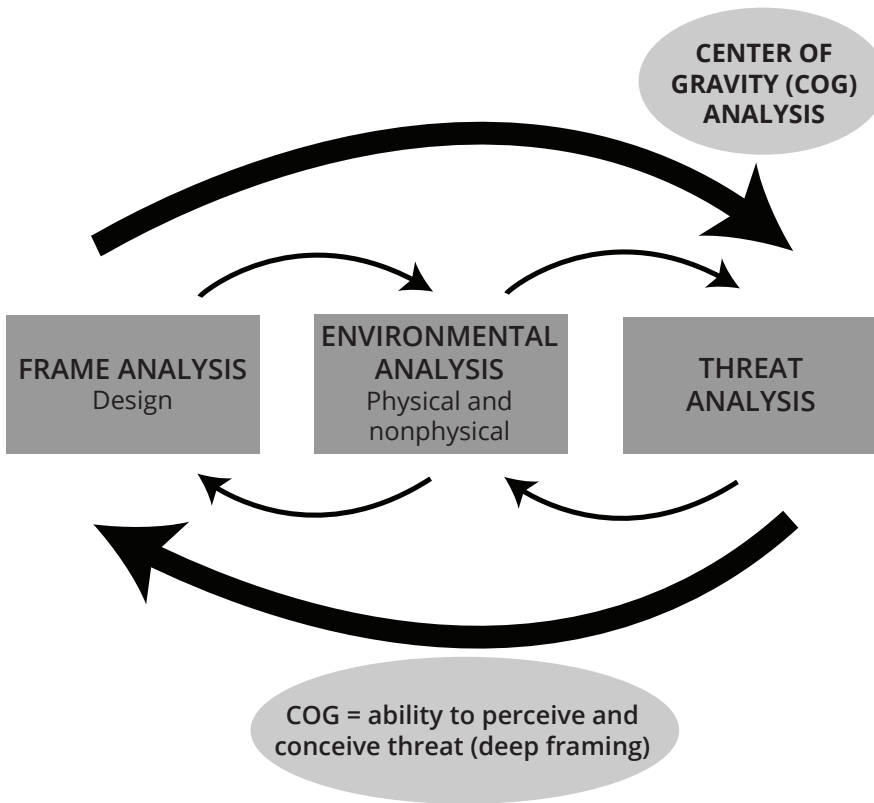
problem, a new philosophy was required. Already discussed, and previously published, the first part of this was developing a new concept of threat—the hyperthreat frame. However, a wide body of other theoretical work (figure 2) helped to develop a new conceptual approach to security in an era of climate and environmental change, called *entangled security*.

In its simplest form, *entangled security* appreciates that planetary, human, and state security are inherently entangled and interconnected (figure 3). Entangled security's more complex theoretical aspects are summarized in figure 4.

Once the new framing devices or theoretical approaches had been developed—the *hyperthreat* and *entangled security* notions—it was then possible to apply these concepts to real-world considerations.

Thus, the fourth step was effectively the environmental and threat analysis stage of MAP. The aim was to test and refine the developing theory but also to gain initial insight into the full nature of the threat and explore ideas about what a realistic, workable hyper-response might entail. In keeping with standard threat analysis protocols, two areas were explored: first, the threat context, and second, the general context. For the general context, a new analytical

Figure 2. Deep framing and threat—philosophical reset

DISCIPLINES	THEME	FRAME	ENVIRONMENT	THREAT
Neuroscience, sociology, discourse studies	Threat language	Accurate assessment is a survival issue	Threat manipulation and distortion	Societal priority and resourcing
Ecophilosophy, security theory, ecotheology	Hyperobject Hyperthreat	Post-human equality with matter	Overpowering	Viscous, nonlocality, temporal undulation, phasing, interobjectivity
		Just war theory	Humans can mobilize	Threat is often "legal"
Nonhuman centered philosophy, quantum physics	Agential realism	Fluid framing Continuous discourse	Partners with matter Quantum leaps (agency)	Unjust intra-action Justice = existential rule
Feminism, liberation theory	Pink swan	Entanglement Affective knowing Care	Where are the women? Liberation theory Cleanup job (agency)	Intimate terrorism Patriarchy/master story is the problem/threat
Masculinity studies	Reflective man	Nature part of selfhood Place to rejuvenation Humility, sacrifice	Broken, needs repair, help injured friend	Shame, sadness on own destructive power Personal defeat Aggrieved man
International relations, security, aid/development, resource sector	Tribal discourse	Tribal norms and taboos limit perception	Leaderless rabble Environment = ally in trouble	Which tribes inadvertently aid hyperthreat?

Source: courtesy of author, adapted by MCUP.

Figure 3. Entangled security
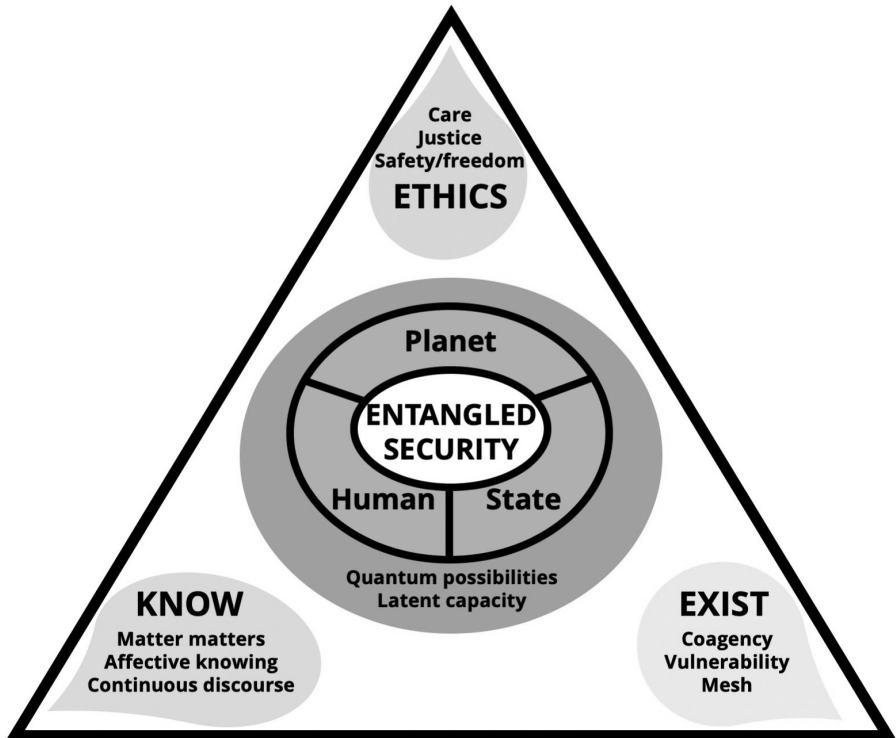
Source: courtesy of author, adapted by MCUP.

method was developed called a "tribal discourse." The tribal discourse involved analyzing the hyperthreat in an entangled security environment, which meant considering the perspectives of people and organizations within each of the planetary, human, and state security sectors.

Figure 4. Entangled security conceptual compass

Entangled Security

A conceptual compass for security in the twenty-first century

Entangled security: all forms of life on Earth face a shared threat. One's security (be they a human, a species of tuna, or a country) is entangled with the security of innumerable others, such as coastal fishing workers, a terrorist pirate group or a migratory seabird. If the hyperthreat results from present-day entangled relationships among the living planet, humanity, and states being woven in a dysfunctional way, it need not remain so. Entanglement could constitute a form of strength. How could such relationships be rewoven, such that they enhance interdependent security?

Quantum possibilities[1]
Unruly electron behavior tells us abrupt state changes are possible; humanity can change and reconfigure quickly.

Latent capacity
Humanity's full capacity to respond creatively and boldly to overwhelming threat remains idle, hidden in institutional and vocational silos. Humanity has many existing capabilities and skills that have not been effectively harnessed.

KNOW
(epistemology, how we know)

Care[4] **ETHICS**
Care ethics rejects the idea of a self-reliant autonomous human. Care is essential to human flourishing and human security. It is a good hyperobject; it provides people strength, stability, affective security.

Matter matters[1]
A nonhuman centric viewpoint. The condition of matter must be represented and spoken for in analytical, planning, and decision-making mechanisms.

The river's point of view is important and so too is the local frog species. Matter is vibrant, alive, and has agency.

Justice[1]
Extends across generations, time, and to matter. It is an ordering principle of the universe. To set the conditions for justice, establish *continuous discourse*—capacity for other (human/nonhuman) matter to be heard.

Safety-freedom paradox
Unbridled freedom for some may cause harm to others.[3] Freedom must account for Earth's finite limits for overall safety. Humanity must have the freedom to save themselves from the hyperthreat.

Central diagram labels:
Care / Justice / Safety/freedom — ETHICS
Planet — ENTANGLED SECURITY — Human / State
Quantum possibilities / Latent capacity
KNOW — Matter matters / Affective knowing / Continuous discourse
EXIST — Coagency / Vulnerability / Mesh

Affective knowing
Understanding issues at emotional and sensory levels is a powerful sense-making method. Precognitive signals help re-wire old cognitive scaffolding. The emotions and experiences of pain of all living species matter. *Affective insecurity* refers to people feeling threatened or insecure; it includes identity issues such as when people perceive that their sociocultural safety is threatened. We can cultivate positive affective states and affective connections with the nonhuman. Rewilding hearts. Joy in new ways of being. Utopianism of the way.[5]

EXIST (ontology, nature of being)

Coagency
Partnership with nonhuman. Nature is humanity's most important ally (#Ally1). Natural climate solutions help to contain hyperthreat. Humanity must reclaim agency and take responsibility for dynamics presently out of control and having deleterious security impacts.[2]

Continuous discourse[1]
Knowing and accurate framing is fluid, dynamic. To see and know this new physical and onto-epistemological world as it emerges out of the mist, continuous dialogue with the other is required. Three aspects:
1. *Differentiation* (tribal discussions)
2. *Continuous discourse* (tribes listen to other tribes)
3. *Emergent framing* (mutual listening, discourse allows new understanding)

Vulnerability
Must account for human exposure to the HT, but also full spectrum of human vulnerability (poverty, obesity, addiction, mental illness, etc). Therefore, it provides bolstered care, strengthening, and protection.

Mesh
The hyperthreat is interwoven into the minutiae of daily human life (i.e., how toothbrushes are manufactured). **Mesh interventions** involve carefully unravelling from hyperthreat gripping tentacles and reweaving innumerable microactivities into the hyper-response. A thread-by-thread strategy occurs at micro levels, widely across the expanse of human activity. #HumansAsAnts. Each person, household, business, or other group does a tiny bit, but when synchronized to the same objective, this creates mass or massive impact.

Key influences: 1. Quantum possibilities, matter, matters, continuous discourse, justice (Karen Barad). 2. Agency (Sally McFague). 3. Freedom (Maria Mies, Vandana Shiva). 4. Care (Kathleen Lynch, Niall Hanlon, Fiona Robinson). 5. Utopianism (Kate Rigby).

Source: courtesy of author, adapted by MCUP.

The fifth and final step saw the *hyperthreat* and *entangled security* frames placed into a strategic planning process (figure 5) to develop PLAN E. Analysis methods included a SWOT analysis; a principle of war analysis; a principle of entangled security analysis; and real-options analysis.[40]

Figure 5. Strategic planning and the hyperthreat
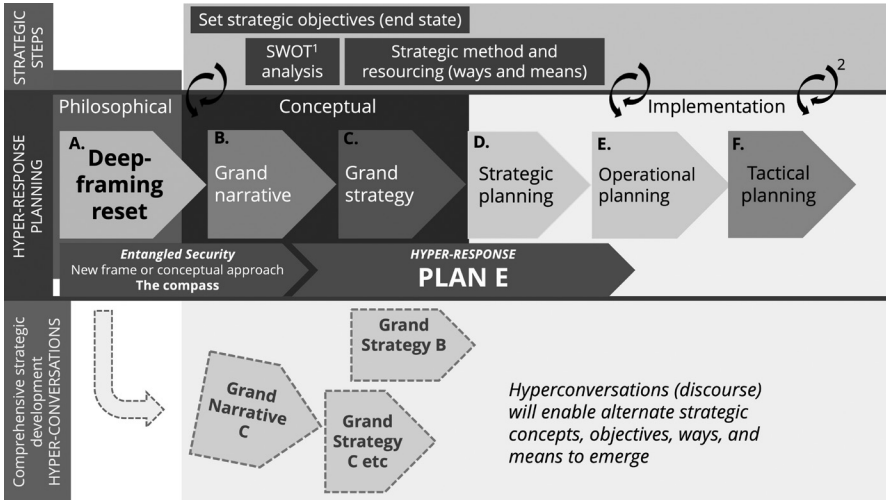
Source: courtesy of author, adapted by MCUP.

Research Outcomes

To recap, this research applied a modified MAP to the threat of climate and environmental change, which broadly comprised a frame analysis, an environmental analysis, and a threat analysis. The outcomes for the majority of the framing analysis activity (steps one, two, and three) have been briefly discussed above or published previously.[41] Accordingly, here the article will report on the outcomes of the subsequent steps of the MAP and strategic planning process (steps three to five).

Step three—the final part of the framing analysis—was the development of the entangled security theory. Due to scope, it will only be possible to describe part of this theoretical development. The focus in this article is the most complex component—an introduction to "agential realism"; a new quantum science-based philosophy; and an explanation of how it informed the entangled security concept.

The analytical results from step four, the environmental and threat analysis process, will be described in more detail. Finally, step five, which involved strategic planning and creating a concept of operations (PLAN E), will be introduced.

Step 3: Frame Analysis—How Agential Realism Informs "Entangled security"

If deep frames and extant modern-era worldviews were preventing humanity from understanding its new threat context, there was a need to seek out innovators developing alternate philosophies that were more attuned to the nature of the Anthropocene. A key trend was removing humans as the locus of meaning

and using insights that emerge from ecology and physics as the new philosophical bedrock and starting point. While Timothy Morton's hyperobject notion conveys a nonanthropogenic-centered worldview and helps people to "think like a planet," quantum physicist and philosopher Karen Barad guides us on how to "think like an atom."[42]

Barad's *agential realism theory* introduces the idea that, at the quantum level, the nature of existence is inherently dynamic, entangled, and subject to abrupt change. For example, it involves "unruly electrons" that may make quantum leaps. Matter—human or otherwise—cannot avoid impacting and colliding with other matter and thus inflicting "agential cuts"—that is, leaving a mark on the "other." This is the "intra-active" and inescapably entangled nature of existence.[43] If existence is like this, across her body of work Barad then explores the far-reaching implications it holds for ethics or notions like justice, time, and agency.

Highly pertinent to questions about framing and the hyperthreat, and building on Niels Bohr's two-split experiment, agential realism also explores entanglement between matter and meaning.[44] Barad proposes that meaning emerges through intra-active conversation between matter:

> In an agential realist account, discursive practices are not human-based activities but specific material (re) configurations of the world through which boundaries, properties, and meanings are differentially enacted.[45]

Therefore, a quantum perspective instructs that because the nature of matter and existence has an effervescent, ever-changing quality, meaning making or conceptual development must also be fluid and responsive to the changing configuration of matter. Effective navigation of an entangled reality, Barad posits, requires "continuous discourse" between humans and all other matter.[46]

Agential realism has great significance for the question of climate and environment threat framing. It suggests that to be truthful, meaningful, and relevant, words such as "threat" or "security" must be part of the iterative reconfiguration of matter and meaning elicited by climate and environmental change. For example, if the intra-active impacts of greenhouse gases (GHG) (or forest clearing or plastic pollution in oceans) are harmful to other forms of life, then this must be captured within a discourse that is alive to the realities of material reconfiguring of life on Earth. In other words, it simply cannot be that while matter is undergoing seismic changes and having substantial agency and intra-active impacts, that old notions of threat or security remain stagnantly fixed to material conditions of a preclimate era.

Agential realism requires a nonhuman-centric approach to security and threats. However, it also expanded conceptual territory and allowed new questions to arise. For example, if harming other matter is more easily conceived as also hurting oneself because everything is entangled, what does that mean for how to consider a threat? In an entangled ethico-onto-epistemology, is the

most significant form of threat one that, like a cancerous cell, has the potential to endanger the wider web of intra-active matter?[47] What does an agential realist perspective mean for the notion of an "enemy"? Is enemy activity best conceived as actions that harm another entity's freedom of movement across an entangled web or its ability to intra-act—to exchange resources, to participate in intra-active becoming? Alternatively, by accepting entanglement, does this at least dilute and, at most, erase the whole notion of enemy? Could the concept of enemy be replaced with a range of new ideas and words that match entangled existence?

Overall, agential realism provided a rich conceptual space to review the idea of threat and reimagine threat response. It contributed six principles to the entangled security theoretical approach: the idea that "matter matters"; entanglement; the elevation of the principle of justice; the idea of quantum possibilities (random state changes); the need for continuous discourse for ongoing, accurate framing; and the idea of coagency—new forms of partnership between human and nonhuman matter.[48]

Step 4: Insights from Environmental and Threat Analysis
The Hyperthreat and the Threat Context

The hyperthreat sits within a threat context featuring increasing insecurity and instability. Global governance systems are less stable. The legitimacy of the global liberal, rules-based order, which was perceived as skewed in favor of Western nations, is fading.[49] Levels of democracy and freedom have deteriorated.[50] International organizations (IO) are finding themselves not fit for purpose, while those that oversee climate and energy issues face doubts about their legitimacy.[51]

Human insecurity is widespread. The poor as well as some women, ethnic, and cultural groups and other vulnerable groups face multivarious threats, which include domestic abuse, sexual violence, human trafficking, slavery, pedophilia, and hate crimes.[52] Efforts to address these problems have been stilted and slow.[53] Other concerns include the stability and fairness of global fiscal systems; artificial intelligence (AI) unaligned with human values yet surpassing human controls; and emblemized by the COVID-19 pandemic, increased risks and exposure to infectious disease that are linked to the ascension of the hyperthreat.[54] Analysis of 2018 UN Sustainable Development Goals (SDG) progress has found that, in the precoronavirus pandemic period, SDG achievement was undermined by two key factors: the early impacts of global warming and a deteriorating security environment.[55] Critically, as security degraded, helpers (from all ranges of nongovernmental organizations [NGOs] and development agencies) were hindered from undertaking their work, while climate and environmental impacts added another blow.

The 2021 SDG report found that the pandemic led to even more backsliding, especially in relation to poverty, food insecurity, and health. While there was a temporary dip in GHG emissions, and while there were more financial

resources allocated to climate action, the GHG growth trend resumed, with the pace of change still "woefully offtrack" to achieve the Paris Agreement objective to limit warming to 1.5 degrees Celsius. Overall, the climate and ecological crises continue unabated. In short, human vulnerability is increasing, while current methods of addressing interconnected SDG are proving inadequate.[56]

Affective insecurity is increasing, that is, *global citizens* feel less safe, physically and philosophically. Significant philosophical revisions and understandings of social and individual identity and freedom are under way, which unsettles peoples' sense of epistemological, ontological, and affective security. Psychological warfare and information operations, waged by multiple actors, including corporations, erode trust in institutions and perceptions of reality.[57] Other facets of this problem include conspiracy theories surrounding a corrupted global elite; a rise in domestic extremism; and the general psychological strategy of terror groups to disturb citizens' experience of feeling safe.[58]

Humanity is distracted from the hyperthreat by an increasing number of intrahuman tensions and violent conflicts. According to the Stockholm International Peace Research Institute (SIPRI), in 2020, after a decade of growth, world military spending totaled $2 trillion.[59] This spending reflects a general deterioration of the global security environment, but also expectations of greater conflict during the 2022–30 decade. Influential factors include a persistent baseline of many fragile states; increasingly sophisticated violent nonstate actors and the heightened prospect of major intrastate warfare, such as escalation of the Ukraine and Russia conflict; or war between the United States and Russia or China, or as some speculate, an Iran-China-Russia alliance against the West.[60] Such tensions could simmer along as "hot peace" style tensions, involving cyber interference and economic coercion, which could escalate to nuclear war. Alternatively, as John Keane postulated, in the case of China, relations may transition peacefully into a new world order featuring a powerful yet nonviolent Chinese "Galaxy Empire," which features some despotism mixed with Confucian inspired benevolent ideals.[61]

Regardless of what transpires, extensive preparedness for warfare during 2022–30, including expensive space war initiatives, will still drain much of humanity's intellectual, technological, and economic resources while also likely imposing continued pressures on Earth's climate and ecology. This occurs at the exact same time that transformative response to the hyperthreat is required. Thus, serious preparations for warfare, or actual warfare, risk impairing or crippling capacity for effective CEC hyper-response. Accordingly, a significant insight is that the current global military buildup could represent a situation whereby many nations are entering, unconsciously or perhaps because there seems no other option, into a new type of mutually assured destruction scenario.

A final feature of the threat environment is dubious capacity to restore peace—to fix societies once broken. The Intergovernmental Panel on Climate Change (IPCC) previously claimed that there are "well-established strategies

Figure 6. Tribal discourse
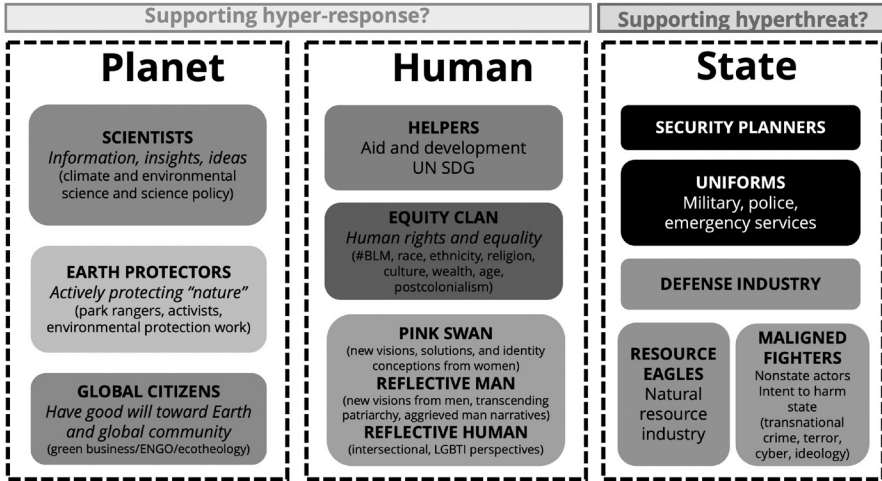
Generic tribes loosely grouped by their primary security foci and stance in relation to hyperthreat.
Source: courtesy of author, adapted by MCUP.

for managing violent conflict that are effective but require significant resources, investment and political will."[62] However, security analysts would caution that it is not that easy; it has not been possible to restore security in places like Syria, Afghanistan, Iraq, Honduras, or the Democratic Republic of the Congo, despite considerable resources having been spent and exhaustive political and diplomatic efforts attempted. This example reflects not only siloed and faulty threat analysis processes, but it also highlights the possibility that humanity has lost control of their capacity to achieve security and safety—echoing Morton's fundamental conclusions—that humans have lost agency to the hyperobject.

Tribal Discourse and General Context
Aside from the threat context, to understand the general context more deeply, and to apply an entangled security lens to this process, a new analytical method was developed called a "tribal discourse." *Tribal discourse* allowed analysis of key generic human tribes involved in an entangled security context, to explore their stance in relation to the hyperthreat (figure 6).[63] Overall, it was found that although many tribes are engaged in minor operations against the hyperthreat, unfortunately, humanity's most powerful tribes (those with a state security orientation) often abet the hyperthreat. Select analytical insights follow.

Planetary Security Tribes
Considering planetary security, scientists struggled with bridging the science-to-policy gap, and while global citizens showed great potential, at a global level, they still lacked the impact needed to contain the hyperthreat.

Of grave concern, however, and pertinent to a threat inquiry, was the cir-

cumstance of the "Earth protectors" who face an increasingly sophisticated, well-resourced, and sometimes militarized human threat.[64] Between 1996 and 2016, there were persistent annual growth rates in global environmental crime.[65] With an estimated market value of between roughly $90 to $276 billion U.S. dollars per annum, environmental crime is perpetuated by corporations, corrupted officials, and transnational criminal and terrorist networks.[66]

An increasingly quasimilitary style of operations has, in turn, led to green militarization.[67] Environmental crimes have cascading negative impacts: illegal logging and deforestation reduce carbon sinks, while crime networks undermine nation-states' governance capacity and legitimate income. Although occasional progress is made, overall, the literature portrays a sense that frontline agencies are overwhelmed.[68] For example, proponents of Botswana's controversial shoot to kill policy to address rhinoceros poaching argue that such approaches must be understood in the context of all other measures failing.[69]

As CEC impacts worsen, wilderness becomes rarer but also more lucrative. Correlated with degrading human security, environmental crime becomes a perverse new form of employment. Conceptually, new battalions of environment criminals are being raised, with greater technological and military capability, who are effectively aligned with the hyperthreat; that is, they increase its destructive power.

Human Security Tribes

As global instability and insecurity increases, the capacity of human helpers (the aid and development sector and the human protection regime) is also in decline.[70] When combined with the prospect of harsher hyperthreat impacts to come, this creates a downward spiral, called the Helper Hyperthreat Bind (figure 7), which must be considered a red flag.

Analyzing potential consequences, one question is how a lack of help may be perceived by the most vulnerable. At best, nonhelping might be accepted as a noninterventionalist strategy. However, there is also the risk that nonhelping is perceived as, or manifests as, a strategy that appears to leave people to suffer, or worse, graduates to, by default or nonaction, to a let them die strategy. If it became evident that this was occurring, this in turn would likely legitimize a sense of grievance toward the developed world, which could manifest in destructive ways or be exploited by malevolent agents. The strategies of nonintervention or nonaction could also create a permissive environment for the worst forms of human behavior to emerge, such as genocide, slavery, and other forms of abuse. There are already early indicators of a link between global warming, or the onset of the hyperthreat, and increasing levels of slavery.[71]

However, another possibility is that the current structural quagmire of international organizations, humanitarianism, and the delivering of help could be interpreted as an opportunity to reorganize the systems of help, long criticized as constituting new forms of colonialism.[72]

Figure 7. The Helper Hyperthreat Bind
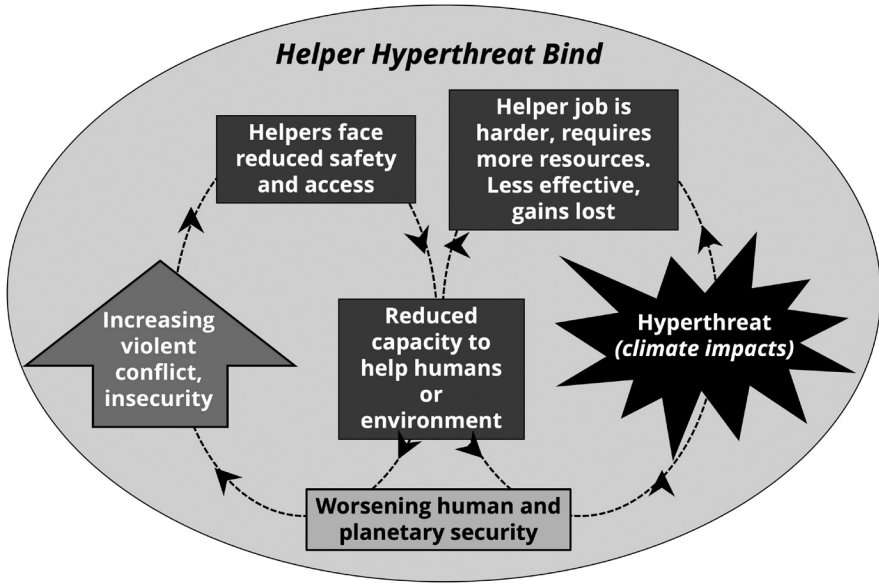
Source: courtesy of author, adapted by MCUP.

State Security Tribes
Maligned Fighters

For state security tribes, of concern is a prospective quasi partnership between the maligned fighters (nonstate actors with intent to harm others) and the hyperthreat; two examples help explain. The first is an analysis of nonstate armed groups in the Lake Chad region, Syria, Afghanistan, and Guatemala that concludes that global warming (the hyperthreat) is contributing to creating an environment in which such groups (maligned fighters) can thrive.[73] The second is the trend of terror groups' (maligned fighters) integrating control of environmental resources into their tactics, such as water or, less successfully, oil, which could be viewed as an early warning of a type of tactic that might be developed further during the next few decades.[74] Outside conflict zones, malevolent control, or disruption of environmental resources, can occur through targeting critical infrastructure.

State Security Tribes Misaligned

The most significant finding from the tribal discourse analysis was the incongruent stance of state security tribes, a claim that requires greater articulation through an introduction to three concepts: material security, systems maintenance, and dual-logic.

Material Security

Material security refers to the goods and natural resources (e.g., food, timber, steel, fuel, fiber, minerals, paper, etc.) that assist human societies and the

nation-state to function at a practical level. A crucial part of twentieth-century material security thinking, borne of experience, and which became hardwired into security planners' minds after World War I (WWI) and especially World War II (WWII), was the idea that oil is essential for military victory.[75] Potentially, current security and strategic approaches remain moored to this guiding worldview or deep frame, which links fossil fuels with security—an idea which is now at odds with countering the hyperthreat. More generally, after WWII, for Western nations at least, the state tribe's role in ensuring material security for their citizens was understood as an ethical undertaking—part of the postwar rebuild and resources for freedom narratives.[76] In the 1970s, due to a combination of oil shocks and limits to growth discourse, material security started to have greater ramifications for international relations and security policy.[77]

Systems Maintenance

A generic term to describe the security sector's role in *material security* is Doug Stokes's *systems maintenance* construct.[78] Stokes explains that as global supply chains became more vulnerable to disruptions, there was an increased global commons argument to use tools of force, like the Central Intelligence Agency (CIA) and the U.S. military to maintain the system. This phenomenon has also been described as a modern-era Lebensraum strategy, while others argue the logic also infuses stabilization operations.[79] Thus, under systems maintenance logic, protecting the hyperthreat has historically been regarded as a necessary and dutiful service to the nation.

While system's maintenance may be enacted in a way that is not deleterious to others, this is not always the case. Stokes finds systems maintenance approaches have led to human rights abuses and more authoritarian regimes.[80] The problem also needs to be considered alongside resource war literature and related testimony from a so-called economic hit man.[81]

The link between the 2003 Iraq War and oil, officially denied but best understood through Jeff D. Colgan's nuanced analysis, especially his causal pathways framework, is highly significant to hyperthreat deliberations.[82] Through a *systems maintenance* prism, the 2003 Iraq War can be viewed as being a war waged in support of the hyperthreat. Ironically, and revealing an incoherent grand strategy, at the same time this expensive quasi resource war was waged, *global citizens* (people with good will toward Earth and its global community) were developing new ways to achieve *material security* (ecoinnovations, zero-emission technologies), which would have benefited from greater resourcing and support from state tribes to be fully realized. Therefore, in simple terms, instead of going to war to secure fossil fuel resources, hypothetically and in hindsight, energy security could have been achieved through investing the same amount of government resources into a massive transition to renewable energy technologies and ecosensitive design, which would have also helped contain the hyperthreat.

Most concerning to PLAN E is that despite new awareness of the hyper-

threat and the increasingly counterproductive effects of system's maintenance, the state tribe trajectory remains largely unchanged. The nonprofit group Global Witness finds that *resource eagles* (the natural resource sector) are set to invest $4.9 trillion USD on exploration and extraction of new fossil fuel resources from 2020 to 2030; yet, the report argues that none of this additional activity can occur if global warming is to be limited to 1.5 degrees Celsius.[83]

The current buildup in global military spending, reflects *uniforms* (militaries, police, and emergency services worldwide) preparing for multiple conflict scenarios, many of which have systems maintenance dimensions. For example, the South China Sea dispute relates to control of shipping lanes and rich fisheries, but also access to the sea's natural gas and crude oil resources.[84] Furthermore, "Almost a third of global crude and over half of global liquid natural gas (LNG)" passes through the South China Sea, which includes 80 percent of China's crude oil imports and may contain "more oil than any area of the globe except Saudi Arabia."[85] Likewise, Russia's interests in the Arctic and China's interests in Antarctica and Africa revolve around material security concerns. In simple terms, extant military strategy supports a race for remaining resources, which could destroy what is left and imperil all.

Dual-logic

The above discussed incongruency leads to the expansion of Doug Stokes's concept of *dual-logic*.[86] Business-as-usual approaches to material security, which impose a system's maintenance burden on security agencies, poses two threats to humanity: one, intensification of hyperthreat power, and two, increased likelihood of geopolitical security destabilization and conflict.

In contrast with prior climate-security literature that considers whether CEC may lead to violent conflict, *dual-logic* suggests that, instead, the failure to rapidly transition to ecologically sustainable pathways, when first prominently identified to the global community as a type of security issue in the late 1980s to early 1990s, may already have had security impacts.[87] While impossible to prove, such an insight must inform state tribes' positioning in relation to the hyperthreat henceforth.

Overall, centering the hyperthreat as the most significant threat reveals that state and security tribes, humanities most powerful groups, are inherently misaligned with their raison d'être—protecting their human and nonhuman populations. To explain clearly: though many state tribes facilitating fossil fuel intensive infrastructure and harmful natural resource extraction to meet the material security needs of their populations, they inadvertently empower the hyperthreat.

Research on climate denialism highlights how state tribes can be hypnotized by the hyperthreat.[88] Through systems maintenance security operations, the uniforms facilitate hyperthreat growth. In undertaking disaster response roles, increasingly, uniforms also find themselves cleaning up after the hyperthreat. Security agencies do not reorient toward this new foe; rather, they re-

main its ally and its protector. Yet, if this strange, incoherent situation could be reversed, if humanity could reclaim and reorient its state tribes, the current balance of probabilities, which currently lie with a hyperthreat victory and a *hothouse Earth* outcome, could be recast.[89]

Threat Analysis: New Ways to Think about Threat

The research found that the underpinning ways in which a threat is commonly understood, at the deep framing level (subconsciously held entrenched world-views) is now mismatched to the way in which threat (violence, destruction, harm) will increasingly manifest in the twenty-first century. New ways of understanding threat are required, which in turn can inform what a new threat posture might look like; reflections on this are offered below.

Harm-doing defies conventional expectations of what a threat or what harm looks like. Akin to Hannah Arendt's description of the "banality of evil," with the CEC hyperthreat, there is the problem that those making the most shockingly harmful decisions do not look like an enemy or threat.[90] Rather, they may be a jovial person who volunteers at the local school clean-up day and bravely overcomes a cancer scare. There is also the problem that such decision makers exist on a spectrum from those who unconsciously participate in harmful decision making to those who do so knowingly yet sit within the law and those who are consciously undertaking harmful and illegal activity yet enjoy virtual impunity due to a lack of institutional capacity to address such harm.

Recalling the Stanley Milgram experiment and the way in which people readily defer their ethical decision making to respected authority figures, another factor could be that key decision makers who are consciously or inadvertently aiding the CEC hyperthreat may hold sanctioned authority, trust, and power.[91] Such decision makers may be a CEO or government official who wears a smart suit, exudes a sense of gravitas, and whose narratives orient around making valuable contributions to society. Yet, despite rhetoric and appearances, the decision making could be devastatingly destructive and threatening to many people and forms of life. This could be the greatest challenge to defeating the CEC hyperthreat: the awkwardness of confronting wrongdoing when it appears proper, with all the symbols of societal authority and validation. There is an incapacity to see threat when it is not dressed like a threat.

For modern Western nations, a particular challenge may be that, in official policy statements at least, it persistently perceives itself as the "good" protagonist, dedicated to upholding a liberal, rules-based order. The threat is predominantly characterized as some form of other, which exists not within but elsewhere. Accordingly, in the era of CEC, a most confounding idea is that this time the threat not only looks like oneself but is also within one's own society. This threat analysis presents a very difficult narrative conundrum, which, it is argued here, itself constitutes a highly significant aspect of the problem. Accordingly, there is a need to find a way to discuss and resolve these issues in a

way that does not dehumanize people, nor create ruptures to the sense of trust and cohesiveness within society.

As alluded to earlier, a key conclusion from this research was that because of the dangers of threat narratives, because the Paris Agreement depends on a spirit of cooperation, and because accurate threat analysis is important to humanity's survival, it is argued that the CEC threat focus should shift toward neutral identification of harm-doing. The key difference is that for CEC, a threat is not conceived as an identity (an individual or group). Rather, threat analysis and response planning can focus on actions that will harm others (including matter) or that will degrade planetary-human-state security.

Identification of harm-doing is merely step one. When it comes to preventing harm, a series of graduated responses would need to be developed. Because of the unique way in which the CEC hyperthreat manifests, at the lowest scale, ideally, this is bookended by a harm-to-help ethic. To explain, this would involve assisting entities to transition their activities from inadvertent CEC hyperthreat support toward being part of the CEC hyper-response. This acknowledges the way in which the CEC hyperthreat is interwoven with extant economic, governance, and security systems and the multifarious ways in which people participate in harm-doing. At the other end of the scale, an issue that will become increasingly important is the need to consider stronger mechanisms to address deliberate sabotage and the undermining of effective CEC hyper-response.

Turning to the nation-state, if new ways of considering threat are required, which match the unique nature of the CEC hyperthreat, then a novel approach would be to consider the nature of the power relationship between the state and the CEC hyperthreat. A relevant conceptual model comes from research on domestic abuse. The Duluth Model is a widely used tool to explain the components of abusive relationships, where power and control over another person is exerted in multiple ways.[92] It can be applied to CEC to inform deliberation on how to strengthen the state's capacity to counter the hyperthreat (figure 8).

Step 5: Strategic Planning—Development of PLAN E

To demonstrate the potential of a new conceptual approach that centers climate and environmental change as the main threat and uses the new hyperthreat and entangled security framing devices, strategic planning methods were used to develop a prototype new grand strategy to counter the hyperthreat, called PLAN E.[93]

PLAN E must be understood as a test of a new conceptual approach rather than a definitive plan. The conceptual work—the initial scoping, frame, and threat analysis of this research—is envisioned as contributing to what military planners consider the starting point for developing a strategic response to a threat. Developing a comprehensive strategy would require a larger activity, involving wide disciplinary expertise and support by arrays of intelligence, scientific, and other research institutions and whole of society capabilities. None-

Figure 8. Hyperthreat—behaviors and impacts of the worst enablers
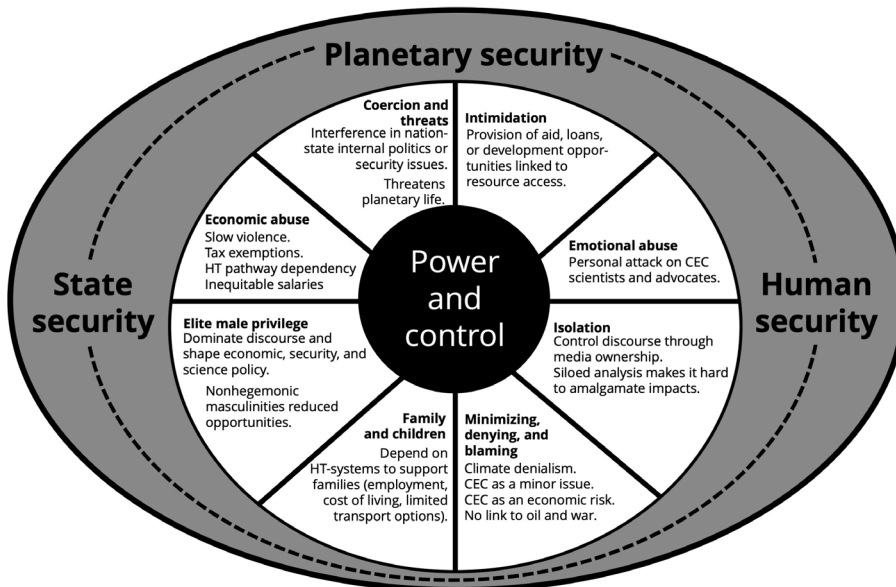
Source: courtesy of author, adapted by MCUP.

theless, this initial pilot activity reached some new insights and approaches as discussed below.

In contrast to the previously discussed literature that warns of the risks of securitization, such as top-down, rigid approaches that impinge on human liberty or creativity, PLAN E presents a security strategy that could be described as predominantly a bottom-up solution. The research identified risks with globalized, overly centralized control, such as little redundancy in the case of tyrannical elements gaining control of global levers of power and pragmatic implementation difficulties. The proposed grand strategy incorporates restoring nation-state agency and focuses upon ecomultilateralism, or regional solutions.

PLAN E is civilian led and involves civilian mobilization, which is distinct from militarization. Military forces would be partially reconfigured as part of this strategic realignment and will form a portion of larger hyper-response forces (HRF).

PLAN E is concerned with meta-level grand strategy, and at this level, proposes the guiding general idea that security conception, response planning, and actual response increasingly needs to return to the broader population and to local levels. Decision making and resources would increasingly be devolved. This is due to the localized ways in which the hyperthreat manifests and the prospect that future security forces may be less deployable due to extreme weather impacts on transportation infrastructure; the impacts of future zoonotic diseases and pandemics on travel; and the need to reduce GHG emissions associated with large deployments of personnel and equipment.

Further, localized security forces and capabilities takes into account the

need for timely responses to hyperthreat-related disasters; the importance of local knowledge in effective response; the types of skill sets needed, which often are within the civil sector; and the general trend toward localized, distributed solutions and circular economies as part of zero emissions and ecologically viable pathways for the broader population. Redundancy is achieved through dispersion, with local and regional capabilities having capacity to deploy, at least, to neighboring regions, towns, or cities impacted by hyperthreat assaults. This bottom-up focus does not negate the need for nationalized capabilities and some globalized components within a strategic response; the design can be regarded as a shift of security resources toward the places where the hyperthreat strikes.

Overall, the research began with seeking to understand the new security environment and problem and then consider the capabilities needed, in broad form. Exactly which roles are civil, military, or dual is the type of granularity that requires separate detailed analysis. However, some initial thoughts on how militaries might adjust to a hyperthreat context can be offered now.

Future security forces may increasingly locate in their home communities. This might address the problem of poorer communities being disproportionately represented in militaries and other burdens associated with continued personnel postings and relocation. Additionally, PLAN E also anticipates that as hyperthreat impacts become more severe, many military personnel will want to be near their families and communities.

Other significant features of PLAN E are the raising of new capabilities, especially in planetary security and in combating financial and legal dimensions of the problem. While military forces are already used to protect the nonhuman (e.g., patrolling fisheries), PLAN E incorporates far more extensive and robust protection of the nonhuman (soils, rivers, forests, grasslands, marine species, agricultural areas, zoo animals, pets and all sorts of flora, fauna, and other "matter"). The difference is that protection is not merely oriented toward protecting resources for human consumption, but rather recognizes that nonhuman forms of life are sentient beings, deserving protection in their own right, and who deserve to live without unnecessary cruelty or suffering on their home, Earth.

To provide a tangible example of how planetary security might relate to a U.S. Marine context, consider the forthcoming 2022 UN Ocean Conference, which will consider the proposal that at least 30 percent of the global ocean is designated as marine protected areas (MPA).[94] What type of security threats will MPAs face, and what type of capabilities will be required to protect these areas? How might illegal offshore oil and gas mining or illegal deep-sea mining occur in the decades ahead? Could such activities be protected by armed militia? If so, how might civil agencies stop and dismantle such operations and what type of security support might they require? Similar questions arise for all of Earth's ecosystems, with the IPCC's 2022 report stating that their "resilience . . . depends upon . . . conservation of 30% to 50% of earth's land, freshwater and ocean areas."[95] PLAN E and the proposed HRF aims to provide a conceptual

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approach and structure that creates space to routinely conduct threat analysis and response planning, which is attuned to these new geopolitical policy imperatives and an entangled security context.

Discussion:
Accurate Threat Perception Remains Elusive

The research concluded that the capacity to see and understand threat, at the start of the twenty-first century, is distorted at many levels and that this hinders the capacity to understand the full threat spectrum and design optimum strategy.

Reframing CEC as a hyperthreat and subjecting it to a modified, basic threat analysis accentuated the findings of Mobjörk et al. and Dellmuth et al., discussed earlier, about the incoherent nature of climate-security conception. However, it was found that the incoherence is most significant at the strategic level: in the stance of nation-states, resource eagles, and in the impotence of governing bodies and international organizations against the hyperthreat's modus operandi. This relates to fundamental philosophical stances or deep framing around threat, who defines it, analyses the threat, and structures threat response.

When it comes to CEC, modern people lack a concept of threat and lack language to articulate it, but they also may face societal taboos and difficult affective impacts of confronting wrongdoing. It is far easier to contemplate threat as being far away, or as some form of "other" rather than see it as people within one's own social sphere.

Emblematized by the incapacity to determine the causes of the Iraq War or identify actors involved in harmful resource exploitation, much of the information needed to properly understand CEC hyperthreat enablers and dimensions is inaccessible.[96] Further, the language and concepts and institutional structures that might allow such analysis are not well developed. This means that structural and conceptual framing factors limit accurate threat conception and may also lead to failure to identify synergistic opportunities.

The research was focused on understanding barriers to threat perception at the deep-framing level, and it concludes that these barriers remain significant. To reflect on the importance of this issue, deep frames influence which worldview becomes the dominant narrative, whereby it obtains power—the capacity to influence laws or funding decisions, for example. Yet, deep framing is also connected to truth and survival. Over time, the more accurate a frame is in depicting a complex and changing reality—and thereby proving its utility—the more trusted and accepted it becomes.

Deep frames or embodied understanding is complex, but at one level it can be understood as an attempt to match cognitive "software" with an unfolding and hard to decipher reality: it is the quest for perception and understanding to match the "truth" that best helps humanity survive a hazardous existence. Although humanity and planetary security depends on as accurate and truthful

interpretation of threat as is possible (which allows the best chance of an effective response), achieving accurate perception can be thwarted by multiple actors who wish to distort threat narratives for their own agenda.

Nonetheless, as an independently conducted analytical activity, framing CEC as a hyperthreat provided a useful conceptual hinge that allowed new questions to be raised and new explorations to be undertaken. A grim finding was that the full threat spectrum has likely been underestimated, yet a hyper-level perspective also found that humanity has significant latent capacity. With many human structures, systems, and ideologies teetering, there is an opportunity for metamorphosis—for change to be orchestrated so that it aligns with an ambitious approach to a *safe Earth* pathway.[97]

Conclusion

Overall, this research project found that military methods did tangibly aid analysis of the CEC problem, however, what was more constructive was the fusion of these methods and concepts with other disciplines and emerging new philosophical constructs. Of high utility was the integrative strengths of analyzing the hyperthreat in the context of other security and military threats and bringing economic actors into the threat analysis process in a transparent way.

The research found that the danger and difficulty of the problem is immense and unlikely to be resolved without a substantial shift in the stance of nation-states and the international relations and security sector. Worse, the current trajectory involving increased global preparations for warfare and conflict could derail the chance to achieve a safe climate. It also found vast potential—an unexplored intellectual landscape abundant with new possibilities. A pathway does exist to reach safe Earth. It rests on two things: the pivot of state tribes' and civilians' mobilization.

This exploratory research informs the discussion about what an effective climate emergency response might look like. The hyperthreat and entangled security notions may offer some additional explanatory power and potentially a compelling new narrative that is accessible to the wider community. In terms of climate-security discourse, the research contributes to the wider discussion about how such issues are best conceptualized and translated into practice.

Considering the international relations, defense, and military sector, this research can help orient philosophical assumptions in a way that is attuned to the twenty-first century. In the era of CEC, this sector could be more than a bystander; the cleaner of hyperthreat mess; or an unwitting accomplice to the hyperthreat. Instead, there is an opportunity for significant realignment—for the sector to become an enabler of a global hyper-response while remaining aligned with its raison d'être of protecting its respective populations and ecological home base. The IPCC's latest report underscores the urgency of the situation:

> The cumulative scientific evidence is unequivocal: climate change is a threat to human well-being and planetary health.

Any further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a livable and sustainable future for all. (*very high confidence*).[98]

Endnotes

1. Joelle Gergis, "We Are Seeing the Very Worst of Our Scientific Predictions Come to Pass in These Bushfires," *Guardian* (Australia), 2 January 2020.
2. "Boe Declaration on Regional Security," Pacific Islands Forum, 2018; and "World Risks 'Collapse of Everything' without Strong Climate Action, Attenborough Warns Security Council," UN News, 23 February 2021.
3. Exec. Order 14008: Tackling the Climate Crisis at Home and Abroad (27 January 2021).
4. For more detail on deep frames, see the glossary.
5. George Lakoff, "Why It Matters How We Frame the Environment," *Environmental Communication* 4, no. 1 (2014): 70–81, https://doi.org/10.1080/17524030903529749.
6. E. G. Boulton, "An Introduction to PLAN E: Grand Strategy for the Twenty-First-Century Era of Entangled Security and Hyperthreats," *Expeditions with MCUP* (2022).
7. Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013); and Elizabeth Boulton, "Climate Change as a 'Hyperobject': A Critical Review of Timothy Morton's Reframing Narrative," *WIREs Climate Change* 7, no. 5 (September/October 2016): 176, https://doi.org/10.1002/wcc.410.
8. Morton, *Hyperobjects Philosophy and Ecology after the End of the World*, 164.
9. See glossary and the *Expeditions* article on PLAN E, which provides more theoretical background on both the hyperobject and hyperthreat concepts. The full definition also describes the hyperthreat's enablers, as follows: the hyperthreat is powered and energized by three key enablers; its invisibility, its ability to evade all existing human threat-response mechanisms, and by human hesitancy—the slower humans are to act, the stronger it becomes. Elizabeth G. Boulton, "Climate Change as a Hyperthreat," in *Australian Contributions to Strategic and Military Geography*, ed. Stuart Pearson, Jane L. Holloway, and Richard Thackway (Cham, Switzerland: Springer International Publishing, 2018).
10. Eric Paglia, "The Socio-scientific Construction of Global Climate Crisis," *Geopolitics* 23, no. 1 (2018): https://doi.org/10.1080/14650045.2017.1328407.
11. Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011).
12. Pope Francis, *Encyclical Letter: Laudato Si' of the Holy Father Francis on Care for Our Common Home* (Vatican City: Catholic Church, 2015).
13. Nicholas Fotion, *War & Ethics: A New Just War Theory* (London: Continuum International Publishing Group, 2007). For a more detailed discussion, see the glossary and the *Expeditions* article; and "Climate Change as a Hyperthreat," YouTube video, 7 September 2020, 3:47 min.
14. Thierry Balzacq, Peter Dombrowski, and Simon Reich, "Is Grand Strategy a Research Program?: A Review Essay," *Security Studies* 28, no. 1 (2019): 59, https://doi.org/10.1080/09636412.2018.1508631; and Basil Henry Liddell Hart, *The Decisive Wars of History: A Study in Strategy* (London: G. Bell & Sons, 1929).
15. Nina Silove, "Beyond the Buzzword: The Three Meanings of 'Grand Strategy'," *Security Studies* 27, no. 1 (2018), https://doi.org/10.1080/09636412.2017.1360073.
16. Peter Layton, *Grand Strategy* (Columbia, SC: Layton, 2018).
17. "War is a mere continuation of policy by other means . . . not merely a political act, but also a real political instrument, a continuation of political commerce, a carrying out of the same by other means." Carl Clausewitz, *On War*, ed. and trans. Anatol Rapoport (London: Penguin Books, 1968), 119.

18. "Citizens' Assemblies," Extinction Rebellion, accessed 4 March 2022; and George Monbiot, "Rewilding Politics," Monbiot.com, 23 December 2019.

19. *Our Global Neighbourhood*: *The Report of the Commission on Global Governance* (New York: Commission on Global Governance, United Nations, 1995).

20. Boulton, "Climate Change as a Hyperthreat."

21. Maria Julia Trombetta, "Environmental Security and Climate Change: Analysing the Discourse," *Cambridge Review of International Affairs* 21, no. 4 (2008), https://doi.org/10.1080/09557570802452920.

22. Joshua W. Busby, "Who Cares about the Weather?: Climate Change and U.S. National Security," *Security Studies* 17, no. 3 (2008), https://doi.org/10.1080/09636410802319529.

23. Úrsula Oswald Spring, "A HUGE Gender Security Approach: Towards Human, Gender, and Environmental Security," in *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*, ed. Hans Günter Brauch et al. (Heildelberg, Germany: Springer Verlag, 2009); and Matt McDonald, *Ecological Security: Climate Change and the Construction of Security* (Cambridge, UK: Cambridge University Press, 2021), https://doi.org/10.1017/9781009024495.

24. Toby Ord, *The Precipice: Existential Risk and the Future of Humanity* (New York: Hachette Books, 2020); Pablo Servigne and Raphaël Stevens, *How Everything Can Collapse: A Manual for Our Times*, trans. Andrew Brown (Hoboken, NJ: John Wiley & Sons, 2020); S. J. Beard et al., "Assessing Climate Change's Contribution to Global Catastrophic Risk," *Futures*, no. 127 (March 2021), https://doi.org/10.1016/j.futures.2020.102673; C. E. Richards, R. C. Lupton, and J. M. Allwood, "Reframing the Threat of Global Warming: An Empirical Causal Loop Diagram of Climate Change, Food Insecurity and Societal Collapse," *Climatic Change* 164, no. 3 (2021), https://doi.org/10.1007/s10584-021-02957-w; and Nathan Alexander Sears, "International Politics in the Age of Existential Threats," *Journal of Global Security Studies* 6, no. 3 (2020), https://doi.org/10.1093/jogss/ogaa027.

25. Malin Mobjörk et al., *Climate-Related Security Risks: Towards an Integrated Approach* (Solna, Sweden: Stockholm International Peace Research Institute, 2016).

26. Lisa M. Dellmuth et al., "Intergovernmental Organizations and Climate Security: Advancing the Research Agenda," *WIREs Climate Change* 9, no. 1 (January/February 2018), https://doi.org/10.1002/wcc.496.

27. Joshua W. Busby, "Beyond Internal Conflict: The Emergent Practice of Climate Security," *Journal of Peace Research* 58, no. 1 (2021), https://doi.org/10.1177/0022343320971019.

28. Sherilyn MacGregor and Nicole Seymour, eds., "Men and Nature: Hegemonic Masculinities and Environmental Change*," RCC Perspectives: Transformations in Environment and Society*, no. 4 (2017), https://doi.org/10.5282/rcc/7977; Seema Arora-Jonsson, "Virtue and Vulnerability: Discourses on Women, Gender and Climate Change," *Global Environmental Change* 21, no. 2 (May 2011), https://doi.org/10.1016/j.gloenvcha.2011.01.005; Janet K. Swim et al., "Gendered Discourse about Climate Change Policies," *Global Environmental Change*, no. 48 (2018), https://doi.org/10.1016/j.gloenvcha.2017.12.005; and Nathan J. Cook, Tara Grillos, and Krister P. Andersson, "Gender Quotas Increase the Equality and Effectiveness of Climate Policy Interventions," *Nature Climate Change* 9, no. 4 (2019), https://doi.org/10.1038/s41558-019-0438-4. See, for example, work by J. Ann Tickner, *Gender in International Relations: Feminist Perspectives on Achieving Global Security* (New York: Columbia University Press, 1992); Valerie M. Hudson et al., "The Heart of the Matter: The Security of Women and the Security of States," *International Security* 33, no. 3 (2009); Jennifer Heeg Maruska, "When Are States Hypermasculine?," in *Gender and International Security: Feminist Perspectives*, ed. Laura Sjoberg (Oxon, UK: Routledge, 2009); Annick T. R. Wibben, *Researching War: Feminist Methods, Ethics and Politics* (Abingdon-on-Thames, UK: Routledge, 2016); and Cara Daggett, "Petro-masculinity: Fossil Fuels and Authoritarian Desire," *Millennium* 47, no. 1 (2018), https://doi.org/10.1177/0305829818775817.

29. Paglia, "The Socio-scientific Construction of Global Climate Crisis."

30.   Nick Bostrom, "Existential Risk Prevention As Global Priority," *Global Policy* 4, no. 1 (2013), https://doi.org/10.1111/1758-5899.12002.

31.   *The UN Security Council and Climate Change* (New York: United Nations, 2021).

32.   Jochen Hinkel et al., "Transformative Narratives for Climate Action," *Climatic Change* 160, no. 4 (2020), https://doi.org/10.1007/s10584-020-02761-y.

33.   Nick Mabey, "Security Trends and Threat Misperceptions," in *Britain and Security*, ed. Paul Cornish (London: Smith Institute, 2007).

34.   Anthony Burke et al., "Planet Politics: A Manifesto from the End of IR," *Millennium* 44, no. 3 (2016), https://doi.org/10.1177/0305829816636674.

35.   Simon Dalby, "National Security in a Rapidly Changing World," *Balsillie Papers* 3, no. 3 (2020).

36.   "Safe Earth"—see glossary. In brief, it refers to avoiding dangerous climate change and ecological collapse, or the exceedance of scientifically defined planetary boundaries. It also generally encapsulates safety and peace of all forms. Johan Rockstrom et al., "A Safe Operating Space for Humanity," *Nature* 461, no. 7263 (2009), http://dx.doi.org/10.1038/461472a.

37.   In general, *harm-doing* refers to actions that maim, damage, destroy, hurt, kill, or lead to such outcomes, across planetary, human, and state security spheres. Examples of harm-doing include actions that hasten ecological damage or global warming; for example, putting toxins in a river or undermining greenhouse gas (GHG) reduction policies.

38.   *Joint Military Appreciation Process*, Australian Defence Force Procedures 5.0.1, 2d ed. (Canberra, Australia: Department of Defence, 2019); Stefan J. Banach and Alex Ryan, "The Art of Design: A Design Methodology," *Military Review* 99, no. 2 (March–April 2009). *Center of gravity* (COG) analysis seeks to identify the key factor that provides a force its power or ability to achieve its objectives. COG understanding drew on work from Aaron P. Jackson and Australian Defence Force doctrine. Aaron P. Jackson, "Center of Gravity Analysis 'Down Under': The Australian Defence Force's New Approach," *Joint Force Quarterly*, no. 84 (2017); and *Joint Military Appreciation Process*.

39.   Boulton, "Climate Change as a 'Hyperobject'."

40.   *Real-options analysis* is a method for decision making in environments of deep uncertainty, which involves actively identifying outlier possibilities. It won the 1997 Nobel Prize for Economics. Traditional risk planning estimated investment outcomes by drawing on known trajectories, while eliminating outlier possibilities. Real-options analysis takes the opposite approach; it "seeks out risky situations." This keeps decision options and pathways open, such that if there were large fluctuations, choices that may have initially seemed unviable may become newly viable, and even lucrative. It is now applied across many disciplinary fields, including climate and environmental risk. Fischer Black and Myron Scholes, "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy* 81, no. 3 (May–June 1973), https://doi.org/10.1086/260062; Robert C. Merton, "Theory of Rational Option Pricing," *Bell Journal of Economics and Management Science* 4, no. 1 (Spring 1973); and Joost Buurman and Vladan Babovic, "Adaptation Pathways and Real Options Analysis: An Approach to Deep Uncertainty in Climate Change Adaptation Policies," *Policy and Society* 35, no. 2 (2016), https://doi.org/10.1016/j.polsoc.2016.05.002.

41.   Boulton, "Climate Change as a 'Hyperobject' "; and Boulton, "Climate Change as a Hyperthreat."

42.   Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007).

43.   Distinct from "interaction," which describes the idea of two distinct, separately formed identities meeting, "intra-action" is the idea that both entities are partly formed through their ongoing interaction with each other. Barad, *Meeting the Universe Halfway*, 35.

44.   Niels Bohr, *Essays 1958–1962 on Atomic Physics and Human Knowledge* (Woodbridge, CT: Ox Bow Press, 1963).

45.   Barad, *Meeting the Universe Halfway*, 183.

46. "Continuous discourse" is explained further in the glossary, and the concept forms part of the "entangled security" conceptual compass, shown in figure 4.

47. See glossary. *Ethico* refers to ethics. *Onto* refers to ontology—a branch of philosophy that considers the nature of "being" and existence. *Epistemology* is a branch of philosophy that considers how human's know things. Barad draws on quantum physics to argue that these three dimensions of philosophy are interdependent and thus should not be considered in isolation.

48. *Matter matters* refers to a conceptual idea. See glossary and figure 4 for explanation. Timothy Morton also uses the term "co-agency." Morton, *Hyperobjects*.

49. Discussed, for example, by Nathan P. Freier et al., *At Our Own Peril: DoD Risk Asessment in a Post-Primacy World* (Carlisle, PA: U.S. Army War College Press, 2017); and Thitinan Pongsudhirak, "Maintaining What's Left of Rules-Based Order," *Bangkok Post* (Thailand), 20 July 2018.

50. *Freedom in the World, 2021: Democracy under Siege* (Washington, DC: Freedom House, 2021).

51. Susan Park, *International Organisations and Global Problems: Theories and Explanations* (Cambridge, UK: Cambridge University Press, 2018), https://doi.org/10.1017/9781139924788; and Naghmeh Nasiritousi and Soetkin Verhaegen, "Disentangling Legitimacy: Comparing S Assessments of Five Key Climate and Energy Governance Institutions," in *Governing the Climate-Energy Nexus: Institutional Complexity and Its Challenges to Effectiveness and Legitimacy*, ed. Fariborz Zelli et al. (Cambridge, UK: Cambridge University Press, 2020), https://doi.org/10.1017/9781108676397.

52. Two books that discuss hate crimes: Sue Lloyd-Roberts, *The War on Women: And the Brave Ones Who Fight Back* (London: Simon and Schuster, 2016); and Michael Kimmel, *Healing from Hate* (Oakland: University of California Press, 2018).

53. Carol Cohn and Claire Duncanson, "Women, Peace and Security in a Changing Climate," *International Feminist Journal of Politics* 22, no. 5 (2020), https://doi.org/10.1080/14616742.2020.1843364.

54. Facundo Alvaredo et al., "The Elephant Curve of Global Inequality and Growth," *AEP Papers and Proceedings*, no. 108 (2018), https://doi.org/10.1257/pandp.20181073; and Daniel S. Hoadley and Nathan J. Lucas, *Artificial Intelligence and National Security* (Washington, DC: Congressional Research Service, 2018).

55. *The Sustainable Development Goals Report, 2018* (New York: Development Data and Outreach Branch, United Nations Statistics Division, 2018).

56. *The Sustainable Development Goals Report, 2021* (New York: United Nations, 2021).

57. Rosanna E. Guadagno and Karen Guttieri, "Fake News and Information Warfare: An Examination of the Political and Psychological Processes from the Digital Sphere to the Real World," in *Research Anthology on Fake News, Political Warfare, and Combatting the Spread of Misinformation* (Hershey, PA: IGI Global, 2021), https://doi.org/10.4018/978-1-5225-8535-0.ch011.

58. Eiríkur Bergmann, "Populism and the Politics of Misinformation," *Safundi* 21, no. 3 (2020), https://doi.org/10.1080/17533171.2020.1783086. See, for example, Florian Hartleb, "Right-Wing Terrorism: Still an Underestimated Threat," in *Lone Wolves: The New Terrorism of Right-Wing Single Actors* (Chatham, Switzerland: Springer, 2020), https://doi.org/10.1007/978-3-030-36153-2_1; and Ziya Öniş and Mustafa Kutlay, "The Global Political Economy of Right-wing Populism: Deconstructing the Paradox," *International Spectator* 55, no. 2 (2020), https://doi.org/10.1080/03932729.2020.1731168.

59. Diego Lopes da Silva, Nan Tian, and Alexandra Marksteiner, *Trends in World Military Expenditure* (Solna, Sweden: Stockholm International Peace Research Institute, 2020), https://doi.org/10.55163/JTFI7245.

60. J. J. Messner et al., *2018 Fragile States Index: Annual Report* (Washington, DC: Fund for Peace, 2018); David Kilcullen, "Geographies of Irregular Warfare," in *Australian Contributions to Strategic and Military Geography*, ed. Stuart Pearson, Jane L. Holloway, and Richard Thackway (Cham, Switzerland: Springer International Publishing, 2018); and Graham Allison, *Destined for War: Can America and China Escape Thucydides's*

Trap? (Boston, MA: Houghton Mifflin Harcourt, 2017). See, for example, reflections by Stephen Blank, "Russia's Vostok-2018: A Rehearsal for Global War?," *Interpreter*, 4 September 2018; and Hal Brands, "New Threat to the US: the Axis of Autocracy," Bloomberg Opinion, 19 April 2018.

61. John Keane, "Enter the Dragon: Decoding the New Chinese Empire," *Australian Foreign Affairs*, no. 11 (February 2021). See the glossary for more on "Galaxy Empire."

62. W. N. Adger et al., "Human Security," in *Climate Change 2014: Impacts, Adaptation, and Vulnerability*, pt. A, *Global and Sectoral Aspects: Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. C. B. Field et al. (Cambridge, UK: Cambridge University Press, 2014), chap. 12, table 12-4, 778.

63. See glossary. *Tribal discourse* is a new way of grouping and analyzing human activity in relation to the hyperthreat. It represents a nonhuman-centered approach in that the hyperthreat is centered, and human activity is understood in relation to the hyperthreat. It breaks from modern ways of thinking, such as using nation-state categories, to offer a new analytical lens.

64. See figure 6. *Earth protectors* includes park rangers, environmental activists, animal rescue, and frontline environmental protection agencies. These are people actively protecting the nonhuman from ecocide, violence, and harm.

65. Christopher Nellemann et al., *The Rise of Environmental Crime: A Growing Threat to Natural Resources, Peace, Development and Security* (Nairobi, Kenya: United Nations Environment Programme, 2016), 39.

66. Channing May, *Transnational Crime and the Developing World* (Washington, DC: Global Financial Integity, 2017), xi; and *The State of Knowledge of Crimes that Have Serious Impacts on the Environmen*t (Nairobi, Kenya: United Nations Environment Programme 2018), ix.

67. Elizabeth Lunstrum, "Green Militarization: Anti-Poaching Efforts and the Spatial Contours of Kruger National Park," *Annals of the Association of American Geographers* 104, no. 4 (2014), https://doi.org/10.1080/00045608.2014.912545.

68. Christian Nellemann et al., eds., *The Environmental Crime Crisis: Threats to Sustainable Development from Illegal Exploitation and Trade in Wildlife and Forest Resources* (Nairobi, Kenya: United Nations Environment Programme, 2014).

69. Goemeone Emmanuel Judah Mogomotsi and Patricia Kefilwe Madigele, "Live by the Gun, Die by the Gun: Botswana's 'Shoot-to-Kill' Policy as an Anti-Poaching Strategy," *South African Crime Quarterly*, no. 60 (June 2017), http://dx.doi.org/10.17159/2413-3108/2017/v0n60a1787.

70. See work by Lukas Rüttinger et al., *A New Climate for Peace Taking Action on Climate and Fragility Risks* (Paris: European Union Institute for Security Studies, 2015); and Carlos Alberto Cruz, *Improving Security of United Nations Peacekeepers: We Need to Change the Way We Are Doing Business* (New York: United Nations, 2017).

71. David Brown et al., "Modern Slavery, Environmental Degradation and Climate Change: Fisheries, Field, Forests and Factories," *Environment and Planning E: Nature and Space* 4, no. 2 (2021), https://doi.org/10.1177/2514848619887156.

72. Michael Barnett, *Empire of Humanity: A History of Humanitarianism* (Ithaca, NY: Cornell University Press, 2011).

73. Katharina Nett and Lukas Rüttinger, *Insurgency, Terrorism and Organised Crime in a Warming Climate—Analysing the Links Between Climate Change and Non-State Armed Groups* (Berlin, Germany: Adelphi, 2016), 55.

74. Tobias von Lossow, "The Rebirth of Water as a Weapon: IS in Syria and Iraq," *International Spectator* 51, no. 3 (2016), https://doi.org/10.1080/03932729.2016.1213063; and Jamie Hansen-Lewis and Jacob N. Shapiro, "Understanding the Daesh Economy," *Perspectives on Terrorism* 9, no. 4 (2015).

75. Robert Goralski and Russell W. Freeburg, *Oil and War: How the Deadly Struggle for Fuel in WWII Meant Victory or Defeat* (Quantico, VA: Marine Corps University Press, 2021 reprint; 1987).

76. Stephen A. Marglin and Juliet B. Schor, *The Golden Age of Capitalism: Reinterpreting the Postwar Experience* (Oxford, UK: Oxford University Press, 1990), https://doi

.org/10.1093/acprof:oso/9780198287414.001.0001; and Paul Warde, Libby Robin, and Sverker Sörlin, *The Environment: A History of the Idea* (Baltimore, MD: Johns Hopkins University Press, 2018).

77. Donella H. Meadows, Jørgen Randers, and William W. Behrens, *The Limits to Growth: A Report to the Club of Rome on the Predicament of Mankind* (New York: Universe Books, 1972).

78. Doug Stokes, "Blood for Oil?: Global Capital, Counter-insurgency and the Dual Logic of American Energy Security," *Review of International Studies* 33, no. 2 (April 2007), https://doi.org/10.1017/S0260210507007498.

79. Neil Smith, "After the American Lebensraum 'Empire,' Empire, and Globalization," *Interventions* 5, no. 2 (2003), https://doi.org/10.1080/1369801031000112987; and John Morrissey, *The Long War: CENTCOM, Grand Strategy, and Global Security* (Athens: University of Georgia Press, 2017).

80. Stokes, "Blood for Oil?"

81. See, for example, "The Revolution of Thomas Sankara," African Agenda, 3 October 2017; Mary Kaldor, Terry Lynn Karl, and Yahia Said, eds., *Oil Wars* (London: Pluto Press, 2007); Michael T. Klare, *The Race for What's Left: The Global Scramble for the World's Last Resources* (New York: Macmillan, 2012); and John Perkins, *The New Confessions of an Economic Hit Man* (Oakland, CA: Berrett-Koehler Publishers, 2016).

82. Sir John Chilcot, *The Report of the Iraq Inquiry: Executive Summary* (London, UK: House of Commons, 2016); Jeff D. Colgan, "Oil and Security: The Necessity of Political Economy," *Journal of Global Security Studies* 6, no. 1 (March 2021), https://doi.org/10.1093/jogss/ogaa008; and Jeff D. Colgan, "Fueling the Fire: Pathways from Oil to War," *International Security* 38, no. 2 (Fall 2013), https://doi.org/10.1162/ISEC_a_00135.

83. "Overexposed—How the IPCC's 1.5 Degree Report Demonstrates the Eisks of Overinvestment in Oil and Gas," Global Witness, 23 April 2019.

84. Tran Truong Thuy, John B. Welfield, and Le Thuy Trang, eds., *Building a Normative Order in the South China Sea: Evolving Disputes, Expanding Options* (Cheltenham, UK: Edward Elgar Publishing, 2019).

85. Hui Zhong and Michael White, "South China Sea: Its Importance for Shipping, Trade, Energy and Fisheries," *Asia-Pacific Journal of Ocean Law and Policy* 2, no. 1 (2017): 17–19, https://doi.org/https://doi.org/10.1163/24519391-00201003.

86. See the glossary. The term *dual-logic* was first used by Doug Stokes in "Blood for Oil?"

87. *Report of the World Commission on Environment and Development: Our Common Future* (Oxford, UK: Oxford University Press, 1987); J. T. Houghton, G. J. Jenkins, and J. J. Ephraums, *Climate Change: The IPCC Scientific Assessment* (Cambridge, UK: Cambridge University Press, 1990); *Our Global Neighbourhood: The Report of the Commission on Global Governance* (Oxford, UK: Oxford University Press, 1995).

88. A selection of research on climate denialism includes Geoffrey Supran and Naomi Oreskes, "Assessing ExxonMobil's Climate Change Communications (1977–2014)," *Environmental Research Letters* 12, no. 8 (2017); Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Climate Change* (New York: Bloomsbury, 2010); "Big Oil's Real Agenda on Climate Change," InfluenceMap, accessed 8 March 2023; and Robert J. Brulle, "The Climate Lobby: A Sectoral Analysis of Lobbying Spending on Climate Change in the USA, 2000 to 2016," *Climatic Change* 149, no. 3 (2018), https://doi.org/10.1007/s10584-018-2241-z.

89. See the glossary for more explanation on a "hothouse Earth" scenario. In brief, it is also referred to as a greenhouse Earth state, and a hothouse Earth state is expected to involve sea-level rise of 10–60 meters, and Earth's mean surface temperature being four to five degrees above preindustrial levels. See data on the Middle Miocene epoch, in supporting documents to Will Steffen et al., "Trajectories of the Earth System in the Anthropocene," *Proceedings of the National Academy of Sciences* 115, no. 33 (2018), https://doi.org/10.1073/pnas.1810141115.

90. Hannah Arendt, *Eichmann in Jerusalem: A Report on the Banality of Evil* (New York: Penguin, 1963).

91. Stanley Milgram, "Behavioral Study of Obedience," *Journal of Abnormal and Social Psychology* 67, no. 4 (1963), https://doi.org/10.1037/h0040525.

92. "The Duluth Model," theduluthmodel.org, accessed 7 October 2018; and Ellen Pence and Michael Paymar, *Education Groups for Men Who Batter: The Duluth Model* (New York: Springer Publishing Company, 1993).

93. Boulton, "An Introduction to PLAN E."

94. "Our Ocean, Our Future, Our Responsibility (Zero Draft)" (UN Ocean Conference, Lisbon, Portugal, 27 June–1 July 2022).

95. IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability* (Cambridge, UK: Cambridge University Press, 2022), 34.

96. Chilcot, *The Report of the Iraq Inquiry*. An example of the difficulty in identifying "who" conducts resource extraction activity is seen in the case of copper mining in Africa. *Equity in Extractives: Stewarding Africa's Natural Resources for All: Africa Progress Report 2013* (Geneva, Switzerland: United Nations, 2013), 56–57.

97. See the glossary for detail. *Safe Earth* refers to avoiding dangerous climate change, (maintaining Earth's mean temperature to 1.5 degrees above preindustrial levels), but also staying within other planetary boundaries outlined by Johan Rockström et al., such as limiting chemical pollution, ozone depletion, and biodiversity loss. The term safe Earth within PLAN E also refers to safety for all of Earth's inhabitants, including the full range of human security concerns, from warfare, human trafficking, and sexual violence to food and water security among other issues encapsulated within the UN SDG. Johan Rockstrom et al., "A Safe Operating Space for Humanity," *Nature* 461, no. 7263 (2009), http://dx.doi.org/10.1038/461472a.

98. IPCC, *Climate Change 2022*, 35.

Glossary

Multiple academic disciplines informed this research, while new terms were introduced. To facilitate understanding across military and civilian readership and scientific and humanities specialities, key terms are described in this glossary.

Affective inequality *(social justice, equality studies, Kathleen Lynch).* Relating to the workload of showing caring and concern for others and the impact this has on those conducting this typically unpaid work.

Affective security/insecurity *(entangled security, E. G. Boulton, drawing on Kathleen Lynch's affective inequality work).* Affective *security* refers to feeling "safe"—physically, socially, and psychologically. It involves a sense of epistemological and ontological stability. Care contributes to affective security. Affective *insecurity* is the opposite, a sense or feeling of being ill at ease, anxious, worried, unsafe, threatened, or uncertain in the world for a range of physical, emotional, psychosocial, or philosophical reasons.

Agential realism (also see continuous discourse and "matter matters") *(quantum physics, philosophy, Karen Barad).* Draws from quantum physics and the behavior of atoms to derive new philosophical concepts. It proposes that the "laws of matter" have more authority than human speculations. Involves a view that human perception is inherently limited because it is reliant upon conceptual or practical apparatuses to measure reality, which in turn shapes what is seen and known.

Climate and environmental change (CEC) *(entangled security, E. G. Boulton).* The physical world is referred to vicariously as global change; the Anthropocene; environmental change; the biosphere; or the living planet. CEC denotes two broad bodies of knowledge: that around global warming (climate change science) and environmental science. Accordingly, CEC encompasses the atmosphere, hydrosphere, lithosphere, pedosphere, and biosphere. CEC refers to the nonhuman, even though it is acknowledged that humans are a part of the "environment."

Concept of operations (CONOPS) *(military).* It is an explanation of the rationale and method to achieve a stated objective. It may describe thematic areas of focus, specific tactics, operations, and sequencing of events. The aim of the CONOPS is to allow people to understand the overarching approach.

Continuous discourse (see also agential realism) *(quantum physics, philosophy, Karen Barad).*

Drawing on quantum physics, Barad finds that "matter" (human and nonhuman) defines itself through an iterative conversation (discourse) with other "matter." Because existence or matter at the quantum level is continually reforming through intra-action with "other" matter, this means that meaning must also continually be reworked. Accordingly, accurate framing requires *continuous discourse* among various "others" and matter, with matter represented as best as is possible.

Creation care *(religious environmentalism, ecotheology)*. A term widely used across the world's major religions to describe human stewardship responsibilities toward Earth. It embodies the idea that all forms of life and matter are sacred, integrally connected with human physical and spiritual well-being, and that it is humans' spiritual duty to care for them.[1]

Deep frames *(Neuroscience, cognitive science, George Lakoff)*. Complex systems of neuron pathways that hold peoples' worldviews and beliefs. Deep frames are formed over a lifetime and tend to influence decision making at the subconscious level.

Dual logic (see also system's maintenance) *(international relations, Doug Stokes; entangled security, E. G. Boulton)*.[2] Doug Stokes proposes that there are two reasons for U.S. military interventions: a transnational and a national interest. The transnational interest relates to supporting "capitalist social relations in oil-rich regions that in turn serves the interests of other core states."[3] He analyzes the "blood for oil" thesis and suggests an alternate interpretation that "the American state seeks not only to ensure US oil supplies but also to maintain sufficient oil supplies for the global economy as a whole."[4] Boulton flips dual logic in the context of analyzing how to counter the hyperthreat of CEC by arguing that there are now two major threat related reasons why CEC must be urgently addressed: to prevent dangerous global warming and to reduce geopolitical conflict relating to resources, especially fossil fuel access.

Entangled security *(E.G. Boulton)*. The idea that security in the twenty-first century has inherently interconnected planetary, human, and state security dimensions. This basic understanding is then developed into a more detailed new theoretical approach, summarized in figure 4.

Ethicoontoepistemology (a*gential realism, Karen Barad*). "An appreciation of the intertwining of ethics, knowing and being."[5] To explain, matter may impact other matter physically, but also in terms of identity (ontology) and knowing (epistemology). Further, the inevitability of intra-action means that there is also an ethical (ethico) component.

Forgotten solution (see also natural climate solutions, NCS) *(ecology, environmental advocacy)*. In social media, the hashtag #forgottensolution and #NaturalClimateSoutions refers colloquially to the failure of climate policy to consider the rehabilitation of ecosystems, especially forests, as significant pathways to reduce GHG emissions. It is a stance critical of approaches that gravitate toward grand technological solutions, which through having stronger corporate advocacy skew resourcing away from viable low-tech solutions like ecosystem rehabilitation.

Galaxy empire *(political science, John Keane)*. In contrast to the Thucydides's trap argument, John Keane argues that China is already a new form of global empire, which achieves influence through nonviolent means, in fields such as "finance capital, technology innovation, logistics, and diplomatic, military and cultural power."[6]

Grand narrative *(biblical studies; sociology; history; post-modernism)*. A term widely used to describe an overarching sense-making story or metanarrative, for example, Islamism; Christianity; colonization; emancipation in an apartheid context; civilization and progress; the enlightenment; or secularization and modernization. In a security context, a *grand narrative* is often paired with a *grand strategy*, where it provides the underpinning explanatory and often ideological rationale.

Grand strategy *(international relations, political science, military and security studies)*. Although the term is widely used and explored, in the literature, there is no sole agreed definition. In a military context, Liddell Hart's definition is often a discursive start point. Silove proposes that, broadly, scholars agree that *grand strategy* "is long-term in scope, concerned with the State's most important priorities, and inclusive of all spheres of statecraft (military, diplomatic, and economic)." She further proposes it takes three forms: a plan, a set of principles, or a pattern of behavior.

Green militarization *(environmental conservation)*. "The use of military and paramilitary (military-like) actors, techniques, technologies, and partnerships, in the pursuit of conservation."[7]

Hothouse Earth *(climate science, see* also *Safe Earth)*. For more than 4,600 million years, Earth's state has shifted between an icehouse or snowball Earth state to a greenhouse or hothouse Earth state. Hothouse Earth conditions see no glaciers, and compared to preindustrial baselines, sea-level rise is at least 10–60 meters higher, while global mean surface temperature is at least 4–5 de-

grees higher. Cascading tipping points (such as the Amazon forest switching from being a carbon sink to a carbon emitter, or the collapse of the Greenland, Arctic, or Antarctic ice sheets) could cause Earth system dynamics to prematurely enter the hothouse Earth state.

Hot peace *(international relations, security studies)*. Used as a contrast to the term Cold War. Describes the geopolitical environment when there is a low threat of conventional military attack, but aggression may occur through multiple minor actions, such as subtle economic, diplomatic, cultural, or information operations that seek to erode nation-state strength, cohesion, and confidence.

Human, gender, and environmental security (HUGE) *(environmental security, Úrsula Oswald-Spring)*. HUGE examines five types of security concurrently: national, societal, human, environmental, and gender. Its approach to gender does not reference the UN women, peace, and security (WPS) agenda.[8]

Hyperobject *(post-human philosophy, Timothy Morton)*. "Things that are massively distributed in time and space relative to humans."[9] They have five characteristics: viscosity; nonlocality; temporal undulation; phasing; and interobjectivity.

Hyperthreat *(entangled security, E. G. Boulton)*. Draws from Timothy Morton's hyperobject theory. Refers to the harmful impacts of CEC. Exact definition: the hyperthreat of climate change and environmental degradation has warlike destructive capabilities that are so diffuse that it is hard to see the enormity of the destruction coherently or who is responsible for its hostile actions. It defies existing human thought and institutional constructs. It is powered and energized by three key enablers: its invisibility, its ability to evade all existing human threat-response mechanisms, and by human hesitancy.

Interobjective *(ecophilosophy, Timothy Morton)*. One of the five hyperobject characteristics, it describes the indirect way in which the hyperobject exerts influence—through other objects, while it remains hidden or unseen.

Intra-active *(quantum physics, philosophy, Karen Barad)*. Distinct from "interaction," which describes the idea of two distinct, separately formed identities meeting and engaging, "intra-action" is the idea that both entities are partly formed through their ongoing interaction with each other.

Irregular warfare *(military)*. Contest between state and nonstate actors, which involves violent means, but also has important ideological, cultural, and political dimensions whereby wining population support is a key objective.

Joint military appreciation process (JMAP) *(military)*. A method of group-based threat analysis and operational planning used widely by militaries across the world. In the Australian Defence Force context, "Joint" refers to tri-Service or a Navy, Army, Air Force planning environment.

Lebensraum (German word for "living space"). Used within German international relations (IR) and security policy to refer to the state's need for agricultural land and resources to support its population. Infamous for being part of the Nazi Party's rationale for the invasion of other countries. Now broadly used to refer to the *material security* needs of states, which impose pressures on other states.

Line of effort (LOE) *(military)*. A combination of multiple tasks and missions that are designed to achieve one logical purpose. Typically, military strategic, operational, or campaign plans will comprise multiple lines of effort (LOE). They refer to conceptual approaches, not merely physical activity. For example, an LOE could be to restore essential services in a town. Official: "used to focus efforts towards establishing operational and strategic conditions by linking multiple tasks and missions."[10]

Love labor *(care ethic, social justice, equality studies Kathleen Lynch)*. "The emotional and other work oriented to the enrichment and enablement of others, and the bond between self and others. . . . All love labour involves care work, but not all care work involves love labour."[11]

Main effort *(military)*. Derives from the German word "schwerpunkt" or "main focus." Australian definition: "A concentration of forces or means, in a particular area, time and phase of an operation, where a commander seeks to bring about a decision."[12]

Mass mortality events (MME) *(ecology)*. A sudden mass death of a particular species.

Material security *(entangled security, E. G. Boulton)*. In PLAN E, it is proposed that maintaining material security systems can impose a systems maintenance burden on the nation-state and its defense and security assets.

Matter matters *(agential realism, Karen Barad; entangled security; E. G. Boulton)*. A nonhuman centric viewpoint whereby "matter"—all forms of life, from fish, insects, animals, humans, soil, and macrobacteria to material, such as wood, plastics, nuclear waste, or rocks is understood as having unique forms of agency and "aliveness" when you consider activity at the molecular level. In terms of *entangled security*, it is the idea that the condition of matter must be represented and spoken for in analytical, planning, and decision-making mechanisms.

Meeting well (*ecofeminism, Donna Haraway, further developed by Cecilia* Åsberg, *among others*). Etiquette for how to interact with "others" in a highly entangled existence. It is neither hierarchical nor imposing, but rather allows the "other" to speak for itself.

Nationally determined contributions (NDCs) *(climate policy; 2015 Paris Agreement)*. This refers to the plan developed by each country to reduce their GHG emissions, taking into account their domestic circumstances and capabilities. The Paris Agreement (Article 4, paragraph 2) requires each party to prepare, communicate, and maintain successive nationally determined contributions (NDCs) that it intends to achieve.

National support base (NSB) *(military)*. Envisioned as a secure area in which civilian manufacturing and support to a war effort occur.

Natural climate solutions (NCS) (see also the *forgotten solution) (ecology, environmental advocacy)*. Refers to "conservation, restoration, and improved land management actions that increase carbon storage and/or avoid greenhouse gas emissions across global forests, wetlands, grasslands, and agricultural lands."[13]

Nonlocality *(ecophilosophy, Timothy Morton)*. One of the five hyperobject characteristics. The hyperobject is distributed across such vast geographical areas so that it cannot be perceived in its entirety. This nonlocality characteristic disables people's ability to make easy cause and effect associations.

Nurturing capital *(care ethics, social justice, equality studies, Kathleen Lynch)*. At the nation-state level, the way in which the state cares for its people, through ensuring an equitable society, quality of life, and opportunities to reach human potential. It directly affects the strength of the state.[14]

Phasing *(ecophilosophy, Timothy Morton)*. One of the five hyperobject characteristics. In the way the moon looks different according to its phase, humans only see "phases" or glimpses of the hyperobject at any time. The scale of the hyperobject means humans cannot determine which phase state they are seeing or how many there are. The hyperobject is inaccessible.

Pink swan *(entangled security, E. G. Boulton)*. A term to describe the macro-phenomena of a new worldview emerging from both academic research in women's studies and feminism, plus a wider global social movement relating to female empowerment.

Planetary boundaries. An approach to define an ecologically safe operating space for humanity on Earth. It identifies nine categories and sets boundaries for each: climate change; biodiversity loss; nitrogen cycle; phosphorus; ocean acidification; land use; freshwater; ozone depletion; atmospheric aerosols; and chemical pollution. Developed in 2009 by Johan Rockström and Will Steffen et al.

Post-human *(new materialism, agential realism, OOO, ecophilosophy)*.[15] Used in PLAN E to denote a philosophical outlook that is not centered around human beings, but rather views humans as part of larger ecological systems and matter.

Principles of war (POW) *(military)*. Planning principles that emerge from the generic study of successful warfare, they are used to guide military planning.

Real options analysis *(finance)*.[16] *Real options analysis* takes the opposite approach; it "seeks out risky situations."[17] This keeps decision options and pathways open, such that if there were large fluctuations, choices which may have initially seemed unviable, may become newly viable, and even lucrative.

Relations of care (also practices of care) *(feminist security studies, Fiona Robinson)*. The interpersonal and social networks, and the activities involved in providing care.

Representative concentration pathways (RCP) *(climate science, IPCC AR5)*. RCP represent scenarios for future atmospheric GHG concentrations. Defined by their total radiative forcing (a cumulative measure of human emissions of GHGs from all sources expressed in Watts per square meter) pathway and level by 2100. Each RCP could result from different combinations of economic, technological, demographic, policy, and institutional futures.

Safe Earth (see also *Hothouse Earth*) *(climate science, science policy)*. A colloquial term for *stabilized Earth*.[18] *Safe Earth* also refers to a general vision of a state of peace and safety for all forms of earthly life.

Securitization *(international relations, critical security studies, Ole Wæver)*. Wæver first proposed securitization as being a speech act, which introduced complicated power dimensions, such as proposing to speak for all of society, plus "moving issues into a security frame so as to achieve effects different from those that would ensue if handled in a non-security mode."

Sendai framework for disaster risk reduction 2015–30 *(United Nations Office for Disaster Risk Reduction)*. The Sendai framework is a 15-year, voluntary, nonbinding agreement that recognizes that the state has the primary role to reduce disaster risk but that responsibility should be shared with others including local government, the private sector, and other stakeholders.

Slow violence *(security and literature, Rob Nixon)*. Violence that occurs gradually and out of sight.

Stabilization operations *(international relations, military, humanitarianism)*. A form of authorized international intervention to assist fragile, stressed, or failing nation-states. Approaches are tailored to each context but generally aim to help restore legitimate governing capacity and to help create the conditions that enable sustainable peace and security.

Straits of transition *(entangled security, E. G. Boulton)*. Creative term to describe the likely difficult and tumultuous period whereby human socioeconomic systems transition into zero or low GHG emissions structures, ecological balance, and hyperthreat durable socio-cultural-political systems, while also facing increased global warming impacts.

Surprise management *(risk and disaster management)*. "Knowledge, skills, and attributes that can read inconceivability and unthinkable impossibilities."[19]

Systems maintenance *(energy strategy, Doug Stokes)*. Refers to activities undertaken by a nation-state's security sector to ensure their citizens and nation's *material security (G)* needs, especially for fossil fuels supplies, are met.

Temporal undulation *(ecophilosophy, Timothy Morton)*. One of the five hyperobject characteristics. Hyperobjects operate on planetary, not human, timeframes. This overwhelms human cognitive abilities: "the timescale is a Medusa that turns us to stone."[20]

Tribal discourse *(entangled security, E. G. Boulton)*. A method of contextual analysis that involves assembling and listening to all vocational, institutional, and governmental actors whose activities bear upon the hyperthreat of climate and environmental change. The tribes are grouped by planetary, human, and state security. It specifically aims to overcome siloed analysis of security issues.

UN decade of ecosystem restoration 2021–30 *(see also natural climate solutions and the forgotten solution)*. *(Ecosystem and agricultural science and policy)*. Aims to massively scale up the restoration of degraded and destroyed ecosystems as a proven measure to fight the climate crisis and enhance food security, water supply and biodiversity.

Unrestricted warfare *(military)*. A futures concept developed by Chinese military generals whereby the range of mechanisms used to defeat an enemy is not limited to conventional military approaches but will include financial, trade, cultural, and environmental tactics, among others.[20]

Viscosity *(ecophilosophy, Timothy Morton)*. One of the five hyperobject characteristics. Refers to the honey-like nature of a hyperobject—it "sticks" to humans but also changes shape and form as people respond and interact with it.

Wake force *(entangled security, E. G. Boulton)*. A proposed new security/military capability with a specialist "human dimension" focus, which undertakes peacekeeping and population protection tasks. It is envisioned as infantry-based, with policing capabilities and a roughly 50/50 male-female mix. It would incorporate the women, peace, and security (WPS) aspects but also have expertise in other gendered issues and in areas like human trafficking and child protection.

Glossary Endnotes

1.   Pope Francis, *Encyclical Letter: Laudato Si' of the Holy Father Francis on Care for Our Common Home* (Vatican City: Catholic Church, 2015); Sallie McFague, *A New Climate for Theology: God, the World, and Global Warming* (Minneapolis: Fortress Press, 2008); "Islamic Declaration on Global Climate Change" (International Islamic Climate Change Symposium, Istanbul, Turkey,

18 August 2015); Ibrahim Abdul-Matin, *Green Deen: What Islam Teaches About Protecting the Planet* (San Francisco: Berrett-Koehler Publishers, 2010); and Thich Nhat Hanh, *Love Letter to the Earth* (Berkeley, CA: Parallax Press, 2013).

2. Elizabeth Boulton, "Climate and Environmental Change: Time to Reframe Threat?" (PhD thesis, Australian National University, 2020); and Doug Stokes, "Blood for Oil?: Global Capital, Counter-insurgency and the Dual Logic of American Energy Security," *Review of International Studies* 33, no. 2 (2007).

3. Stokes, "Blood for Oil?," 253.

4. John Keane, "Enter the Dragon: Decoding the New Chinese Empire," *Australian Foreign Affairs*, February 2021, 14.

5. J. C. D. Clark, "Secularization and Modernization: The Failure of a 'Grand Narrative'," *Historical Journal* 55, no. 1 (2012): 161–94.

6. Nina Silove, "Beyond the Buzzword: The Three Meanings of 'Grand Strategy'," *Security Studies* 27, no. 1 (2018): 27–57, https://doi.org/10.1080/09636412.2017.136007.

7. Elizabeth Lunstrum, "Green Militarization: Anti-Poaching Efforts and the Spatial Contours of Kruger National Park," *Annals of the Association of American Geographers* 104, no. 4 (2014): 817, https://doi.org/10.1080/00045608.2014.912545.

8. Úrsula Oswald, "A HUGE Gender Security Approach: Towards Human, Gender, and Environmental Security," in *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*, Hexagon Series on Human and Environmental Security and Peace 4, ed. Hans Günter Brauch et al. (Heidelberg, Germany: Springer-Verlag, 2009), 1157–81.

9. Timothy Morton, "Poisoned Ground: Art and Philosophy in the Time of Hyperobjects," *symploke* 21, nos. 1–2 (2013): 1.

10. Kathleen Lynch, "Affective Equality: Who Cares?," *Development* 52, no. 3 (2009): 410–15; and McFague, *A New Climate for Theology*, 413.

11. "JMAP Glossary," Forge, accessed 1 April 2022.

12. Bronson W. Griscom et al., "Natural Climate Solutions," *Proceedings of the National Academy of Sciences* 114, no. 44 (2017): 11645–50, https://doi.org/10.1073/pnas.1710465114.

13. Lynch, "Affective Equality," 410–15.

14. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2003); Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter," *Signs: Journal of Women in Culture and Society* 28, no. 3 (Spring 2003): 801–31; and Graham Harman, "Tool-Being: Elements in a Theory of Objects" (PhD diss., DePaul University, Chicago, 1999).

15. Fischer Black and Myron Scholes, "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy* 81, no. 3 (1973): 637–54; and R. C. Merton, "Theory of Rational Option Pricing," *Bell Journal of Economics and Management Science* 4, no. 1 (Spring 1973): 141–83.

16. Richard De Neufville, "Real Options: Dealing with Uncertainty in Systems Planning and Design," *Integrated Assessment* 4, no. 1 (2003): 31, https://doi.org/10.1076/iaij.4.1.26.16461.

17. Steffen et al., "Trajectories of the Earth System in the Anthropocene."

18. Ali Farazmand, "Learning from the Katrina Crisis: A Global and International Perspective with Implications for Future Crisis Management," *Public Administration Review* 67, no. 1 (December 2007): 156, https://doi.org/10.1111/j.1540-6210.2007.00824.x.

19. Morton, "Poisoned Ground," 37–50.

20. Qiao Lang and Wang Xiangsui, *Unrestricted Warfare: China's Master Plan to Destroy America* (Boca Rato, FL: NewsMax Media, 2002).

Implications from the Guard's Extensive Use
A Cautionary Tale of 2020

Michael G. Anderson

Abstract: From 2020–22, the National Guard saw extensive use domestically to respond to a wide variety of crises, including natural disasters, civil unrest, pandemics, and border security in addition to overseas deployments. As these emergencies perpetuate, balancing the National Guard's use domestically and overseas is critical to preserving a sustainable and capable force. It is important for a broader understanding across local, state, and federal governments of the sustainability of these cumulative effects on this force.
Keywords: National Guard, readiness, COVID-19, training, border security

The year 2020 already has secured its place in American history alongside other watershed years such as 1969 and will take decades of studying and analysis to fully absorb, take in, and process to synthesize the full range of that year's events. In 2020, the National Guard played a role, if not a decisive effort, in every major domestic emergency, including the pandemic response, civil unrest, the southwest border, West Coast wildfires, hurricane responses, and political concerns, all while still fulfilling its overseas mobilizations and deployments. The National Guard's willingness, ability, and availability to respond to this wide range of domestic issues while still fulfilling its portion of the ongoing overseas commitments in 2020 created concerns beyond fiscal budgetary ones to others that tie to readiness and training, manning, and recruiting and retention.

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The Year of the Guard

The National Guard Bureau (NGB) referenced 2020 as "The Year of the Guard."[1] At the height of 2020, newly sworn in director of the Army National Guard (DARNG), Lieutenant General Jon A. Jensen told the audience at the annual convention for the Association of the United States Army, "we had 99,000 Army Guardsmen on some sort of duty order in support of COVID-19, civil unrest response and overseas missions." He went on to highlight that there are more deployed for firefighting duty, at the southern border, for hurricane response, and election duty.[2] This number increases when accounting for the entire National Guard, not just Jensen's purview of the Army National Guard (ARNG) forces. In another report, Major General Steven S. Nordhaus, NGB director of operations, stated that 120,000 guardsmen across the guard's entire 450,000 force (Army and Air National Guard) mobilized, including domestic and overseas activations.[3] At its peak in the summer of 2020, the nation activated 84,000 guardsmen domestically, including 41,500 responding to civil unrest and 37,000 for COVID-19 response; meanwhile, 118,000 guardsmen mobilized, including for overseas deployment.[4]

The Army and the National Guard historically have served in domestic crisis response and natural disasters. While the active-duty forces have participated multiple times in the past to domestic crises, it understandably more regularly falls on the various state National Guards.[5] Adhering to their dual mission, the state National Guard's answer to their respective governors while employed by the state in state active duty (SAD) or in a Title 32 status, federally funded but state administered and controlled for support to the federal government. The National Guard also must support their federal mission—commonly shorthanded to "wartime mission." It is this mission in support of national security and defense that guard units use federal funding to train for this wartime mission under Title 32 status.

However, Title 32 status is also used to fund much of the National Guard's domestic response events. In light of this dual purpose, the use of the guard, its funding, its people, its time, and its equipment life cycles requires delicate balancing, which recent events indicate have tilted lopsidedly toward one side of the scale to the detriment of the other and to the servicemembers. State governors have unfettered access to their guards and to assistance through NGB for coordination for help from other states' guards. The Department of Defense (DOD) also needs to have its largest reserve combat force available, trained, and prepared for its ongoing and potential overseas missions. Whether it is a state governor or the DOD, just because you have ready and easy access to a tool does not mean you should use it if it is not the right one. In this case, specifically, it is balancing dual use of Title 32, as SAD is purely the purview of the governor. SAD does not fiscally (being state funds) or timewise affect guardsmen and their federal mission or preparedness (SAD does not count toward regulatory codified guard annual training requirements). The only impacts SAD could have is if it, generally speaking, leads to a recruiting or retention issue with the

guardsmen not wanting to join or stay in due to extensive state active duty, thus the unit loses a guardsmen that they would have otherwise had for their wartime mission.

The solution may be broader, including finding or creating or resourcing the right tool. If the use of the guard during the last years is accepted as precedence and expectations are made for their ready application to any and all ills for state governments, then this balance could be critically upset and unsustainable for the nation. While a reexamination of extensive domestic use of the National Guard may be painful in that it leads to expansion of other Services and their budgets or capabilities to the detriment of the guards, if that reorients the state guards to a more balanced mission focus while the states are receiving their needed crisis response efforts then the balance is achieved. The states' domestic crisis needs are not to be taken lightly or dismissed, but neither is the critical role of the modern National Guard, even more so as an operational reserve and no longer a strategic reserve to its federal duties and responsibilities. Striking the better balance is the solution, however painful or unpopular it may be for all parties involved for the greater good.

Current usage surpassed the previous record of guardsmen activated in 2005 for the Hurricane Katrina disaster response.[6] Katrina, a massive storm with a radius of 30 nautical miles from its center, with the strongest winds extending 75 nautical miles out and covering an area roughly the size of Great Britain, made landfall in southern Florida on 25 August 2005. By 29 August, Katrina had crossed into the Gulf of Mexico, gained strength, and struck the Gulf Coast from Alabama, Mississippi, to Louisiana, devastating New Orleans. The National Guard response came from all 50 states; 5 territories; and the Washington, DC, National Guard—not counting the federal response and active-duty U.S. Army's contribution, it peaked in early September at 50,031. However, unlike the continuous demand in 2020, this drain on the National Guard began dropping almost immediately to just more than 20,000 by mid-October, and by early December nearly all out-of-state guardsmen were gone.[7] This event led then-chief of National Guard Bureau (CNGB) Lieutenant General H. Steven Blum to promise concerned governors that the National Guard would balance better in the future between meeting its Global War on Terrorism requirements with allowing governors to retain enough of their guardsmen to address domestic emergencies. This balance resulted in a quarter of the guard overseas, a quarter preparing for overseas duty, and the remainder available on-hand for governors' use in domestic emergencies.[8] Katrina provided a case in point of the governors' concern, as Louisiana's largest guard unit, the 256th Infantry Brigade Combat Team, had been in Iraq when Katrina struck, resulting in Louisiana relying even more heavily than normally on out-of-state guard support. In perspective, 80,000 guardsmen were deployed when Katrina struck, with roughly 50,000 committed to Katrina at its peak, which meant 130,000 guardsmen were engaged between Katrina and overseas missions, not counting wildfires, post-9/11 critical infrastructure security missions,

or other domestic uses for the guard in 2005.[9] However, the guard made it work in 2005, establishing the precedent, one that was exceeded in 2020.

Guardsmen can be used with state managed, federally funded Title 32, the federally managed and federally funded Title 10, or the state-funded, state-managed state active-duty status. The balance of 2020 saw guardsmen responding to various domestic missions, such as the wildfires, and did not account for those at the border in a mission that straddled the line of domestic response or national security, crossing over between the various statuses. In addition to these historically common domestic uses for the guard force, although unheard of in their cumulative use in 2020, the Year of the Guard also has seen new domestic demands placed on the force as the Army Guard's cyber units have been placing more soldiers on duty for an ever-expanding mission at the state and regional level.[10] This potentially is a window into even more increased domestic demands placed on the largest element of the Department of Defense's reserve component.

During this year, many individual guardsmen contributed to multiple different missions throughout the year. Minnesota's 1st Armored Brigade Combat Team of the 34th Infantry Division not only conducted civil unrest response and managed the impacts of COVID-19 but also was the first Army unit to restart large-scale training with its modified rotation at the National Training Center at Fort Irwin, California, in 2020.[11] Many of the same guardsmen have been activated periodically during the last 24 months for a variety of missions. Florida's adjutant general (Major General James O. Eifert) voiced this concern, stating, "I can tell you it's almost impossible to not have people who have not done all of those things." This was supported by Texas's adjutant general (Major General Tracy R. Norris) saying many of her troops would do at least two if not three of the various missions that year.[12] Even in some ironic cases, guardsmen who were laid off in their civilian job due to budget cuts were activated in the same position in their National Guard uniformed capacity, such as police officers who were also Army military police.[13]

Jensen emphatically stated as he took over as DARNG that the Army Guard "is as relevant and necessary across an array of missions than we ever have been, both domestic missions and our overseas missions in support of the National Defense Strategy." He reaffirmed the chief of staff of the Army's promoted priorities and claimed his top priorities are people first and developing leaders.[14] With an ongoing demand to not only support continuing overseas commitments that go far beyond a now-ended Afghanistan mission to include Europe, the Pacific, Africa, and the remaining additional Middle East deployments, can the National Guard sustain more years like 2020 and the growing precedence being set for increased domestic guard use? This includes balancing the guard's pivotal role in preparedness and national security readiness for great power competition and fulling its role in deterrence. The issues appear to be budgetary, but it goes beyond just fiscal dollars for readiness and training and goes into time commitments for an all-volunteer, part-time force with another

full-time job, that potentially identifies a looming personnel crisis in the midst of a budgetary one.

Governors in all 50 states; Washington, DC; and the territories activated their guard for COVID-19 responses. More than 44,500 troops were used in the pandemic response with the numbers peaking at 47,100 in May 2020.[15] Their efforts included running community-based testing sites, supporting medical capacity, providing logistical and transportation support, assisting state emergency operations centers, manning call centers, distributing food and supplies, building temporary facilities such as field hospitals, and assisting in cleaning and sanitizing spaces.[16] Then-CNGB General Joseph L. Lengyel noted the double-edged effects of calling up National Guard medical personnel in that it would take them out of their civilian medical professions only to then reuse them in their medical soldier roles.[17] Lengyel asserted that guard forces supporting local and state law enforcement authorities conduct activities that active-duty forces lack legal authority to do—this largely refers to the Posse Comitatus Act of 1878.[18]

However, this interpretation comes with limitations. It can be interpreted to only apply to National Guards operating in their state under their parent state's governor, not of National Guards operating in another state; in this case, their legality is the same as an active-duty formation under the Posse Comitatus Act. Legal arguments are made that under an Emergency Management Assistance Compact (EMAC), states can operate within another state while still under the jurisdiction, laws, and authority of its home state's governor. This assertion has rarely been tested, in most cases, even under EMACs between states, outside National Guards do not conduct law enforcement activities without approval from the DOD; they only provide assistance and support to law enforcement. A stricter interpretation holds that once a guard force is employed outside its parent state, legally its authorities are no different than an active-duty force; however, the resourcing, pay and benefits, other administrative aspects, and its chain of command remain different, even if its authority does not.[19] This then becomes a deeper discussion on the legal authority differences between SAD, when there is no legal question Posse Comitatus does not apply, and Title 32 federally funded guard activities under governor control when outside the guardsmen's home state. Even as the guard provided massive support to federal, state, and local pandemic response efforts, it was far from the only large-scale domestic crisis the guard was called out for in 2020.

The racial protests, counterprotests, violence, and instability across much of the nation in mid-2020 saw multiple states activate and use their National Guards in support of local law enforcement. Where the National Guard typically takes a supportive, backseat role, in some cases, the guard was used to convey what was meant to be a more acceptable, neutral face to the response. The protests reached a pinnacle in June, seeing 24 National Guards employed, including those from Arizona; Arkansas; California; Colorado; Florida; Georgia; Illinois; Indiana; Kentucky; Michigan; Minnesota; Nevada; North Car-

olina; Ohio; Pennsylvania; South Carolina; South Dakota; Tennessee; Texas; Utah; Virginia; Washington; Washington, DC; and Wisconsin.[20] Many of the individuals responding to this call were the same ones who were on pandemic response. In many cases, even this was not their last activation, but many of the same faces in the pandemic response and the civil unrest were those in the south and southeast a few months later conducting hurricane relief efforts or out west fighting wildfires across California.

Lieutenant General Jensen indicated the increase in hurricanes and span of wildfires in recent years suggests a growing demand for National Guard support, inherently placing a higher demand on soldiers' service outside of their federally mandated training.[21] Approximately 2,000 troops from California and other states were called to duty to fight wildfires burning in an area the size of Connecticut. Army Guard aviation support included helicopters and crews with support from more than 10 states, including California, Arizona, Idaho, West Virginia, Utah, Wyoming, Wisconsin, Mississippi, and Oklahoma. Even international support arrived to assist in fighting the fires from Canada, Israel, and Mexico.[22] The whole guard is affected by this, including the Air National Guard. For example, the 2020 fire season resulted in the specialized 152d Airlift Wing of the Nevada Air Guard having their longest activation since the U.S. Department of Agriculture's Forest Service airborne firefighting system for Lockheed C-130 Hercules was introduced in 2016. The 2020 fire season saw all four military units supporting the airborne firefighting system used from across four different states: Nevada, California, Colorado, and Wyoming.[23]

As of September 2020, 1,400 guardsmen (including more than 1,000 in the Army Guard) supported the northern and central California wildfire response.[24] The assistant adjutant general of California (Major General Matthew P. Beevers) claimed, "This type of flying builds readiness. Our crews aren't simply doing laps around Fort Hood banking hours. This flying absolutely ensures that lives will be saved in the war fight."[25] While on a linear spectrum of flying laps to get required flight hours or flying firefighting support, the latter is more dynamic for training—this obscures the point that guard aviation should always prioritize creative ways to build readiness while meeting flight hours aside from laps, such as in the return to great power competition and peer conflict, aviation units should be aligning their flight hours with training of ground units, or even more so, there should be a line of volunteering units to fill the guard's slots for combat support and combat service support units at the Army's combat training centers instead of the Army Guard trying to convince units to participate in these opportunities. In this manner, not only do they get a minideployment exercise experience of packing, loading, and shipping equipment to the combat training center but also get to train in the apex readiness developing exercises available. Instead, leaders champion domestic response as if it is better preparation for wartime missions, which is difficult to argue when there is a lack of a thinking opposing force in a domestic response. Instead, leaders should be maximizing the best available training for the growing peer competition rather than

focusing on how domestic responses that are nothing like the anticipated future combat environment are better than the training their units would otherwise be doing. Though it may take more coordination, time, and effort—possibly even between states—to achieve this sort of maximized training, it would reap appreciable dividends. The use of guard units for domestic response should not be portrayed as better training than they would normally have. It should be done in extremis, while their normal training is the best possible for preparing them for the next fight. Training with incidental benefits, a common method to justify guard units conducting domestic response in lieu of their federal mission training, occurs only when that training is complemented by their domestic response, not because the domestic response is better training. If that is the case, then the training in the first place is a problem to be rectified.

There are a few unit types, aviation being one of them, which have domestic response employments that are relatively aligned with their operational deployment tasks, as compared with a ground combat unit conducting COVID-19 testing points, or hurricane response, which is nothing like their federal mission. However, even these units' training could be better emphasized to support preparedness for major combat operations and only used for domestic responses sparingly and when absolutely necessary as a last resort. Without this exigency it is not a balanced trade for the majority of guard units; it is a categorical readiness and training loss for those units to conduct domestic operations at the expense of their operational mission training, and this should be a concern with the rising demands on so many guard units for domestic operations.

National Guard presence on the southwest border is nothing new. Dating back to the 1916–17 border security deployment of the U.S. Army and the Army National Guard, which resulted in General John Pershing's pursuit of the Mexican outlaw Pancho Villa, the guard has had a presence. From May 1916 to February 1917, nearly 110,000 Army guardsmen patrolled the southern border and simultaneously gained experience and trained for their upcoming contributions to the U.S. effort in the First World War.[26] Even as recently as the 2005–6 Operation Jump Start under President George W. Bush saw guardsmen on the southwest border. The operation lasted more than two years from 15 June 2006 until 15 July 2008 and included volunteers (no involuntary activations) from all 50 states, five territories, and Washington, DC. Cumulatively, this included more than 30,000 guardsmen, with roations of 6,000 on the border the first year, dropping to 3,000 for the second year. The vast majority of these, more than 80 percent, came from the Army Guard, while it is notable Air guardsmen were needed as well due to the operational demands placed on the National Guard globally.[27] The latest iteration began in 2019 under President Donald J. Trump with these border deployments continuing under the current administration of President Joseph R. Biden Jr. More than 4,000 troops remained on through 2021, with a slight reduction to 3,000 approved to remain on into fall of 2022, the fourth year of the mission, indicating an ongoing requirement that is continuing to be

shifted to a fully guard-supported task.[28] When taken in totality, it was closer to 5,600 troops on the southwest border mission in 2020, with 2,600 active-duty troops supported by 2,450 National Guard troops and an additional 600 active-duty troops sent "to help address health protection measures" due to COVID-19.[29] In a developing controversy, these federal missions are different from the additional state-level missions ongoing in Arizona and Texas where they are using their own troops, in the case of Texas even outside state National Guard troops, to buttress the federal southwest border mission, with South Dakota's National Guard deployment gaining controversy from its funding source.[30] Additionally, the guard provided support to law enforcement at both the Milwaukee, Wisconsin, Democratic Convention and the Charlotte, North Carolina, Republican National Convention.[31] While some National Guard support to local law enforcement for these sorts of events, and even others such as the Super Bowl is not unheard of, when these normal domestic guard activations are added to true emergency response uses of the guard domestically, the cumulative effect is debilitating.

While 2020 was a tough year for the nation and an unprecedented year for the National Guard domestically, it may be less excessive going forward as it only fed off the steady, growing precedence of using the National Guard for other issues. Even the demanding year of 2020 has barely slackened into 2021 as approximately 26,000 guardsmen from the 50 states; 5 territories; and Washington, DC, stood on duty for President Biden's inauguration. While typically every guard has ceremonial representation at each inauguration, this was far more than normal—more than all the troops deployed in Iraq, Syria, and Afghanistan combined. Another 8,700 guardsmen were on duty in their home states on that date for possible civil unrest support, with 23,000 still supporting COVID-19 responses across the nation. Another 34,000 were overseas, on the southwest border mission, or activated for other missions.[32] Even into 2021, more unprecedented requests on the guard were made, such as the Massachusetts's governor using more than 200 guardsmen to fill a school bus driver shortage.[33] In similar cases, the New Mexico governor called on guardsmen to fill substitute teacher vacancies, and multiple states have started using guardsmen to fill nonmedical staff positions in hospitals and long-term elderly care facilities.[34] These are more recent, clear examples of the use of guardsmen as an easy answer to a state's problem, whether it is a lack of nurses, school bus drivers, or teachers due to labor shortages, poor pay, or COVID-19 fears. Even if the guardsmen are not the correct fit, they are an expedient tool of policy for the state government that is readily available as long as there are either state funds for SAD or Title 32 federal funds, as is common. Additionally, sometimes these abnormal requests are not fulfilled, such as when Arizona suggested the idea that 135 of their guard be used to support their chronically understaffed prison system in Maricopa County. Though this request was later rescinded, the sheriff's office still indicated future interest in their use.[35] All this use, cumulatively

adding up, comes with implications that leaders, professional decision makers, and policy makers should understand.

Implications of Extensive Use

Balancing dual missions is not unprecedented. It occurred during the Global War on Terrorism with its own border mission, homeland security missions, and hurricane and wildfire responses, notably Hurricane Katrina. Even before that, the National Guard has a long history of domestic use. However, the levels of use steadily increased over time with the guard becoming not a last resort but a chief reliance of the state and national domestic emergency response, the levels of which have become unprecedented in recent years. This occurred in tandem with a declining budget as the national deficit is seen by some as the biggest national security threat.[36]

The imbalance of the National Guard's duality in mission and two masters—one the state governor and the other the president—is not unprecedented, only this time the tables have turned. As recent as 2005, the state governors, through their adjutants general, expressed their concerns to the NGB about the perceived overextension of the guard for its wartime mission at the expense of having their forces at home for emergencies. This led to a compromise, balancing the ratio of guard units deployed, those mobilizing or demobilizing from a deployment, and those readily on-hand for governors to use for domestic response. The 2005 compromise between governors and the NGB resulted in NGB's stated goal of ensuring there were guard forces available for states' domestic emergencies.[37] In this case, the careful balance shifted in the direction of extensive guard use overseas, limiting the state's use during emergencies. Now, the predominance of guard use being used domestically has turned this imbalance.

The current problem set is even more complex since its high tempo is in fact domestically oriented, not overseas as with the war on terrorism, with the prioritization now shifting from opposing Title 10 use for the sake of Title 32 to now fencing off Title 32 preparedness and availability for federal and national strategic purposes. Additionally, soon there could become a focus for preserving use for inside a home state and a decline in the ability to honor EMACs for intrastate support due to the possibility of not having the capacity and capability for their own state's needs. At a time when domestic crises have shown the interrelated nature of crises across state lines, this could be troubling. Likewise, the integral roles of guard forces in defense strategy means their readiness and availability for their federal mission still remains a priority. While they may not have been deployed as much as during the past two decades, the part played in great power competition, deterrence, and plans requires a certain degree of protection from overuse domestically at the cost of their overseas use preparedness. This is not to say the guard tempo is too high—it has been high for more than two decades, but it is what it is high for and what implications a precedence of

this sets for a future that may return to another period of high demand overseas, when local, state, and national government became accustomed to the domestic reliance on the guard.

Fiscal Concerns

The four-month-long guard mission to the Capitol cost more than $500 million from the National Guard's operations and maintenance budget, and without emergency reimbursement from Congress will result in cuts to training, leading to unavoidable dips in readiness. Recently confirmed Army secretary Christine Wormuth stated, "Without these resources, the Guard . . . will find themselves with training issues." Secretary of Defense Lloyd J. Austin echoed the secretary's concerns that lacking reimbursement for funds spent on the Capitol response mission, impacts to the guard's ability will be felt in training and preparation. Particularly mentioned was readiness in aviation and ground vehicle units.[38] This fiscal resourcing crisis was mitigated by a last-minute emergency spending bill passed by Congress for the guard's capitol response budget deficit on virtually the last day before it curtailed the guard's end of fiscal year actions.[39] Even as this budgetary crisis was averted at the last minute, Capitol Police requested guard support again in September 2021 in preparation for additional public demonstrations in Washington, DC, reinforcing the perceived reality of an uninhibited, continually growing reliance of the guard for domestic response, at the expense of its dual mission.[40]

The Capitol response incident placed both Congress and the National Guard in an unwinnable position of precedence. On one hand, Congress would not want to establish precedence that the guard can answer any and every call made for it, spending its budget with a guarantee that when it proposes the bill and threatens a default in operations and training that Congress will automatically pay. On the other hand, the National Guard does not want to accept a precedence that when it answers a call for domestic emergency support, it does so without knowing that it will have the fiscal resources to still maintain its standard operations, training, and maintenance rates for the fiscal year. However vibrant the fiscal implications are from the use of the guard, it is not the only concern with the constant, consistent, and increasing use of the force.

The COVID-19 response is a variation on the fiscal theme. The National Guard COVID-19 support to the Federal Emergency Management Agency (FEMA) has been one of the largest and continuous of the recent Title 32 domestic response missions. States using Title 32 federal funds for COVID-19 response had variations of 75–100 percent reimbursement by FEMA. Recently, FEMA extended all states' qualified Title 32 COVID response costs to 100 percent refunded until 1 April 2022. As of January 2022, it resulted in $2.7 billion in reimbursements.[41] Here, FEMA has borne the fiscal costs of the National Guard COVID-19 response, resulting in minimal budgetary issues for the guard's use of Title 32 funds for COVID-19; however, it still illustrates that fiscal concerns are only part of the problem. The COVID-19 response beyond

Title 32 or SAD costs has consumed guardsmen's time, impacting their civilian pursuits and training readiness. The National Guard simply putting money toward the problem only addresses some concerns, though absolutely critical ones, as the National Guard is an entity inherently designed to be a mostly part-time force and only occasionally and intermittently activated as a full-time force. It is balancing this time between preparing for the federal overseas mission and the domestic state response mission that is imperative. There is only so much time each year a guardsmen can, or is required to, serve without a presidentially authorized involuntary mobilization.

Issues of Citizen-Soldiers' Time

Beyond just fiscal issues, extensive guard use leads to other areas of potential concern and importance to note for leaders, civilian, and uniformed personnel. Monetary resources are only one aspect. It is easy for an active component and even full-time guardsmen to realize that money is not a sole solution, however visceral it may seem to be in public debates. There is a balance for citizen-soldiers that no matter how much money is available, they no longer are available. This is a fact of their part-time nature. Once they have accumulated their statutorily required service for a year, the only two methods to continue use are compulsory activations or through voluntary conditions. If the leadership decides, or legally cannot, activate them involuntarily for an event then they cannot be forced to; likewise, if they cannot be convinced to volunteer then they will simply not be available for use or training. Then if, or, even when the training resources are reimbursed for units to achieve their federally expected readiness levels, servicemembers could decline attendance without voluntary participation, directly influencing a unit's ability to achieve a specified readiness level due to the percentage of overall unit participation or absence of key billet holders, such as an incomplete staff, command team, or key small unit leaders. Similarly, if domestic responses are comprised of ad hoc formations made up of volunteers from diverse donor units, then those units conducting training without their servicemembers while they are volunteering for domestic responses face the same issues of achieving stipulated readiness requirements due to manning and key position vacancies during the training. This is a critical consideration in how, who, and for what length guard units are selected, used, and manned for domestic responses that reflect the organization's responsibilities for readiness and availability for the broader federal requirements and role in the national strategy. There comes a time when for a guardsmen no amount of money can incite them to conduct more training and spend more time away from family and employers; if so, they would have been in the full-time military.

In light of this concern, the White House's budget proposal of even the slight reduction of 500 guardsmen for the Army Guard and a status quo for the Air Guard is notable. While not a major decrease, at a time of increased utilization at the end of more than two decades of continuous operational de-

ployments and growing requirements for readiness in great power competition, the guard seeks increases to balance increasing domestic use with overseas obligations, not a decrease in personnel. General Daniel R. Hokanson, successor as CNGB to General Lengyel, makes clear this comes at the end of a year with more guard troops activated than at any other time since the Second World War. Hokanson stated this added up to 21 million days of activation for the guard. Hokanson voices many shared concerns with the fatigue of the guard as another factor for desiring an increase in the force.[42] By one account, more than one-third of these days were for domestic response with an estimation that more than 8.4 million of those days were for domestic responses in 2020.[43]

Recruiting and Retention Impacts

Understandably, this raises potential future recruiting and retention questions. This story remains clouded as effects of this only manifest in waves years afterward regarding retention. On its face, this seems a possibly misplaced concern with the Army Guard meeting its retention mission in 2020. Job security of the multiple, repeated, and enduring activations may have impacted this, but recovering economies and balancing returning to work with intermittent military service may not hold into the near future when those activated repeatedly in 2020 begin to face reenlistment and extensions.[44] Connect this with a tightening budget resulting in the Army Guard eliminating retention bonuses in 2021—this does not affect Air Guard bonuses or Army Guard initial enlistment bonus program for new recruits—it impacts keeping the experienced soldiers, the ones repeatedly activated during the last couple years. Retention officers in some states emphasized that the benefits and bonus programs are key drivers for reenlistments in uncertain times, even as those programs are facing restrictions and termination due to fiscal restraint.[45]

This may not be a major concern immediately with the Army Guard repeatedly exceeding its retention goals since 2019, but its sustainability is questionable without bonuses and cumulative fatigue if the force is not grown and tempo maintains or, worse, increases.[46] Additionally, regarding initial recruits, some recruiters indicated that the guard's highly visible response to the racial justice protests served as a double-edged sword. A recruiter stated the individual's cultural and political views played a far more powerful role in their decisions to enlist after those events.[47] In another example, the use of volunteers for the southwest border mission has negatively affected morale, impacting retention and even recruiting. This is aside from exacerbating the training readiness by the method of taking volunteers from various units to fill the border mission unit with a volunteer-only unit for the mission. In this case, the Missouri Army National Guard unit, made up of elements from 34 other guard units, faced a challenging mobilization to the border resulting in poor experiences and negative press due to how it was formed, used, and the quality of life.[48]

On 29 January 2022, the satirical site *Duffle Blog* posted an article "Amid Omicron Surge, National Guard Called Up to Man entire DOD" in typical

fashion mocking the extensive use of National Guard efforts supporting domestic response.[49] Though satire is of course not fact, it can be a reflection of society and the existence of the article on the overuse of the guard illustrates some of the feelings and perspectives held on this subject by those in uniform.

The Florida adjutant general spoke to his state congress on the issue of use. He told them, "You can only go back to that well so often because these are volunteers. . . . How much are their employers and families going to be willing to allow this to continue with the demand that it's put on our soldiers?" He emphasized that the year included pandemic response; two deployments to Washington, DC; hurricanes; support to law enforcement; and overseas deployments stressing his force in 2020 into 2021. Adding troops could alleviate how often the same troops are used. Although it may start with volunteers, at some point they become volun-told individuals. Some recommended solutions include discussions on force growth, increased health care benefits through extension of TRICARE to the whole reserve component force, better pay management between the various guard authorization codes, and less restricted access to benefits such as the GI Bill for domestic service or activities under Title 32.[50]

The current DARNG, General Jensen, stated, "The culture of the Army is to say yes, and we are going to continue to be tasked by our states and by our nation, and we're going to say yes."[51] In light of this, the guard has certainly answered its call, as it has done for centuries of dedicated service both at home and abroad many times simultaneously and will continue to uphold this tradition, but at what potential cost is the concern here. The last years have been taxing on the nation and its citizen-soldiers. Beyond a pat on the back for their efforts, implications of this use must be considered, weighed, and addressed by professional leaders with these concerns mitigated. As the next crisis looms, and some of the current ones endure into seemingly ongoing crises, lessons should be gleaned. Lessons on priority of use, force balance (i.e., when can the burden be shared beyond just the guard component to achieve the same ends and end-strength discussions?), legislative procedures for fiscal certainty for readiness, training, maintenance, and balancing talent management for both initial recruitment and retention. Professor of public service at the State University of New York at Albany, retired Brigadier General F. David Sheppard stated, "the use of the military is an absolute last resort for anything."[52] As of June 2021, 67,000 guardsmen remained activated domestically and overseas as continued domestic requests for guard support to local, state, and national government continue.[53]

Endnotes

1. Davis Winkie, "2020 Saw the Guard Used the Most Since World War II: Is a Retention Crisis Looming?," *Army Times*, 13 December 2020.
2. "National Guard Remains Busy in Unprecedented Year," Association of the United States Army, 13 October 2020.

3. Meghann Myers "After COVID-19 and Protest Response, the National Guard Is Gearing Up for a Rough Hurricane Season," *Military Times*, 22 June 2020.
4. Elaine S. Povich, "Same Mission, Different Pay for National Guard," Pew *Stateline* (blog), 18 June 2020.
5. Clayton D. Laurie and Ronald H. Cole, *The Role of Federal Military Forces in Domestic Disorders, 1877–1945* (Washington, DC: Center of Military History, 1997); and Paul J. Scheips, *The Role of Federal Military Forces in Domestic Disorders, 1945–1992* (Washington, DC: Center of Military History, 2005).
6. William B. Boehm, Renee Hylton, and Thomas W. Mehl, *In Katrina's Wake: The National Guard on the Gulf Coast 2005* (Arlington, VA: Historical Services Division, Office of Public Affairs, National Guard Bureau, 2010), 59.
7. Boehm, Hylton, and Mehl, *In Katrina's Wake*, 7, 13–14, 26, 35, 64.
8. Michael G. Anderson, *Mustering for War: Army National Guard Mobilization for the Global War on Terrorism* (Fort Leavenworth, KS: Combat Studies Institute Press, 2020), 52–53.
9. Boehm, Hylton, and Mehl, *In Katrina's Wake*, 35.
10. Gina Cavallaro, "Jensen: 'We're Going to Say Yes'," Association of the United States Army, 8 October 2020.
11. Vanshur, "National Guard Busy."
12. Myers, "After COVID-19 and Protest Response, the National Guard Is Gearing Up for a Rough Hurricane Season."
13. "Historic Year for Guard Activations Proves Stressful on Those Who Serve."
14. Cavallaro, "Jensen."
15. Davis Winkie, "The Guard Isn't Going Home. Leaders Fear Retention May Suffer," *Military Times*, 28 January 2021.
16. "National Guard Assists Response to the COVID-19 Pandemic," National Conference of State Legislatures, 28 April 2020.
17. Sean D. Naylor, "National Guard Activation Expected to Double by Weekend to Help Combat Coronavirus," Yahoo News, 19 March 2020.
18. Naylor, "National Guard Activation Expected to Double by Weekend to Help Combat Coronavirus."
19. Emergency Management Assistance Compact, Pub. L. No. 104-321, 110 Stat. 3877 (1996), Article XIII; and Jill Goldenziel, *Deployment of the Military on U.S. Soil: Legal Considerations* (Quantico, VA: Marine Corps Command Staff College, 2021).
20. Povich, "Same Mission, Different Pay for National Guard."
21. Cavallaro, "Jensen."
22. Vanshur, "National Guard Busy."
23. A1C Michelle Brooks, "Nevada National Guard Pays Tribute to MAFFS Airmen," DVIDS, 30 September 2020.
24. "National Guard Continues Wildfire Operations," Association of the United States Army, 24 September 2020.
25. Vanshur, "National Guard Busy."
26. Julie Irene Prieto, *The Mexican Expedition, 1916–1917* (Washington, DC: U.S. Army Center of Military History, 2016), 7.
27. Michael D. Doubler, *Operation Jump Start: The National Guard on the Southwest Border, 2006–2008* (Arlington, VA: Historical Services Division, Office of Public Affairs, National Guard Bureau, 2008), 26, 32, 43, 66, 68, 70.
28. Rose L. Thayer, "Troops to Remain at US-Mexico Border through 2021," *Stars and Stripes*, 25 June 2020; and Rose L. Thayer, "Deployment of US Troops Along US-Mexico Border Will Stretch into a Fourth Year, Pentagon Announces," *Stars and Stripes*, 6 July 2021.
29. Thayer, "Troops to Remain at US-Mexico Border through 2021."
30. Thayer, "Deployment of US Troops along US-Mexico Border Will Stretch into a Fourth Year, Pentagon Announces."
31. Mary Junell and Briana McFarland, "JTF-RNC Event Responsive, Reliable Ahead of RNC Eve," DVIDS, 26 August 2020; and "Governor's Conference Touches on

COVID-19, Democratic National Convention, Future Challenges," Wisconsin National Guard Public Affairs Office, 12 March 2021.

32.   Winkie, "The Guard Isn't Going Home."

33.   Joanna Slater, "Welcome Back to School. Your New Driver Is Wearing Fatigues," *Washington Post*, 7 October 2021.

34.   Morgan Lee and Cedar Attanasio, "New Mexico Asks Guard Troops to Sub for Sick Teachers Amid Omicron," *Army Times*, 20 January 2022; and Eduardo Medina and Amelia Nierenberg, "Covid News: States Enlist National Guard to Help Hospital," *New York Times*, 21 December 2021.

35.   Jimmy Jenkins, "Maricopa County Sheriff's Office Asked for National Guard Troops to Help Understaffed Jails," *Arizona Republic*, 29 October 2021.

36.   Laura Bassett, "Adm. Mike Mullen: 'National Debt Is Our Biggest Security Threat'," HuffPost, 25 May 2011.

37.   Anderson, *Mustering for War*, 52–53; and Michael D. Doubler, *The National Guard and the War on Terror: The Attacks of 9/11 and Homeland Security* (Arlington, VA: Historical Services Division, Office of Public Affairs, National Guard Bureau, 2006), 76, 80–81.

38.   Davis Winkie, "Guard Soldiers May Lose Training If Not Reimbursed for Capitol Mission," *Army Times*, 22 June 2021; and Ethan Sterenfeld, "National Guard Could Cut Training, Maintenance without Supplemental Funding," Inside Defense, 23 June 2021.

39.   Joseph Clark, "Senate Passes Emergency Spending to Repay National Guard, Capitol Police for Jan. 6 Deployments," *Washington Post*, 29 July 2021.

40.   Carol D. Leonnig and Aaron C. Davis, "Capitol Police Chief Dropped Request for Armed National Guard Members to Be on Standby for Saturday's Rally after Pentagon Discussions," *Washington Post*, 17 September 2021.

41.   "National Guard Deployment Extended to Support COVID-19 Response," FEMA, 14 January 2022.

42.   Meghann Myers, "The National Guard Really Wants to Grow. The Latest Budget Is Reducing Their Numbers," *Military Times*, 23 June 2021.

43.   Winkie, "2020 Saw the Guard Used the Most Since World War II."

44.   Myers, "The National Guard Really Wants to Grow."

45.   Winkie, "2020 Saw the Guard Used the Most Since World War II."

46.   "Army Guard Stops Re-Up Bonus Program," National Guard Association of the United States, 22 June 2021.

47.   Winkie, "2020 Saw the Guard Used the Most Since World War II."

48.   Davis Winkie, "Death, Drugs and a Disbanded Unit: How the Guard's Mexico Border Mission Fell Apart," *Army Times*, 8 December 2021.

49.   Blondes Over Baghdad, "Amid Omicron Surge, National Guard Called Up to Man Entire DoD," *Duffel Blog*, 24 January 2022.

50.   Winkie, "The Guard Isn't Going Home."

51.   Cavallaro, "Jensen."

52.   Povich, "Same Mission, Different Pay for National Guard."

53.   Myers, "The National Guard Really Wants to Grow."

Operation Warp Speed and the Countermeasures Acceleration Group— A Twenty-first Century Manhattan Project

Preliminary Observations on the U.S. Department of Defense's Role in the Supply, Production, and Distribution of COVID-19 Vaccines and Therapeutics

John E. Hall, SES; Lieutenant Colonel Nate Packard; and the Countermeasures Acceleration Group (CAG) Team

Abstract: On 15 May 2020, Operation Warp Speed, later renamed the HHS-DOD COVID-19 Countermeasures Acceleration Group (CAG), was a collaboration between the Department of Health and Human Services, the Department of Defense (DOD), and the private sector to accelerate development, production, and distribution of effective vaccines and therapeutics to counter COVID-19 for the American people. The CAG was the nucleus of the "whole-of-America" effort to defeat COVID-19, and DOD's contribution was essential to the success of the CAG. This article highlights the contributions made by DOD, with a focus on innovative solutions and best practices that might apply to other DOD activities.

Keywords: pandemic response, Operation Warp Speed, Countermeasures Acceleration Group, CAG, COVID-19

> **O**peration Warp Speed was a bright spot: one of the greatest public health achievements in modern times. . . . The success of Operation Warp Speed proved what government can accomplish when it functions well, to improve our preparedness and protect the Nation.[1]
>
> ~ Dr. Scott Gottlieb,
> former Food and Drug Administration commissioner

Mr. John E. Hall was the director, defense element (DDE), CAG, from June to December 2021. As the DDE, he was the senior DOD representative to the CAG. LtCol Nate Packard was the CAG's deputy chief of staff, from June to December 2021. He was responsible for overseeing the CAG's records management program. The views expressed in this article are the authors' own and not the Department of Defense, the Army, or the U.S. Marine Corps.

Introduction

The coronavirus disease of 2019 (commonly known as COVID-19 or SARS-CoV-2) pandemic, declared a national emergency on 13 March 2020, was the greatest threat the United States has faced since World War II. The country reported nearly 80 million confirmed cases and more than 950,000 deaths as of 3 March 2022.[2] Officially announced by the Donald J. Trump administration on 15 May 2020, Operation Warp Speed (OWS), subsequently renamed the Health and Human Services (HHS)-DOD COVID-19 Countermeasures Acceleration Group (CAG) by President Joseph R. Biden Jr.'s administration, was a collaboration between the Department of Health and Human Services (HHS), the DOD, and the private sector to accelerate development, production, and distribution of effective vaccines and therapeutics to counter COVID-19 for the American people.[3] The CAG was instrumental in vaccine development and a vaccination program of historic proportions. DOD's contribution of manpower and logistics expertise was essential to its success. By mid-2021, the CAG accomplished its mission of delivering enough safe and effective vaccines to vaccinate every American. The CAG was dissolved on 31 December 2021, per its memorandum of understanding (MOU). The HHS Coordination Operations and Response Element (HCORE) assumed responsibility for all functions performed by the CAG.

The CAG was the nucleus of the "whole-of-America" effort to defeat COVID-19. It arrived at several hard-earned innovative solutions and best practices in that capacity. COVID-19 proved to be an elusive adversary, as evidenced by the rapid spread of the Delta and Omicron variants. The CAG had to be just as adaptive in meeting the challenge, thus providing a case study of rapid organizational adaptation in a crisis. Furthermore, the CAG represents one of the few bright spots in what many would agree has been one of the great tragedies in American history.[4] With nearly a million American lives lost and countless disrupted to varying degrees, the United States must learn and apply lessons learned from the experience.

This article is not intended to be a definitive account of the CAG's activities. Instead, it is an effort to provide an overview of the CAG's activities and share observations made by those DOD members directly involved in the operation. The intent is to highlight best practices applicable to other DOD endeavors. To paraphrase the CAG's director of COVID-19 vaccine development, a retired Army colonel and infectious disease specialist, it would be a shame if the United States did not learn from an effort of historic importance.[5] This article is a first step toward what the authors hope will be a more comprehensive effort to understand and learn from the CAG experience.

Two caveats are in order. First, the authors' focus on DOD is in no way intended to diminish the contributions of other institutions. The success of the vaccine program would not have been possible without the contributions of all stakeholders. The authors focused on DOD because that is what they know best. Again, the authors hope that this effort will be followed by a comprehen-

sive effort to better understand the CAG in its entirety. Second, the CAG was not resource constrained. The White House and Congress put its full weight behind the effort because of the scale of the crisis. Some of the best practices described below were only possible because the nation was responding to a national emergency and may not be feasible when conducting steady-state operations. Caveats aside, the CAG's successes show that the U.S. government—and America as a whole—can still accomplish big things.

OWS/CAG Timeline

13 March 2020	Declaration of national emergency concerning COVID-19
15 May 2020	Formation of Operation Warp Speed
5 June 2020	MOU signed by the secretary of HHS and secretary of defense to expedite vaccines to 300 million Americans
July 2020	Large-scale efficacy trials begin
11 December 2020*	First vaccine receives emergency use authorization (EUA)
24 February 2021	National emergency declaration extended for one year
1 May 2021	OWS was renamed the HHS-DOD COVID-19 Countermeasures Acceleration Group (CAG); new MOU takes effect
10 May 2021*	First vaccine receives EUA for adolescents (ages 12–15)
September 2021*	CAG assigned mission of managing distribution of therapeutics
1 November 2021*	EUA issued for pediatrics (ages 5–11)
19 November 2021*	Booster dose authorized for all vaccinated individuals 18 and older
31 December 2021	CAG dissolved, and mission transitioned to the HHS Coordination Operations and Response Element (HCORE)

*The issuance of each EUA and the assumption of the therapeutics mission involved planning and executing the production, delivery, and administration of tens of millions of doses to tens of thousands of individual locations.

Measures of Effectiveness

The most important factor in assessing a military organization is whether it accomplished its assigned mission. The CAG's initial objective was to deliver 300 million vaccine regimens, enough to vaccinate every American. Critical tasks included: (1) contracting at risk for large-scale production of vaccines across

a diversified vaccine portfolio; (2) leading the public-private partnerships necessary for rapid vaccine development; (3) assembling ancillary kits to support vaccine administration; (4) establishing logistics relationships and distributing doses; (5) assuring security of the domestic COVID-19 countermeasure production ecosystem; (6) developing an IT architecture for vaccine allocation, distribution, and administration; and (7) supporting public confidence in the national distribution of COVID-19 vaccines.

In a little more than a year, the CAG accomplished its mission of delivering enough safe and effective vaccines to vaccinate every American. Furthermore, as one expert observed, "Delivering a vaccine in a year or less was perhaps the most challenging task in the pandemic response."[6] The rapid development of multiple safe and effective vaccines was one of the few bright spots in what many would agree had been one of the great tragedies in American history.[7] The CAG's achievements were some of the biggest successes of both the Trump and Biden administrations, one of the only topics on which the two gentlemen agree.[8]

Leveraging DOD and HHS expertise, the CAG and supporting Army acquisition professionals used a variety of DOD acquisition authorities to rapidly bring six vaccine candidates to clinical trials and begin large-scale production. The CAG delivered the first Food and Drug Administration (FDA) authorized vaccine in December 2020, less than seven months after forming. During the following year, the CAG delivered seven years' worth of vaccines to the American people and 150 million excess domestic vaccine doses to 101 nations, a vaccine effort of unprecedented speed and scale.[9]

Metrics
- 1.6 billion doses procured
- 582 million doses delivered domestically; 150 million internationally
- Distribution to more than 91,000 sites
- 86 percent of 18+ population received one shot; 207 million Americans fully vaccinated
- 87 percent of ≥65 population, the most vulnerable demographic, fully vaccinated
- 75 million booster doses administered
- 7 million pediatric (ages 5–11) doses administered between 1 November and December 2021
- Managed allocation and ordering of 3.9 million courses of monoclonal antibodies[10]

At the time that the CAG was dissolved, the entire U.S. resident population had available and equitable access to a COVID-19 vaccine. The COVID-19 domestic countermeasures production ecosystem was more robust and secure; vaccine waste had been minimized; an IT architecture that provided data on

allocations, distribution, and administration was in place; and booster, adolescent, and pediatric vaccine campaigns were ongoing.

Most importantly, the vaccines and therapeutics produced and delivered by the CAG averted an estimated 1.1 million additional COVID-19 deaths and more than 10.3 million additional COVID-19 hospitalizations in the United States as of November 2021.[11] This achievement supported and nested with the recovery outlined in the *National Strategy for COVID-19 Response and Pandemic Preparedness* (January 2021).[12] The CAG's efforts arguably saved more American lives than any other DOD effort in U.S. history.

Observations of Interest
A "Whole-of-America" Approach
No single government or private organization had the capacity, capability, or expertise for this mission. No playbook or standard operating procedures existed to do so during a global health pandemic. The shortest timeline to bring a vaccine to market prior to the COVID-19 pandemic was the mumps vaccine, which took more than four years, and the U.S. government's annual vaccine distribution effort—known as Vaccines for Children—typically distributes 80 million vaccines in a year, in much lower quantities and longer timelines than required for this mission.[13]

As the nucleus of the federal COVID-19 response, the CAG leveraged existing networks, processes, and partnerships and maximized the use of existing pharmaceutical production, distribution, and administration infrastructure. HHS and DOD CAG leaders built the unit to be truly interagency, incorporating a more whole-of-government approach. Key partners included HHS, the Departments of Commerce, Justice, Homeland Security, and State; vaccine and therapeutic producers Sanofi, Moderna, Janssen, Novavax, Pfizer, AstraZeneca, and Merck; and distributors CVS, FedEx, UPS, AmerisourceBergen, and McKesson. CAG leadership ensured unity of effort through interagency collaboration, communication, and integration.

The DOD was uniquely positioned to serve as the integrator at scale in a crisis, with the tools, staffing, and experience necessary to coordinate multiple disparate entities at the national level during crisis. Two organizations within the CAG—the Vaccine and Therapeutics Operations Center (VTOC) and the Vaccine Coordination Center (VCC)—served to synchronize efforts across the enterprise. The VTOC was the center of gravity of the CAG. Staffed and managed by uniformed CAG members along with representatives from every interagency and industry partner, it brought all stakeholders together to ensure real-time information sharing and a common understanding of the operation. The VTOC held a meeting every morning, referred to as the daily stand-up, in which all parties, including every jurisdiction, had the opportunity to speak to each other and to senior leaders within the CAG. In so doing, it integrated, coordinated, and synchronized the movement of domestic vaccines and eventually therapeutics across the country daily.

For its part, the VCC was how the CAG coordinated at the jurisdictional and regional levels. Working closely with the CDC, the VCC ensured that stakeholders at the local level had the information they needed to order and receive vaccine shipments.

Leadership/Personnel

DOD senior leaders, as well as acquisition, logistics, medical, strategic planning, legal, and security personnel, both uniformed and civilian, played a central role in the success of the CAG. Throughout, DOD provided high-quality, technically proficient personnel capable of building and leading teams. Agility was essential. Over time, the original mission evolved to include booster and pediatric campaigns, global donation of vaccine doses, and the distribution of therapeutics. Military officers proved particularly well-suited to operating in a fluid environment.

Leaders designed the CAG to be fast and flat without a formal, linear staffing process. Collaborative decisions were made on the spot based on input from all stakeholders. The CAG overcommunicated and overshared. Leaders instilled a crisis mindset and a sense of urgency. CAG leadership had both decision-making authority and, for more senior-level decisions, could access senior leaders at the touch of a phone.

Leadership also insisted that everything be auditable and pass the test of public scrutiny. CAG personnel provided unredacted copies of all contracts related to COVID-19 vaccines and therapeutics to the Government Accountability Office (GAO) and congressional committees as requested. The CAG also proactively worked with contractors to release minimally redacted copies of contracts to the public while protecting proprietary information and trade secrets to preempt numerous Freedom of Information Act (FOIA) requests. This process allowed most high-value contracts to be publicly posted online, which enhanced transparency and public support and confidence in America's COVID-19 response.[14]

The CAG was committed to accountability and transparency, providing regular updates to Congress, GAO, and the media. The CAG responded to hundreds of requests for information from various Senate, House, and state offices. CAG pursued an aggressive campaign participating in bicameral and bipartisan information sharing activities, working together with the White House legislative and external engagements team, and participating in more than 100 state and regional touchpoint sessions providing real-time sensitive information. In addition to GAO, congressional, and media engagements, CAG leaders supported and participated in more than 50 external affairs engagements with civic, academic, business, and industry organizations.[15] These engagements not only represented a commitment to transparency but directly led to improved vaccine confidence in the American people.

Vaccine Development

The Vaccine Development Team, led by a DOD civilian and augmented by five DOD program managers, rapidly and innovatively selected vaccine candidates for federal support based on four established criteria determined in coordination with the scientific and pharmaceutical community. The team researched, funded, and supported candidates within four vaccine-platform technologies expected to most likely yield a safe and effective COVID-19 vaccine: the mRNA platform, the replication-defective live-vector platform, the recombinant-subunit-adjuvanted protein platform, and the attenuated replicating live-vector platform. This approach mitigated the risk of mission failure and yielded the largest number of effective doses possible.

Once federally supported candidates were identified, CAG coordinated funding and led the most aggressive clinical trials in history, governed by the highest ethical standards for science and safety. CAG leveraged the Logistics Civil Augmentation Program contract to support clinical trial site setup at 61 locations, preparing for all phases of trials simultaneously, which allowed companies to move seamlessly through the phases with little or no additional waiting time. The operation also harmonized and increased the size of Phase 3 clinical trials to more than 30,000 people each to speed efficacy. Overall, across five Phase 3 trials, more than 160,000 volunteers were enrolled, yielding immense amounts of data to prove safety and efficacy across diverse populations.[16]

CAG leaders and team members maintained daily contact and coordination with six federally supported vaccine candidates, closely monitoring progress and enabling rapid issue escalation and resolution. OWS team members also coordinated and collaborated across the government with the FDA, National Institutes of Health (NIH), National Institute of Allergy and Infectious Disease (NIAID), Centers for Disease Control and Prevention (CDC), and multiple professional scientific and medical associations. In less than nine months, the team's efforts resulted in three vaccines receiving FDA EUA, two candidates nearing completion of Phase 3 clinical trials, and the final candidate progressing through Phase 2/3 trials. The idea of having a single vaccine developed by the end of 2020 was initially viewed with great skepticism. As of 31 December 2021, the CAG had generated two vaccines approved for emergency use by the FDA and a third with full approval. The three remaining vaccine candidates continued development for potential use as boosters, vaccines for children, and international donations.

Additionally, DOD logistics and engineering capabilities were employed to scale up the clinical trials' size and accelerate the process. The CAG leveraged the U.S. Army Corps of Engineers (USACE) for support on construction activities, designed to increase the industry base expansion activities, valued at $1.2 billion, throughout the COVID-19 vaccine supply chain. USACE's support included a wide range of services such as working with the local government to expedite permits, providing recommendations on condensing manufacturing's construction schedule, and directly providing project management advice with

our industry partners. This effort reduced multiple construction schedules by months while allowing CAG to remain on schedule to meet its vaccine production goals. USACE supported the manufacturing expansion efforts for six technology investment agreements by providing expert engineering, scheduling, and program management advice. In addition, USACE provides an additional layer of governmental oversight on other construction efforts.

Therapeutics Development

The CAG's Therapeutics Team pursued a two-pronged strategy, focusing on therapeutic candidates to attack the virus and manage complications. The CAG therapeutics development team rapidly advanced with DOD leaders who provided structure, aligned the team's goals, and instituted a battle rhythm for progression and distribution of COVID-19 treatments.

The therapeutics team streamlined efforts within 12 manufacturers and multiple government agency stakeholders to assess more than 50 potential drug compounds. To date, these public-private partnerships resulted in three EUAs for monoclonal antibody treatments, which have demonstrated a decrease in the risk of hospitalization by 70 percent in high-risk patients. In concert with these intra-agency teams, the CAG has delivered more than 2.52 million monoclonal antibodies, resulting in more than 1.32 million patient courses used during the past six months. In addition to partnering with pharmaceutical manufacturers, DOD leaders successfully accelerated COVID-19 convalescent plasma collection and distribution efforts to treat hospitalized patients. The CAG distributed nearly 600,000 units, reducing the severity and shortening the length of the COVID-19 illness in more than 400,000 hospitalized patients throughout the country, preventing an estimated 20,000 intensive care unit (ICU) admissions and cost avoidance of up to $2 billion in nationwide acute care. Based on results from ongoing clinical trials, 12 additional candidates, including small molecule antivirals, immune modulators, and additional monoclonal antibodies, have demonstrated potential for EUA submissions as early as the first quarter of fiscal year (FY) 2021. Subsequently, CAG team members also led outreach efforts with the White House Health Equities Initiative by incorporating capabilities for 63 monoclonal antibody infusion sites with 19,853 therapeutic patient courses delivered to underserved and underprivileged communities.[17]

Therapeutics efforts resulted in contracting actions valued at more than $10 billion, covering product development, research, and manufacturing costs resulting in more than 3.3 million courses of therapeutics secured by the U.S. government on EUA for distribution to the American public at no cost.[18]

Supply Chain Management, Production, and Distribution

DOD personnel in the CAG provided leadership and coordination throughout the COVID-19 medical counter measures (MCM) supply chain from development to final distribution. This logistics expertise allowed for (1) proactively identifying and solving production bottlenecks and delays, (2) the pivoting of

existing, proven technologies to expedite the availability of MCMs, (3) the establishment and scaling of domestic-based manufacturing capabilities, (4) the minimization of risk through advanced purchase agreements, and (5) the creation of a flexible distribution model that is scalable for future needs. Supply chain experts and analysis were used to determine when to use the Defense Production Act (DPA) or other measures to relieve anticipated shortages and bottlenecks without adversely impacting other areas.

The supply chain management team provided oversight of vaccine manufacturing and enforced the DPA initiative for the critical supply chains across the U.S. pharmaceutical industrial base. Six experienced military logisticians were strategically embedded at key points within the vaccine manufacturing and supply chains to expedite key supplies and to enable rapid identification and resolution of supply chain challenges before they impacted the mission. Strategic placement of these military officers was critical to ensuring an unprecedented level of coordination of common supply chain resources across more than 90 sources of supply for six vaccine and three therapeutic manufacturers, ensuring all demands were met.

To protect U.S. interests and enable rapid development and manufacture of vaccines, diagnostics, and therapeutics, the CAG initiated an effort to apply DPA priority ratings to key contracts and secure the supply chain. Initial efforts focused on enabling manufacturing capacity expansion efforts using DPA authorities. The CAG coordinated the priorities and allocations authority of the DPA through the Department of Commerce. The CAG-led manufacturing efforts resulted in the successful and rapid development of a U.S.-based network that can produce more than 1 billion doses of vaccine per year once a steady state is achieved, a significant increase to national capacity.

Additionally, the CAG initiated a planning cell with CDC and the Strategic National Stockpile (SNS) to design, assemble, and supply ancillary kits that contained all supplies necessary to administer vaccines, funded by the U.S. government. As part of that effort, the team identified the need to gain additional access to needles and syringes to administer primary series, booster, and pediatric vaccine doses. In partnership with SNS, the CAG awarded contracts to procure and deliver critical components such as alcohol swabs, face masks, and vaccination cards to support 1.15 billion vaccinations and ancillaries. Contracts were also executed with distribution partners enabling the assembly and distribution of the kits to thousands of administration sites worldwide. More than 6 million kits were built and distributed with zero failed deliveries.[19]

One best practice was the "personnel-in-plant" (PIPs) initiative. PIPs were military officers embedded with industry partners at their manufacturing locations across the country. They worked with manufacturing leadership to manage progress and work through problems when they occurred. PIPs supported all equipment deliveries to all supply nodes throughout the supply chain. They maintained communication with all necessary raw materials, consumables, and equipment suppliers. Additionally, they coordinated, monitored, and partici-

Figure 1. Key tenets of distribution
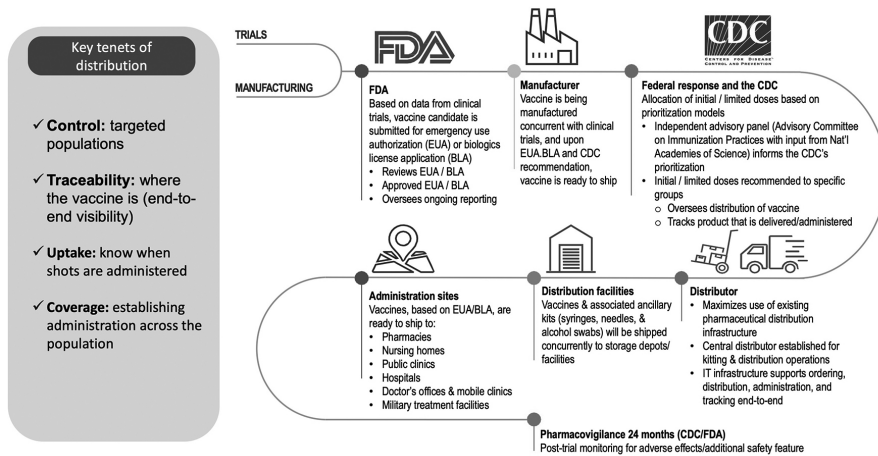
Source: CAG Group.

pated in manufacturing productivity studies. PIPs analyzed the impact on delayed supplies and equipment and provided recommended courses of action.

Ultimately, the development and protection of supply chains is a top national security concern. DOD could leverage CAG lessons learned for the Defense Production Act and supply chain management to improve military readiness. From a logistics perspective, the techniques outlined here could be of great importance in force modernization and in increasing wartime production.

Information Technology and Data Analytics

Accurate data was foundational to the success of the CAG. No single federal data system existed to manage and track vaccine distribution across 64 jurisdictions. OWS led information technology collaboration with five U.S. government agencies, academia, and more than 50 industry partners to construct a comprehensive architecture of IT systems capable of supporting the distribution and administration of COVID-19 vaccines. The efforts resulted in an unprecedented IT system architecture comprised of more than 110 system-to-system interconnections or data exchange mechanisms, made operational in under seven months. The IT architecture served as the backbone of OWS's nationwide operations, hosting the authoritative databases, processing orders for millions of doses per day, and tracking shipping and inventory information from the manufacturers to the point of vaccine administration.

OWS also led the nation through the most unique and challenging component of the IT architecture—the data platform systems, data exchange arrangements, and data reporting specification developed to support the receipt, safe storage, visualization, and analytics of critical vaccine administration data. Never in U.S. history had data systems and agreements been established to

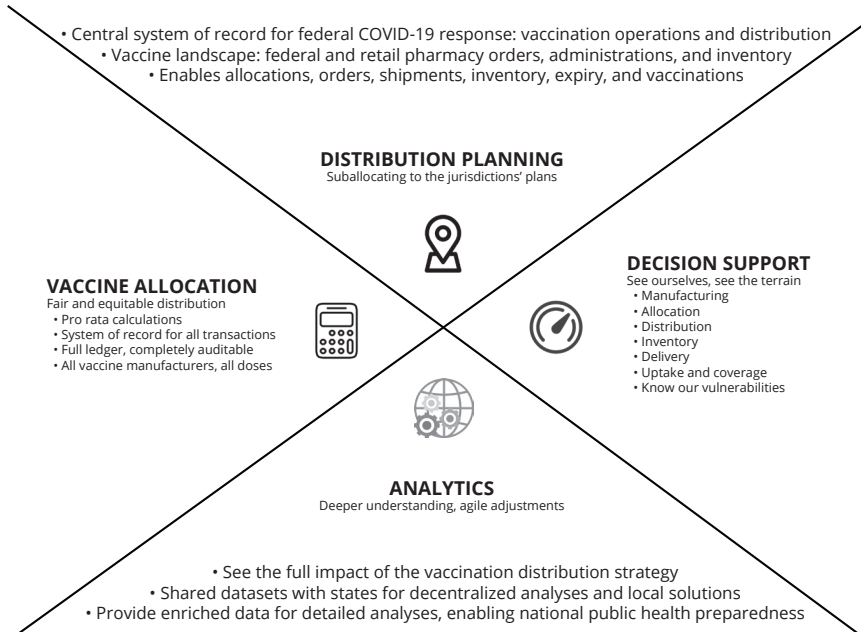**Figure 2.** COVID-19 response and vaccine distribution process
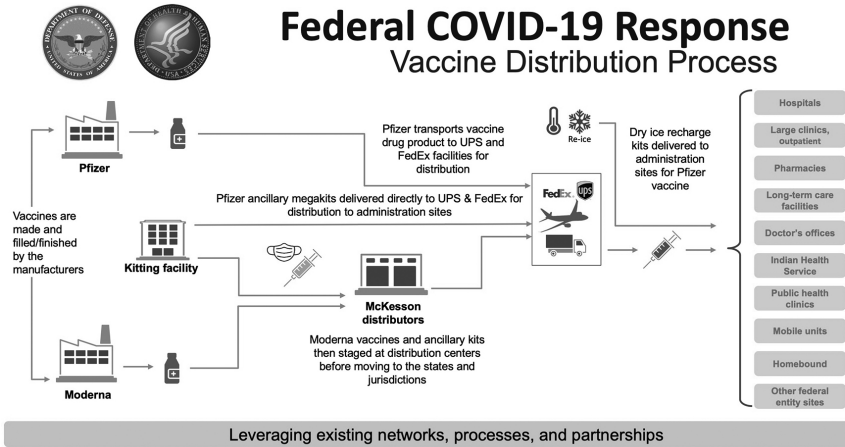
Source: CAG Group.

receive daily vaccination administration data from providers across the nation. By mid-February 2021, more than 90 awardees were reporting a daily average of 1.5 million vaccination records to the federal data systems, with vaccination records averaging less than 60 hours from administration to reporting, all while safeguarding personal health information through encryption and anonymizing data links.

Recognizing the need for a single system to integrate and synthesize information from many disparate lines of effort, the CAG leveraged DOD and HHS IT capabilities to build Tiberius, the national IT architecture that ensured responsive distribution of all COVID-19 medical countermeasures. Tiberius is an end-to-end data management, visualization, and analytical platform that facilitates a common operating picture across clinical trials, manufacturing, kitting, allocations, jurisdictional microplanning, distribution, inventory, and vaccine administration. DOD and HHS analysts used Tiberius to integrate, synthesize, and analyze large amounts of data supporting senior-leader decision making in rapidly evolving situations. The system employed scientific and mathematical problem-solving methods to generate and evaluate alternatives over the range of the enterprise. Neither Tiberius nor a similar capability existed in May 2020. The data analytics team used Tiberius to facilitate shared understanding and a common operating picture; it enabled the CAG and all entities involved in the process to "see ourselves" in the words of Army general Gustave F. Perna, the chief operating officer from May 2020 through June 2021.[20]

Cutting-edge data analytics drove planning and operations. Of note, agile product development was the key to the success of the data analytics effort. Agile practices included requirements discovery and solutions improvement through the collaborative effort of cross-functional teams of developers and key stakeholders; adaptive planning, evolutionary development, early delivery, and

Figure 3. Analytics and Tiberius scope and overview

• Central system of record for federal COVID-19 response: vaccination operations and distribution
• Vaccine landscape: federal and retail pharmacy orders, administrations, and inventory
• Enables allocations, orders, shipments, inventory, expiry, and vaccinations

DISTRIBUTION PLANNING
Suballocating to the jurisdictions' plans

DECISION SUPPORT
See ourselves, see the terrain
• Manufacturing
• Allocation
• Distribution
• Inventory
• Delivery
• Uptake and coverage
• Know our vulnerabilities

VACCINE ALLOCATION
Fair and equitable distribution
• Pro rata calculations
• System of record for all transactions
• Full ledger, completely auditable
• All vaccine manufacturers, all doses

ANALYTICS
Deeper understanding, agile adjustments

• See the full impact of the vaccination distribution strategy
• Shared datasets with states for decentralized analyses and local solutions
• Provide enriched data for detailed analyses, enabling national public health preparedness

Source: CAG Group.

continual improvement; and flexible responses to changes in requirements, capacity, and understanding of the problems to be solved. Leaders needed accurate and timely information of the entire supply, production, and distribution network to make sound decisions.

Security and Assurance

Open-source research has exposed Chinese and Russian targeting of biotechnology research.[21] Leadership was also concerned about criminal activities targeting the vaccine effort. DOD personnel and authorities were critical in ensuring the cybersecurity and industrial security of the operation. The CAG Security and Assurance Directorate (S&A) actively synchronized multiple interagency partners, including the Federal Bureau of Investigation (FBI), U.S. Marshal Service, Cybersecurity and Infrastructure Security Agency from the Department of Homeland Security, Defense Counterintelligence and Security Agency, as well as strategic elements of the intelligence community to secure the integrity of the federal COVID-19 response mission and key aspects of the U.S. bioeconomy.

Led by an Army brigadier general, the S&A team's dynamic and persistent efforts effectively integrated several exquisite tools and capabilities of the interagency and intelligence community, ensuring protection against state and nonstate actor attempts aimed at stealing or disrupting CAG procedures. For example, the S&A team coordinated the efforts of U.S. Marshals charged with executing more than 400 armed escort security missions, traversing all U.S.

states and jurisdictions with zero losses or disruption to vaccine distribution. S&A expanded the vaccine transportation security mission beyond domestic distribution to include protection of White House prioritized international donations. U.S. Marshals escorted more than 114 million doses of lifesaving vaccine for more than 85 recipient nations in support of international donations.[22] The S&A team also developed and implemented a unique effort to safeguard all EUA data via armed federal agents physically escorting encrypted hard drives in lieu of the previous standard electronic submission. This novel methodology ensured the uncompromised integrity and timely delivery of manufacturer documents to the FDA without risk of data interception, theft, or corruption.

DOD provided technical assistance and advice to all partners in biosecurity, and the CAG made a great deal of progress securing the U.S. bioeconomy. Defense Counterintelligence and Security Agency, industrial security representatives (ISRs) continued expanding S&A's teach-coach-mentor partnership with industry. Since 15 May 2021, ISRs completed 20 site visits throughout the United States, affecting lasting change in the security culture of critical partners. ISR site visits emphasized supply chain risk management: physical, operational, informational, personnel, and cyber security. As required, ISRs integrated interagency partners and counterintelligence assets into site visits to offer holistic security training and support to a critical segment of the U.S. bioeconomy.[23] At present, DOD may be the only entity with capabilities and authorities sufficient to protect the U.S. bioeconomy and protect critical intellectual property and infrastructure from foreign threats. While the bioeconomy and supply chains are primarily nongovernmental, there are significant national security implications.

Interagency Assisted Acquisition and Dedicated Legal Support

The CAG coordinated the award and administration of contracts and agreements worth more than $46 billion for vaccines, therapeutics, diagnostics, ancillary enablers (needles, syringes, fill/finish, swabs, etc.), distribution of countermeasures, program support, and other activities (including industrial expansion) to support numerous aspects of the aforementioned areas.[24] The contracting offices worked closely with the interagency, leveraging HHS-allocated Coronavirus Aid, Relief, and Economic Security (CARES) Act funds to award contracting actions.[25] CAG personnel ensured that the American taxpayer received the best value and most effective use of their funds by ensuring strict compliance with federal acquisition authorities and that rigorous contract negotiations were conducted by a premier team of DOD professionals. This strict compliance led to such faultless procurements that not a single GAO protest was filed against a CAG contract. Moreover, this strict compliance did not detract from the speed of the acquisition work, as these actions were awarded in a fraction of the time which would have typically been allotted for traditional acquisitions.

The DOD acquisition workforce, specifically the Joint Program Exec-

utive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND) and Army Contracting Command (ACC), executed the contracts for the vaccines developed by the CAG. The DOD contracting offices exercised historic speed while maintaining quality and thorough oversight. Each contract withstood scrutiny from media, Congress, and public interest groups. The OWS team within the JPEO-CBRND received the 2021 Defense Acquisition Workforce Packard Award for the importance, quality, and volume of the acquisition work performed in support of the CAG mission and innovation in acquisition strategy.

The acquisitions team leveraged two innovative acquisition approaches. The first, other transactional authorities (OTAs), are flexible agreements used in a range of research and prototype activities. OTAs allow DOD the flexibility to adopt and incorporate business practices that reflect commercial industry standards and best practices into its award instruments. The second, technology investment agreements (TIAs) (32 CFR Part 17), enabled DOD to partner with nontraditional suppliers to invest in mission-relevant research and development projects, offer greater contracting flexibilities relative to the federal acquisition regulation (e.g., intellectual property rights and accounting), and allowed DOD a more involved program management role.

Another reason the acquisition process moved so expeditiously was because legal counsel was proactively embedded throughout the process, identifying and mitigating legal hurdles and thereby significantly reducing the time needed to execute contracting actions. CAG leadership identified senior counsel and a dedicated legal cell as a critical enabler of success. Based on the high dollar value of CAG contracts, unprecedented engagement with industry, interagency collaboration, flat and fast decision making, use of novel or seldom-used authorities, congressional oversight, and media and public interest, ubiquitous legal support was essential to proactively identifying and mitigating various risks for leadership.

Early staffing of CAG attorneys allowed the CAG legal team to locate and shape governing authorities. The CAG assigned dedicated legal counsel to key personnel, such as the director of S&A, to attend all meetings with industry, oversee acquisition efforts, ensure protection of procurement sensitive or proprietary information and ensure various agencies collaborating on security matters understood and did not exceed their unique agency intelligence authorities. Additionally, CAG legal counsel closely and proactively coordinated legal advice with DOD and HHS Offices of the General Counsel and other agencies as required to ensure consistent legal counsel was provided to interagency clients. Similarly, the senior counsel established direct relationships with industry general counsel to resolve disputes or misunderstandings quickly.

CAG legal counsel also provided two other important functions. First, they worked closely with CAG, OSD, and HHS legislative liaison and public affairs staff to ensure myriad responses to Congress and media were legally unobjectionable, accurate, and consistent with various laws and regulations. Second,

the senior counsel served as the CAG ethics counselor to help create and manage a comprehensive ethics program including financial disclosure, training, documentation, and close monitoring of policies and staff actions to avoid unlawful conflicts of interest. The importance of embedded legal counsel cannot be overstated. Having legal counsel readily available to all CAG members dramatically reduces the time associated with the legal review of contracting and other key functions.

Strategic Communications and the Information Environment

Although not a DOD responsibility in this case, the CAG and the federal COVID-19 pandemic response in general highlighted the importance of strategic communications and the degree to which the information environment impacts everything DOD does. Early in the operation, public relations, strategic communications, and information operations personnel were not deemed critical and were not assigned to the team. However, it became apparent that such personnel were required to maintain situational awareness about the media landscape, handle public announcements impacting CAG activities, and to maintain confidence in the CAG's ability to deliver safe and effective vaccines and therapeutics to the American public.

In General Perna's view, "Our communication strategy was ineffective, and it was poorly executed strategically, operationally and tactically."[26] For example, the CAG did not expect that vaccine roll out during a pandemic would be a political issue—the planning assumption was that public health was apolitical. Also, the speed of the vaccine roll out, rather than being viewed as an achievement to be celebrated, contributed to vaccine hesitance in some cases. In both examples, the CAG's ability to accomplish its objectives were negatively impacted by its inability to foresee and mitigate potential risks in the information space. The CAG would have benefited from a more concerted effort to understand the information environment.

Planning Capabilities and Transition

DOD's deliberate and crisis planning approaches were essential to achieving desired end states. COVID-19 threw curveballs that required rapidly shifting from one mission to the next. The planning team applied multifunctional expertise—medical, logistics, intel, legal, etc.—to identify potential risks and resource constraints due to simultaneous resource-intensive operations; help leaders make informed decisions; understand problems and develop solutions; task organize the force and prioritize efforts; direct, coordinate, and synchronize action; and anticipate events and adapt to changing circumstances. Throughout, DOD planning processes allowed the CAG to remain mission focused. Ultimately, the planning culminated in the historical interdepartmental transfer of authority from DOD to HHS with H-Core postured to assume the mission.[27]

DOD planners initiated a series of battle rhythm events, reviews, and exercises to rehearse distribution plans and allow the various government and

industry partners involved in the effort to define roles and responsibilities, synchronize movements, identify gaps, and plan for potential challenges at every stage of the distribution process. In total, five vaccine distribution and administration tabletop exercises were planned, developed, and executed with representation from 64 jurisdictions, 24 U.S. government agencies, and 13 industry partners that enabled OWS to identify, monitor, and direct 84 distinct actions for each vaccine candidate from the moment of EUA submission to vaccines arriving at the point of administration.[28] Of military officers, General Perna noted,

> We know how to put a plan together. . . . We use the military decision-making process—something on which we're trained as young officers. We come up with courses of action and we assess risk against them. We decide and we move out, and when they don't work out, we adjust. It's probably the greatest attribute we have because we have never done this in the country before.[29]

Another critical planning effort was the transition effort between CAG and HHS. Per the MOU, the desired end state was that HHS and its various entities assume the entirety of CAG's mission by 31 December 2021. Plans developed and led to a multiphased approach to achieve all five culmination criteria and four transition criteria per the MOU and transfer each CAG workstream to HHS. Plans also drove the contracting effort to support a CAG-like capability once DOD had departed. Leveraging JPEO-CBRND and DOD's assisted acquisition, this contract filled necessary gaps in current HHS capability within workstreams, especially supply, production, and distribution.

As part of the MOU requirement, plans worked closely with the chief of staff's team to develop a records distribution plan to record and compile lessons learned efficiently. These records were made available for HHS counterparts and other governmental agencies as they continued with the COVID-19 pandemic response mission and prepare for future pandemics.

The transition of the CAG's responsibilities from DOD to HHS during an ongoing national emergency was unprecedented. There were no established processes for transferring a critical mission from one federal agency to another. Best practices included establishing an agreed-on end state that everyone can drive toward. The end state can, and should, be revisited and revised as needed. Also, interdepartmental transitions require longer lead times to account for the different processes of each department. The CAG established aggressive target dates and timelines but was prepared to adjust if necessary. Leaders also emphasized the establishment and maintenance of a common understanding. In this case, not only HHS and DOD needed to appreciate the transition process but also the White House and Congress. Ultimately, for the transition to occur, the White House had to be convinced that it could take place with no degradation to the mission.

All parties recognized the complexity of an interdepartmental transition and that unanticipated obstacles would arise. Senior leaders remained calm and

built partnerships to work through emerging challenges. At multiple points in the process, unforeseen events such as the rapid spread of the Delta variant threatened to delay the transition. Leadership, recognizing that the risk to transition was more psychological than anything else, instilled confidence by trusting the process and continuing to execute the plan. They resisted the tendency to allow anxieties about the emergency of the day to derail progress toward the desired end state.

Conclusion

On 7 December 2021, the HHS and DOD deputy secretaries determined that the CAG had accomplished all key transition tasks. The CAG was dissolved effective 31 December 2021, per its MOU. HCORE assumed responsibility for all functions performed by the CAG. As of 1 January 2021, HHS/H-CORE is the lead agent for current pandemic response and future pandemic preparedness.[30]

In a recent report, GAO concluded that a better understanding of the CAG experience would go far in positioning H-CORE for success in the future.[31] For their part, General Perna and other members of the CAG's leadership team recommended a comprehensive bipartisan review.[32] Additional research would provide a more complete understanding of areas where the CAG was successful and opportunities for improvement. The identification of best practices would inform ongoing and future vaccine work specifically and the federal government's crisis response capabilities more broadly. Research should also be done on the perspectives of key external stakeholders, such as industry partners. In April 2020, DOD was the only federal entity with the planning, logistics, and acquisitions capabilities needed to execute the CAG mission. This need not be the case in the next pandemic.

The COVID-19 pandemic represents one potential future threat landscape that the U.S. government and DOD should prepare for. It illustrates the intersection of a transnational threat leading to a national emergency, with bio- and cybersecurity and great power competition. In the current international environment defined by competition among nation-states, all players will seek to take advantage of any opportunity, including natural disasters and pandemics. The nature of the next crisis will be different; however, some of the ways the CAG solved problems in a rapidly evolving national emergency will apply.

Endnotes

1. Scott Gottlieb, *Uncontrolled Spread: Why COVID-19 Crushed Us and How We Can Defeat the Next Pandemic* (New York: HaperCollins, 2021), 10.
2. "COVID Data Tracker," Centers for Disease Control and Prevention, accessed 3 March 2022.
3. For consistency and readability, the acronym CAG will be used for the remainder of the article to cover events that occurred under both OWS and CAG. It was the same organization and mission, just under a different name. CAG was chosen because it was the name of the organization when it was dissolved.

4.   Yasmeen Abutaleb and Damian Paletta *Nightmare Scenario: Inside the Trump Admin- istration's Response to the Pandemic that Changed History* (New York: HarperCollins 2021), 425.

5.   Interview with Dr. Matthew Hepburn, 8 October 2021, notes in author's possession.

6.   Abutaleb and Paletta, *Nightmare Scenario*, 379.

7.   Abutaleb and Paletta, *Nightmare Scenario*, 425.

8.   Maegan Vazquez and Nikki Carvajal, "Biden Offers Rare Praise of Trump during Covid Speech," CNN, 22 December 2021.

9.   Statistics compiled in *Countermeasures Acceleration Group Final Report*, 28 January 2022. Copy in authors' possession. Document not currently available to the general public.

10.   Metrics as of 31 December 2021, "CDC Covid Data Tracker." See also *Testimony before the Senate Committee on Health, Education, Labor, and Pensions, Hearing Titled Addressing New Variants: A Federal Perspective on the COVID-19 Response*, 117th Cong. (11 January 2022) (statement of Dawn O'Connell, assistant secretary for preparedness and response), hereafter O'Connell statement.

11.   Eric C. Schneider et al., *The U.S. COVID-19 Vaccination Program at One Year: How Many Deaths and Hospitalizations Were Averted?*, issue brief (New York: Common- wealth Fund, 2021), https://doi.org/10.26099/3542-5n54.

12.   President Joseph R. Biden Jr., *National Strategy for COVID-19 Response and Pandemic Preparedness* (Washington, DC: White House, 2021).

13.   "Vaccines for Children Program (VFC)," Centers for Disease Control and Prevention, 18 February 2016.

14.   "FOIA Library/Electronic Reading Room," HHS.gov, accessed 15 March 2022.

15.   For representative examples, see "News Conference on Vaccine Development and Dis- tribution," C-SPAN, 30 December 2020; and "Senate Hearing on Defense Depart- ment Response to Coronavirus Pandemic," C-SPAN, 25 February 2021.

16.   See "CAG Historical Project" folder in CAG Lessons Learned File. Folder in authors' possession. File not currently available to the general public.

17.   Figures found in "CAG Historical Project" folder and "Therapeutics" folder in CAG Lessons Learned File. Folders in authors' possession. File not currently available to the general public.

18.   Figures found in "CAG Historical Project" folder and "Therapeutics" folder in CAG Lessons Learned File. Folders in authors' possession. File not currently available to the general public.

19.   See "CAG Historical Project" folder in CAG Lessons Learned File. Folder in authors' possession. File not currently available to the general public.

20.   Jen Judson, "What the Army Can Learn from Operation Warp Speed—An Interview with General Gustave Perna," *Defense News*, 13 March 2022.

21.   See Ellen Nakashima, "U.S. Officials Caution Companies about Risks of Working with Chinese Entities in A.I. and Biotech," *Washington Post*, 22 October 2021; and Conor Finnegan and Luke Barr, "U.S. Accuses Chinese Tech Firms, Research Institutes of Weaponizing Biotechnology, Creating 'Brain-Control Weaponry'," ABC News, 16 December 2021.

22.   See "CAG Historical Project" folder and "Security and Assurance" folder in CAG Les- sons Learned File. Folders in authors' possession. File not currently available to the general public.

23.   See "Industrial Security," Defense Counterintelligence and Security Agency, accessed 15 March 2022. For an example of products developed, see "Operation Warp Speed and Beyond Toolkit: An Industry Partners Toolkit for the Pharmaceutical and Biotech- nology Sectors," Center for Development of Security Excellence, accessed 15 March 2022.

24.   See "CAG Historical Project" folder and "Contracting" folder in CAG Lessons Learned File. Folders in authors' possession. File not currently available to the general public.

25.   Coronavirus Aid, Relief, and Economic Security Act, Pub. L. No. 116–136 (2021).

26.   Judson, "What the Army Can Learn from Operation Warp Speed."

27. Lawrence Wright, *Plague Year: America in the Time of Covid* (New York: Alfred A. Knopf, 2021), 263–65.
28. See "CAG Historical Project" folder and "Plans and Transition" folder in CAG Lessons Learned File. Folders in authors' possession. File not currently available to the general public.
29. Judson, "What the Army Can Learn from Operation Warp Speed."
30. O'Connell statement.
31. *COIVD-19: HHS and DOD Transitioned Vaccine Responsibilities to HHS, but Need to Address Outstanding Issues* (Washington, DC: Government Accountability Office, 2022).
32. Judson, "What the Army Can Learn from Operation Warp Speed."

The Psychological Impacts of the COVID-19 Pandemic on the U.S. Military

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Abstract: The U.S. government and Department of Defense (DOD) have plans to counter a pandemic and return the country to normal while reducing the impacts of the disease. These plans address psychological health, but only in a limited manner. The U.S. government and DOD's response to the COVID-19 pandemic has been primarily focused on containing the virus and reducing the number of deaths and damage to the economy, with very limited attention paid to the mental health impacts in both the population and military. Historical cases suggest that the psychological impacts can be wide-ranging and enduring if not treated properly and the country does not recover from the pandemic in a deliberate fashion. While some emerging research could suggest this for the U.S. population and military, researchers have not conducted specific studies into this particular field. Therefore, the U.S. military's mental health could be degraded by the COVID-19 pandemic and mitigation measures and may be degraded for a significant period of time, reducing its readiness and ability to aid in the government's response to the pandemic.

Keywords: pandemic, mental health, psychological health, COVID-19, SARS-CoV-2

Introduction

The COVID-19 pandemic has had an enormous impact on the world in every aspect.[1] The most notable effects are the physical health of the global population and the international economy. But these are not the

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only areas in which the pandemic is wreaking havoc. As many people are told to remain home and quarantine or isolate themselves to prevent or at least slow the spread of the virus, they are also incurring psychological impacts that are not receiving the same level of attention as the physical ones. This prioritization of physiological health and reducing the spread of the virus over psychological impacts is especially true of the U.S. military, which has continued its global movement of forces while instituting various mitigation measures throughout the pandemic.

The U.S. military must also prioritize its resources. Being one of many components of the government, the military is subject to the rules, regulations, and policies of the president and their administration. While this provides a vast array of resources for it to draw from, it also subjects the military to the many bureaucratic rules and procedures that characterize so much of the government today. One of the primary responsibilities of the military is to take care of its servicemembers: the children of American citizens. The great resources provided by the government ensure the military can do this. However, the bureaucracy of the government also creates challenges in the creation and implementation of policies and regulations, which are needed to use those resources. In an emergent situation such as a global pandemic, the military may not have the ability to simultaneously overcome the challenges associated with creating and implementing new policies and procedures while also maintaining its normal operational tempo and readiness to respond to crises. When COVID-19 became a consideration in everything the military did, accommodations for the pandemic took priority over other things, such as planned deployment and redeployment timelines and training schedules, which then suffered because of those adjustments.

U.S. military servicemembers are trained from day one to handle stress. The rationale is straightforward: combat is stressful and the military must be able to function effectively in combat; therefore, servicemembers must be trained to function effectively in stressful situations. This rationale is not only a basic tenet of being in the military, but it is also part of the challenge and one of the draws for young Americans—to be able to show they accepted and overcame the challenge of completing boot camp and becoming a member of the U.S. military. However, the resilience against stress developed during boot camp is not infinite. A common refrain heard throughout the Marine Corps when a less than ideal situation arises is that "they're Marines—they can handle it." While this is true and rarely will a Marine admit they are being overworked, they are not superhuman and do not have an unlimited capacity for handling stress. Fortunately, Marine Corps leadership acknowledges this and has equipped units and commanders with the tools to ensure their personnel and their families can endure challenging times continue to contribute to the mission throughout those times, and be ready for future assignments. Even though the government, the DOD, and the Marine Corps have plans and resources for handling a situation like this, they were inadequately prepared, and the plans were not implemented

to the best extent. As a result, the military's mental health could be degraded by the COVID-19 pandemic and mitigation measures and may be degraded for a significant period of time.

This degradation could have an impact on several different facets of the military, but in particular its readiness to execute its assigned missions. Medical readiness is an integral part of the military's readiness to deploy, and with both a global pandemic and a possible mental health crisis to contend with, this readiness could be significantly diminished. This is especially true during a global pandemic when the military's vast resources can be used to assist the government in its response, in which this degradation would be particularly detrimental. The impacts on the psychological health of the U.S. military could extend far beyond the servicemembers themselves and manifest in units that are not prepared to execute their missions in support of the government and in the defense of the nation.

This article seeks to examine how the COVID-19 pandemic and the measures implemented to mitigate its spread have impacted the mental health of the U.S. military. It will explore the plans and policies of the government at several echelons to determine if and how mental health was accounted for and if the government's response carried out those plans and policies as designed. It will then relate those findings to pandemic psychiatry as studied and described by experts. Historical examples will be used to determine if any parallels can be drawn and estimates made as to what COVID-19's psychological impact will be. The emerging research on COVID-19 will then be examined as well as how it could translate to the U.S. military. Finally, recommendations will be offered regarding how to better incorporate measures for maintaining the mental health of the military during a pandemic.

U.S. Government Guidance for Pandemic Response

The government has a comprehensive guide for responding to an influenza pandemic that was published by the Homeland Security Council in 2006, with the *National Strategy for Pandemic Influenza*.[2] Its nine chapters and three appendices describe a wide range of topics necessary for the prevention and control of a pandemic. While its focus is on what the U.S. government will do, it also outlines the actions that local governments will have to take in their own communities. It even states that "the center of gravity of the pandemic response, however, will be in communities."[3] Even though it acknowledges the primacy of local governments in fighting a pandemic, it covers the support the government will provide to the states, tribal nations, and communities that make up the United States.

This strategy addresses some psychological and psychosocial concerns, but it largely focuses on how they will impact the overall response to the pandemic, as opposed to individual concerns.[4] The strategy's guidance for planning for additional mental health care providers is tied into its guidance for all additional health care personnel, which is to use the Medical Reserve Corps and the

Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) programs to ensure local governments are able to mobilize the personnel they need during a pandemic.[5] This shows its limited focus on psychological concerns and that they are lumped in with the other additional health care personnel who will be needed. It also provides limited guidance for organizations, businesses, schools, faith-based and community organizations, and families. However, this guidance is simply to ensure that psychological and psychosocial concerns are planned for as part of the overall response and does not provide specific instructions on what to plan for.

The strategy also affirms the need for quarantine and isolation as measures to restrict the spread of a pandemic.[6] It discusses the potential for quarantines to be imposed, especially for travelers, and that coordination will be required at the international level.[7] Further, it emphasizes the efficacy of quarantine in slowing the spread of a pandemic and that it will be part of a larger public health response to minimize the effects of the pandemic.[8] However, it does not address any of the potential ramifications of implementing quarantines, or any considerations for how to handle quarantines or those possible ramifications. If those who implement quarantines are not familiar with any of those considerations, this guidance would not be enough to ensure they are implemented properly.

As one of the major departments of the government, the DOD has its own pandemic response plan for pandemic influenza that was published in September 2006. It has three primary goals: to provide planning guidance on how the DOD will prepare and respond to the pandemic and its internal effects on the department; how the DOD will support the overall response by the government; and how it will address other security concerns, such as humanitarian relief operations that may come about as a result of the pandemic.[9] In those three realms, it further identifies 13 priority action areas on which it will focus its efforts. Already at the DOD level, the department is acknowledging the vast scope of the response and what it needs to do to be fully prepared for a pandemic. Because the DOD acknowledges that it might not be able to fully complete all of the tasks set forth in the *National Strategy for Pandemic Influenza*, it has set internal priorities for what it will plan for. The highest priority is protecting the health and safety of personnel and resources; then determining and maintaining essential functions in a pandemic, supporting federal, state, and local governments in their response; and finally effective communications. In these priorities, it recognizes quarantine as a measure that will be used to help contain and mitigate the spread of the pandemic. The plan first refers to quarantine as something the DOD will have to help civil authorities enforce as part of the broader national response. It also mentions that military commanders may need to implement quarantines and isolation strategies to contain and limit the spread of a pandemic on base.

The DOD plan only refers to mental health twice, which reveals that mental health is not a serious consideration in the plan. Therefore, it immediately

goes to the bottom of the list of priorities and will not receive an adequate amount of attention, funding, or research. This leads directly to the type of situation the DOD is in now, with little to no data on how a pandemic will impact the mental health of the military. For the tasks to its various subordinate elements, the DOD tasks the military departments and agencies to ensure the "installation commanders plan for mental health and chaplain support for emergency workers."[10] Then, in the section detailing how to maintain continuity of operation, when describing the reconstitution phase and returning to normal operations, an organization must "consider providing counseling and other mental health and social services resources."[11] While it is at least acknowledged as something the DOD may have to deal with, it does not appear to be a serious concern. The focus is more on the installations and ensuring they can support the operating forces and maintain operational capability. Even though the DOD recommends mental health care planning for the supporting establishment, it appears to be an afterthought and not something seriously considered for any other subordinate element.

Marine Corps Order (MCO) 6220.1, USMC Pandemic Influenza (PI) Response Plan, signed on 6 November 2009, goes into a little more detail than the DOD and government plans, as it has a narrower focus than either of them. It outlines the key tasks for the Marine Corps during each of the DOD phases of response and identifies the installations as the center of gravity for the Corps' response. The installations being the main effort instead of the operating forces is different from what one would expect because the mission is to prepare for, respond to, and recover from PI, which would have a much greater impact on the operating forces.[12] Also, the operating forces are the primary concern of readiness and component for responding to crises, so the installations would act in support of them. The second half of the mission statement states that the Marine Corps will support government efforts, which would make sense for the installations to do, in supporting the local communities. This shows that the Corps has a slightly more detailed plan, but it is still generic and only broadly addresses mental health readiness and response for the force.

The Marine Corps plan provides much more detail about planning for quarantine and isolation. It describes a variety of measures that need to be considered, such as security, basic needs, and transportation. It also specifically mentions the need to plan for mental health support for those subject to quarantine or isolation. Not only does it identify the need for psychological support for potential patients but also for emergency workers, as it acknowledges the additional strain they will be under working during a pandemic. Additionally, the MCO lays out a PI preparedness and response planning checklist for its medical treatment facilities (MTFs). While this is specific to the MTFs, it could be used by other subordinate units to ensure they cover all the necessary tasks when creating their own PI response plans.

The U.S. government overall has a framework for how it would respond to a global pandemic and try to reduce its impact on the American popula-

tion. While some plans are more detailed than others, especially in the realm of mental health, they all account for it and acknowledge it is something that needs to be planned for. However, as with all plans, they are only effective if implemented properly, which for a large organization like the government, is not always possible.

The U.S. Government's Response to COVID-19

The wide variety of accounts describing the government response to COVID-19 makes it difficult to succinctly depict it here. Fortunately, the Government Accountability Office (GAO) was charged with overseeing the implementation and execution of the money allocated as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act, and they have published bimonthly reports on its execution starting in June 2020.[13] These reports are freely available to the public and go into detail about how effectively the government has implemented the COVID-19 relief acts passed by Congress. Even though the reports focus primarily on how funds have been obligated and expended, they still provide some insight into how effective the whole-of-government response has been.

GAO published its most recent report on 28 January 2021, and the report highlights several areas that the organization found to be delinquent in previous reports, which still were not adequately addressed.[14] Further, it identifies 13 new recommendations for executive action the government should take to improve the nation's response to the pandemic.[15] As with the pandemic response plans described above, psychological and behavioral health were mentioned only a few times in more than 500 pages of text. This further shows the lack of attention to mental health from the government and how it was more focused on reducing the spread of the virus than on other health impacts from it.

One of the instances about psychological health focuses on the use of telehealth by the Department of Veterans Affairs (VA) to avoid face-to-face visits with their patients. This is one of the positive aspects of the report, in that the VA was already familiar with using telehealth to provide care to veterans, and with additional funding, it was able to expand that care without unneeded risk to the providers or the patients.[16] This shows that at least one aspect of the government was dealing with mental health issues, and they had some success.

Another instance where psychological health was deliberately accounted for as part of the CARES Act was additional resources to "mitigate the negative psychosocial impact of social isolation."[17] While the act provided $50 million for this initiative, it is only for Aging and Disability Resource Centers as part of the Older Americans Act of 1965, which means none of it went to the U.S. military.[18]

The CARES Act funded various aspects of the Department of Health and Human Services (HHS), including the Substance Abuse and Mental Health Services Administration, which was appropriated $425 million.[19] As with the amount spent on the Aging and Disability Resource Centers, it seems like a lot,

but it is only 0.17 percent of the total amount appropriated to HHS.[20] Also, with mental health services sharing the funding with substance abuse services, one cannot be sure which aspect received more attention, substance abuse or mental health.

The GAO report acknowledges that its findings are incomplete and lists 103 areas in which it has ongoing work.[21] Of these areas, several are noteworthy in that they will provide future information relevant to this topic. They include the military health system response to COVID-19, impacts on DOD maintenance depots, and behavioral health impacts. This at least shows that GAO understands the limitations of its work and is trying to gain a more complete picture of the impact of COVID-19.

As with the U.S. government response plans, it makes sense that the priority is on the physical health of the population, so much of the focus was on developing a vaccine. However, the impacts of a pandemic go far beyond that and can have lasting impacts elsewhere as well. With pandemics being a part of human history, they have been studied and written about before, such as in Mark Honigsbaum's *A History of the Great Influenza Pandemics*, Andrew T. Price-Smith's *Contagion and Chaos*, and Nathan Wolfe's *The Viral Storm*.[22] Two specific examples have some commonalities with the COVID-19 pandemic. The 1918 flu and the Ebola outbreak in western Africa in 2013–14 each have some commonality to the COVID-19 pandemic, which make them useful cases to determine how COVID-19 may impact the U.S. military.

Historical Examples of Pandemics

Humans have dealt with pandemics for thousands of years, and while each is unique, they all share similar qualities. These commonalities enable the world's health experts to plan and prepare and try to ensure the next pandemic is less impactful than the last.

The most recent global disease comparable to COVID-19 was the 1918 influenza pandemic. Even though that occurred more than a century ago, it shares many similarities with COVID-19. While the disease itself is similar to COVID-19, the world in which it infected was very different. The global community was in the midst of World War I, which cast a great shadow over the challenges associated with the pandemic. As the war was at the forefront of everyone's minds, the flu was an afterthought, and people could not be bothered with it.[23] With the lack of concern and inability of the federal government to coordinate a response, communities across the United States implemented measures sporadically and therefore with mixed results.[24] Some of the most common intervention measures were the closures of public spaces where people could gather and the banning of public gatherings in general.[25] These measures were not only the most common but also seemed to have the greatest impact. These interventions were not just implemented in civil society but military bases employed them as well. They attempted to reduce the spread of the disease through prohibiting mass gatherings and prepared for its inevitable arrival on

base by designating certain areas as overflow hospital beds and quarantining units and areas of camps to prevent them from being infected. One of the notable impacts of the 1918 flu was its effect on the psychological health of the U.S. military. As if the death toll was not enough, with more people killed by the flu than in battle during World War I, and it also increased absenteeism and reduced the morale of the armed forces.[26] With the military simultaneously fighting a war overseas and fighting to keep the troops healthy, it simply could not keep up with both. Even though the U.S. military was not engaged in a conflict of the same scale as World War I when COVID-19 began to spread, it could have some similar psychological impacts.

The 2013–14 Ebola outbreak in western Africa also provides some insight into the potential psychological impacts of COVID-19 on the U.S. military because U.S. servicemembers were deployed to support the U.S. response. Because of the high profile of the mission, the publicity it received, and the high mortality rate, military leaders took many precautions to prevent the disease from returning to the United States. One of those measures was to quarantine the entire force that deployed to western Africa.[27] The unique nature of the situation allowed researchers to conduct a study on their mental health and attitudes toward their leadership while they were in quarantine. Because of the size of the unit and their ability to prepare, psychological impacts were minimal, with the most noticeable challenge being sleep problems.[28] However, this is difficult to extrapolate to the scale of COVID-19. With the entire global force needing to be quarantined after return from deployments, bases across the country needed additional space to do that. Also, servicemembers did not deploy in anticipation of being quarantined on their return, as those deploying in support of the Ebola response did. This expectation management for the troops and their families can have a significant effect. In the same vein, the leadership was fully prepared and could prepare their subordinates for what they would go through when they returned. Unfortunately, military leaders were not as fortunate when returning from deployments during COVID-19 and had to adjust in the midst of their returns to ensure their units were properly cared for. Other key differences that make for a challenging comparison include the transmissibility and mortality rates of the viruses, the many unknowns surrounding COVID-19—especially early in the pandemic—and the scale of the outbreaks. These differences make any comparison challenging and show the rareness of a pandemic like COVID-19.

These historical examples provide some insight into the potential psychological impacts of COVID-19. From the 1918 flu, researchers know that psychological health problems in the military contributed to several challenges the military faced.[29] The Ebola outbreak showed that well-informed and prepared leadership can make a significant difference in the mental health of their units. These findings can inform the hypotheses and research questions of current researchers. While research has been sparse up to this point, there are some relevant studies that can serve as a starting point.

Emerging Research

At this time, researchers have not specifically investigated the psychological impacts of COVID-19 on the U.S. military. The sudden onset and dispersion of the disease prevented any trials from being initiated immediately, so nothing has been published to date. However, as the world enters its second year of the pandemic, those types of studies may begin to emerge.[30] Therefore, the research examined here can only allude to potential impacts on the U.S. military and its readiness to respond to crisis and how further research could be conducted.

Studies on the U.S. population and other groups have been conducted and provide some insight into the possible impacts on the military. Because the armed forces are a representation of the nation, similar patterns may emerge in the military as have arisen in the civilian population. Four studies of adults in the United States are the most relevant and provide some insight into the larger impact of COVID-19 on the mental health of the population.

The first study compares the prevalence of anxiety and depressive symptoms from 2019 and 2020.[31] Researchers used the National Health Interview Survey (NHIS) and Household Pulse Survey (HPS) to collect responses five times: from January–June 2019 they used the NHIS, and from the end of April through the end of May 2020 they used the HPS in four iterations, in total collecting 336,525 responses across the five periods.[32] They did not have any data on the demographics of the respondents, only that they are adults in the United States. They found that the respondents were more than three times as likely to screen positive for depressive disorders, anxiety disorders, or both, and more than one in three screening positive for both during the pandemic in April and May 2020 than in 2019.[33] Even though the survey looked at a small percentage of the population and the demographics cannot be compared to the military because they are unknown, this study does indicate that, in general, the U.S. population was in a deteriorated mental health state during the pandemic, and this could translate to the military population as well, but more research is required on military populations specifically to verify that.

The next relevant study examines depressive symptoms in U.S. adults before and during the COVID-19 pandemic. The researchers used data from the COVID-19 and Life Stressors Impact on Mental Health and Well-being study, conducted from 31 March to 13 April 2020, for their assessment during the pandemic, and the National Health and Nutrition Examination Survey, conducted from 2017 to 2018, for their estimates before the pandemic.[34] The sample size was much smaller in this study, with 1,441 respondents during COVID-19 and 5,065 before the pandemic. However, the study does break out more specific demographic information, with quantities and percentages tied to gender, age, race, education, marital status, household income, and household savings. This allows for a somewhat more detailed analysis of the results, but with fewer participants, it is less likely to be generalizable to the greater population. However, in each of these categories, the prevalence of depressive symptoms was higher during COVID-19 than before.[35] Also, across the subject

group, the prevalence of depressive symptoms was three times higher during the pandemic than before. As with the first study, these results could translate to the military community as well, but more research is required to verify that.

The third study examined the reporting of depression in adults in the United States, again comparing information from before the pandemic to information collected during it. As with the other studies, the participants completed surveys in March and April 2020, with 6,819 responding, and these results were compared to the National Health and Nutrition Examination Survey (NHANES) taken in 2017–18, which had 5,075 respondents.[36] The researchers also examined NHANES data from 2007–18 to assess any potential trends in the data. They further collected data on the participants' demographics, including age, gender, race, education, and household income. Again, with such a small sample size, it is difficult to make any concrete conclusions, but the results show a similar pattern as the other studies. Compared to 2017–18, when 8.7 percent of U.S. adults reported depressive symptoms, 10.6 percent reported symptoms in March 2020 and 14.4 percent in April 2020.[37] As this was the very beginning of the pandemic, it is hard to determine if that trend continued or how it changed throughout the pandemic, but the initial results are significant, especially since they echo those of the other two studies shown.

Finally, researchers conducted a similar comparison of data from April 2018 and April 2020 to determine the prevalence of psychological distress and loneliness among U.S. adults. The researchers used the Johns Hopkins COVID-19 Civic Life and Public Health Survey compared to a National Health Interview Survey (NHIS) conducted in April 2018.[38] Overall, they had fewer respondents in 2020 with 1,468, but 25,417 from the NHIS in 2018. They did collect similar demographic data as the other studies and maintained a similar distribution across the U.S. population. Further, their results echo those of the other studies, with 3.9 percent reporting symptoms of serious psychological distress in 2018 and 13.6 percent in 2020.[39] One factor to consider in this study was that the symptoms were highest among adults 18–29 years old, which is the same age range as almost three-quarters of the active-duty military, which could be cause for concern.[40] However, the results cannot directly be translated to the U.S. military as many other factors are at play.

While these studies do not point directly to the U.S. military being more depressed or suffering serious psychological distress because of the pandemic, they are indicative of what the nation as a whole is experiencing. Many factors prevent this from translating to impacts on the military population, but it is an important point to consider. Further, even if the servicemembers are not suffering from increased levels of depression, anxiety, or psychological distress, their families and friends are the civilian population who are dealing with those issues, which can take a toll as well. All of these factors must be considered when determining if COVID-19 has had an impact and to what extent and how it can have an impact further in the future.

Impacts on the U.S. Military

Even though COVID-19 has been spreading through the United States for more than a year, research pertaining to the psychological effects on the U.S. military is ongoing and inconclusive. This is because the data that have been collected are still being analyzed by psychologists and researchers.[41] Because of the sudden onset of the pandemic, many military psychologists were not entirely prepared to collect, handle, or analyze the data as soon as it was available. This has made developing hypotheses, results, and theories based on that data very difficult. At the same time, more data are being collected as the pandemic continues. While psychologists have begun analyzing the data that have been collected, and some results have been published, it will take time for the behavioral health community to reach a consensus on how the pandemic has impacted different parts of the population.[42] As the country and the world get the pandemic under control, this will change and research will be published to show the various psychological impacts it had on the global population—specifically the military. With vaccine distribution increasing every day and fewer and fewer people being infected, this will hopefully occur sometime this year.[43] However, as psychological impacts are not always identified or manifest immediately, mental health specialists will continue to deal with the effects.

The potential impacts on the military will likely echo those described above in the research conducted thus far. However, this is difficult to determine due to several factors that make the military unique. First, military training is designed to prepare servicemembers for stressful situations so they can function effectively in combat. This creates resiliency, which in general reduces the amount of mental health challenges encountered by military forces. Next, military leadership is trained to be engaged and involved with their subordinates, more so than is expected in a traditional occupation. This additional level of care further enhances their resiliency and gives them another layer of support beyond what the average citizen has. Those in the military also have a variety of resources available to them if they encounter mental health challenges. Not only is the chain of command used to handle low-level issues, but it also enables servicemembers to seek other sources of support, such as chaplains, behavioral health specialists, and psychologists. These resources are available throughout the military and its health system, which is free to access by all servicemembers. However, as indicated by the studies of the general U.S. population, the military demographic could be more prone to depression or psychological distress due to the pandemic. This is because of the age range in which most servicemembers fall. Further, as the military population is drawn from the greater U.S. population, their families, friends, and loved ones are likely to suffer from mental health challenges during the pandemic. Even though servicemembers may not be directly impacted, their concern for their loved ones and potential inability to support them because they are stationed far from home could have a negative impact. Ultimately, it will take time for psychologists and researchers

to study the impacts of COVID-19 on the U.S. military, but as it has affected the American and global population, it will likely have an effect on the military population as well.

Recommendations

As the COVID-19 pandemic is the first global pandemic to occur in more than a century, much can be learned from it that will enable better preparations for the future. Even as COVID-19 still infects people across the globe, many recommendations can be implemented now to maintain the psychological health of the U.S. military until the pandemic is over. The *Textbook of Disaster Psychiatry* has a host of recommendations to ensure proper preparation for a pandemic, but the ones that stand out the most are communication with the public and leadership on education and preparedness for a pandemic.[44] For the DOD and U.S. military, these can be implemented easily, as they have a captive audience and take developing leaders very seriously. As shown earlier, the federal government, DOD, and Marine Corps all have pandemic response plans, even though they may not be current. As the DOD already practices and trains for a variety of other disaster responses, adding pandemics to that should not be a significant challenge. Problems may arise because a pandemic can last months or years and a drill cannot last that long as it would impede regular operations. However, military units regularly train for several weeks at a time so they could implement a training schedule in which they jump ahead in the timeline from the pandemic's onset to its peak and finally to later response and recovery. With the military capturing many lessons learned during COVID-19, it has the ability to incorporate them into its plans and policies now while they are still fresh.

As mental health is only briefly mentioned in the government and DOD's plans, they both would benefit from expanding these sections to better account for the impact of mental health on pandemic preparedness, response, and recovery. The DOD has instructions on maintaining psychological health in military operations, and while it is only 10 pages long, the DOD *Implementation Plan for Pandemic Influenza* does not reference it at all.[45] Even this modest step would at least indicate that the DOD recognizes that operational stress will be a factor during a pandemic, and it needs to be properly planned for at all levels.

The same is also true for the Marine Corps' Pandemic Influenza Response Plan.[46] While it does more than the DOD plan in terms of highlighting the need for mental health and psychological support, it also does not refer to its own Combat Operational Stress Control (COSC) program.[47] The Marine Corps Order on COSC is much more detailed than the DOD instruction and provides a framework for subordinate units to establish and implement their own programs. Again, if the Marine Corps' Pandemic Influenza Response Plan referred to its own COSC program, it would at least indicate that it acknowledges it is necessary to plan to maintain the psychological health of the force

during a pandemic. It could go further by writing some of those details into the Pandemic Influenza Response Plan and indicating where COSC teams would be best incorporated into the planning and execution of the Pandemic Influenza Response Plan.

Finally, even though some studies have already been conducted on the civilian population, the DOD should conduct or sponsor research focused on the military population and especially those who were directly affected by the pandemic. This includes not only those who supported pandemic response operations but also those whose training and deployments were impacted. As the pandemic is now entering its second year, this will include a large portion of the force, but the possible ramifications are great enough that a large scope for the research is necessary.[48] It will be difficult to collect specific data on the units and personnel who deployed and redeployed during the first year of the pandemic, but the regular data collected during that time can at least inform and provide some indication of any changes in the mental health of the force during that time. Military psychiatrists can use that information to develop research plans now so that in the future, when another pandemic occurs, they can begin collecting data immediately to get a better indication of how it is impacting the military.

Because the DOD already has instructions for maintaining psychological health in military operations, it has a baseline to work from in incorporating that into other policies. The challenge will be for the leadership in ensuring it is not overlooked. As military servicemembers are trained to handle stress in combat situations, it makes sense that their leaders would assume they can handle stress in other situations as well. The challenge is in finding a balance between how much psychological health should be emphasized without making it seem like the entire DOD is stressed out. Engaged leadership is a large part of this, and ensuring leaders have the training and resources they need to appropriately handle any concerns is critical as well. Especially in unusual situations, such as a pandemic, leaders need to be more engaged with their troops and ensure they can execute their mission effectively. Even though the focus will be on the mission, just as much focus needs to be on the servicemembers and how they are managing the stress associated with a novel situation. As long as military leaders are engaged and aware of the mental health of their subordinates, they should be able to identify any potential risk factors as soon as they appear, ensure their subordinates are able to get the care they need, and employ measures to ensure the psychological health of the force is maintained so they are ready to execute their mission to the best of their abilities.

Conclusion

The U.S. government has a robust plan for responding to pandemics but does not go far enough in addressing the potential mental health challenges. Its response has been inadequate and needs to be reevaluated to ensure the same mistakes are not repeated. Further, as researchers analyze and publish their findings,

the true mental health impacts will emerge and better inform any modifications to the current plans and policies and future pandemic response efforts.

Fortunately, many of the tools required for a more comprehensive response already exist in the DOD, but they are only applied to those who are preparing for a deployment, deployed, or have recently returned from a deployment. This overlooks the many other things the military does in support of the government and its citizens. Simply applying the tools the military and government already have to the many other contingency and response plans of the DOD would be a step forward in ensuring military personnel have the mental health support they need in all situations. With further research, those plans can be developed more and specialized so that the right support is provided to the right people at the right time.

The COVID-19 pandemic has created many opportunities to learn and improve how the global population will respond to the next one. The information collected can be used to improve the various plans and policies to reduce people's loss and suffering. While scientists cannot predict when the next pandemic will strike, they can implement some of the lessons they have learned during this one. It will require more research to determine the best way forward, but it will prove its worth in ensuring a better response to the next one.

Endnotes

1. In late 2019, a novel coronavirus, SARS-CoV-2, was identified and determined to have the potential for global spread. By early spring 2020, the World Health Organization declared the resulting disease, COVID-19, a global pandemic. The disease spread rapidly in the United States for a wide range of reasons, including weak public health infrastructure, restricted access to medical care, regional variations in government and private sector response, and inconsistent public reactions to recommended actions to slow the spread, such as social distancing and wearing masks. At the time this thesis was written, COVID-19 had killed more than 500,000 people in the United States. Vaccines were developed very quickly and were being distributed, but the ultimate end state of the pandemic was still unclear.
2. *National Strategy for Pandemic Influenza: Implementation Plan* (Washington, DC: Homeland Security Council, 2006).
3. *National Strategy for Pandemic Influenza*, 2.
4. *National Strategy for Pandemic Influenza*, 11.
5. *National Strategy for Pandemic Influenza*, 109.
6. *National Strategy for Pandemic Influenza*, 12.
7. *National Strategy for Pandemic Influenza*, 7.
8. *National Strategy for Pandemic Influenza*, 48.
9. *Department of Defense Implementation Plan for Pandemic Influenza* (Washington, DC: Office of the Assistant Secretary of Defense for Homeland Defense, 2006), 4.
10. *Department of Defense Implementation Plan*, 69.
11. *Department of Defense Implementation Plan*, 78.
12. *Marine Corps Order 6220.1, USMC Pandemic Influenza (PI) Response Plan* (Washington, DC: Headquarters Marine Corps, 6 November 2009), 16.
13. Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020, 116th Cong., Pub. L. No. 116-136 (25 March 2020).
14. This article was written in the spring of 2021 during the second year of the pandemic.
15. *COVID-19: Critical Vaccine Distribution, Supply Chain, Program Integrity, and Other*

    Challenges Require Focused Federal Attention (Washington, DC: Government Account-ability Office, 2021), 12.

16.   *COVID-19*, 124.

17.   *COVID-19*, 197.

18.   *COVID-19*, 197; and CARES Act of 2020, 279.

19.   *COVID-19*, 133; and CARES Act of 2020, 276.

20.   *COVID-19*, 133.

21.   *COVID-19*, 288–92.

22.   Mark Honigsbaum, *A History of the Great Influenza Pandemics: Death, Panic, and Hysteria, 1830–1920* (London: I. B. Tauris, 2014); Andrew T. Price-Smith, *Contagion and Chaos: Disease, Ecology, and National Security in the Era of Globalization* (Cambridge, MA: MIT Press, 2009); and Nathan Wolfe, *The Viral Storm: The Dawn of a New Pandemic Age* (New York: Times Books, 2011).

23.   Honigsbaum, *A History of the Great Influenza Pandemics*, 180–81.

24.   Price-Smith, *Contagion and Chaos*, 86.

25.   Richard J. Hatchett, Carter E. Mecher, and Marc Lipsitch, "Public Health Interventions and Epidemic Intensity during the 1918 Influenza Pandemic," *Proceedings of the National Academy of Sciences of the United States of America* 104, no. 18 (2007): 7582–87, https://doi.org/10.1073/pnas.0610941104.

26.   Price-Smith explicitly states that "in the US experience, pandemic influenza induced absenteeism, loss of morale, and logistical chaos throughout the military infrastructure." Price-Smith, *Contagion and Chaos*, 64–65.

27.   A. B. Adler et al., "Quarantine and the U.S. Military Response to the Ebola Crisis: Soldier Health and Attitudes," *Public Health*, no. 155 (2018): 95, https://doi.org/10.1016/j.puhe.2017.11.020.

28.   Adler et al., "Quarantine and the U.S. Military Response to the Ebola Crisis," 96.

29.   Price-Smith, *Contagion and Chaos*, 65.

30.   This article was written in the spring of 2021 during the second year of the pandemic.

31.   Jean M. Twenge and Thomas E. Joiner, "U.S. Census Bureau-assessed Prevalence of Anxiety and Depressive Symptoms in 2019 and during the 2020 COVID-19 Pandemic," *Depression & Anxiety* 37, no. 10 (2020): 954–56, https://doi.org/10.1002/da.23077.

32.   Twenge and Joiner, "U.S. Census Bureau-assessed Prevalence," 955.

33.   Twenge and Joiner, "U.S. Census Bureau-assessed Prevalence," 955.

34.   Catherine K. Ettman et al., "Prevalence of Depression Symptoms in US Adults Before and During the COVID-19 Pandemic," *JAMA Network Open* 3, no. 9 (2020), https://doi.org/10.1001/jamanetworkopen.2020.19686.

35.   Ettman et al., "Prevalence of Depression Symptoms," 6.

36.   Michael Daly, Angelina R. Sutin, and Eric Robinson, "Depression Reported by US Adults in 2017–2018 and March and April 2020," *Journal of Affective Disorders* 278, no. 1 (2021): 131–35, https://doi.org/10.1016/j.jad.2020.09.065.

37.   Daly, Sutin, and Robinson, "Depression Reported by US Adults in 2017–2018 and March and April 2020," 133.

38.   Emma E. McGinty et al., "Psychological Distress and Loneliness Reported by US Adults in 2018 and April 2020," *JAMA* 324, no. 1 (2020): 93–94, https://doi.org/10.1001/jama.2020.9740.

39.   McGinty et al., "Psychological Distress and Loneliness," 93–94.

40.   *2019 Demographics: Profile of the Military Community* (Washington, DC: Department of Defense, 2020), 15–36.

41.   Doron Amsalem et al., "Increasing Treatment-Seeking Intentions of US Veterans in the Covid-19 Era: A Randomized Controlled Trial," *Depression & Anxiety* 38, no. 6 (June 2021), https://doi.org/10.1002/da.23149.

42.   Twenge and Joiner, "U.S. Census Bureau-assessed Prevalence"; Ettman et al., "Prevalence of Depression Symptoms"; Daly, Sutin, and Robinson, "Depression Reported by US Adults in 2017–2018 and March and April 2020"; and McGinty et al., "Psychological Distress and Loneliness."

43.   This article was written in the spring of 2021 during the second year of the pandemic.

43. Ursano, *Textbook of Disaster Psychiatry*, 278.
44. *Department of Defense Implementation Plan for Pandemic Influenza.*
45. *Marine Corps Order 6220.1. USMC Pandemic Influenza (PI) Response Plan* (Washington, DC: Headquarters Marine Corps, 2009).
46. *Marine Corps Order 5351.1, Combat and Operational Stress Control Program* (Washington, DC: Headquarters Marine Corps, 2013).
47. This article was written in the spring of 2021 during the second year of the pandemic.

Guided by Experience
A Comparative Analysis of the U.S. Military Responses to Natural Disasters in Haiti (2010 and 2021)

Christopher Davis, PhD

Abstract: In 2010 and 2021, Haiti was struck by a massive earthquake and both times it left the nation in the grips of a humanitarian crisis. The U.S. military responded to both events with a large-scale, interorganizational relief effort to provide aid to the affected areas. Though the disaster in 2010 created unprecedented challenges, the U.S. Southern Command met those challenges and applied their lessons to its response to the 2021 earthquake 11 years later. **Keywords:** earthquake, Haiti, U.S. Southern Command, SOUTHCOM, humanitarian relief effort, Operation Unified Response, Joint Task Force-Haiti

Natural Disasters and Political Instability in Haiti

On 14 August 2021, the old axiom of "history repeats itself" was keenly and painfully felt by earthquake-stricken Haiti.[1] Without having yet fully recovered from the earthquake that hit Port-au-Prince on 12 January 2010, Haiti once again found itself crippled by the same natural disaster less than 80 miles from where the previous one had struck. As this situation 11 years later demonstrates, there is an important caveat that gets left out of that old axiom: when repeating itself, history never performs a precise reenactment. The 2010 7.0-magnitude earthquake struck within 15 miles of the urban capital of Port-au-Prince while the 2021 7.2-magnitude earthquake struck hardest

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against the more rural areas of the Tiburon Peninsula.[2] Furthermore, early relief efforts in 2021 were hindered, and the devastation compounded, by Tropical Storm Grace, which made landfall on Haiti a mere two days after the earthquake.[3]

The goal of this article is to provide a comparative analysis of the U.S. military's coordinated responses to the Haitian earthquake disasters of 2010 and 2021. In doing so, it will demonstrate how the U.S. military took the lessons learned from the challenges it faced in 2010, launching the largest humanitarian aid operation the Department of Defense (DOD) had ever undertaken and applied them when a similar event recurred in 2021. This comparison is made using available studies of two events that, while separated by time, are linked by both their location and similar circumstances. As the 7.2 earthquake along the Tiburon Peninsula in 2021 is still a relatively recent event, there are far fewer studies of its coordination and impact in comparison to that of the 2010 Operation Unified Response. As further studies will no doubt come, and with it greater scrutiny of the U.S. military response to the 2021 earthquake, this article seeks to provide a preliminary assessment of what the 2021 operation successfully drew from the experience of 2010.

One important difference in 2021 that made the situation even more problematic than in 2010 was that the natural disasters of the earthquake and Hurricane Grace came during the midst of one of the greatest political crises in Haiti's long and troubled history. On 7 July 2021, Haitian president Jovenel Moise was assassinated in his home by masked gunmen whose motivations and goals are still under investigation.[4] A controversial figure in Haitian politics, Moise's ruling by decree, debates about when his term limit as president ended (or would have ended), and his dissolution of a majority of the Haitian legislature left Haiti in a constitutional crisis with an unclear path of succession to the presidency.[5] Prime Minister Ariel Henry, appointed just days prior to Moise's assassination, has since taken the role of acting president of Haiti, and elections, which were scheduled for November and have since been delayed.[6] As the question of authority has lingered within the Haitian government, overall government authority within Port-au-Prince has progressively eroded in the wake of these political and natural disasters as various gangs in the capital vie for control.

The political situation in Haiti as well as the increasing power of the gangs as the authority in the capital continue to be an ongoing situation without a clear solution. Previous experiences of the United States using the military to restore order in the wake of political turmoil, such as the U.S. intervention in 1915 after the assassination of Jean Vilbrun Guillaume Sam, offer more guidance on how best to avoid past missteps than a course of action in addressing Haiti's destabilization. For problems not related to internal Haitian politics, however, recent history provides clearer advice. Regardless of the problems related to the political situation in Haiti, the U.S. military, in their response to the 2021 earthquake, used lessons learned from previous experience to effectively

respond to a natural disaster. The successes and problems encountered during Operation Unified Response in 2010 provided valuable experience that Joint Task Force-Haiti learned from and applied in 2021.

Operation Unified Response

It was immediately apparent in the aftermath of the 2010 earthquake that a natural and humanitarian disaster of that magnitude required a coordinated response across multiple military branches and U.S. aid organizations. Responsible for military-to-military relationships (both among U.S. military branches and foreign partner militaries in the region) in an area encompassing Central America, South America, and the Caribbean, the U.S. Southern Command (SOUTHCOM) was positioned to coordinate and execute such a response.[7] The U.S. Agency for International Development's (USAID) Office of U.S. Foreign Disaster Assistance was the lead agency of the U.S. whole-of-government response to the Haiti earthquake, but the sheer magnitude of the disaster required the manpower and resources of the Department of Defense.[8] The DOD already had in place the expeditionary emergency medicine units, vertical lift capability, command and control communications, and logistics that Haiti would need to manage the situation.[9] Unfortunately, Haiti's relief needs were extreme in the aftermath of the earthquake, giving SOUTHCOM the challenge of determining how to respond to an unprecedented humanitarian crisis. In a country often given the unenviable label of being the poorest country in the Western Hemisphere, the Haitian capital of Port-au-Prince, home to approximately 700,000 people in a hilly terrain that easily lent itself to post-quake landslides, had just been dealt a knockout punch in the form of more than 200,000 dead, another 300,000 wounded, and massive damage to private residences, government buildings, and infrastructure.[10]

Just as the U.S. government promised the Haitian people a whole-of-government response, SOUTHCOM provided likewise. Operation Unified Response began immediately with resources from every branch of the U.S. military concentrated within Joint Task Force-Haiti under the command of Lieutenant General Paul K. Keen.[11] One of the first challenges that SOUTHCOM faced in responding to the earthquake was access to get personnel and materiel into the city, as the significant damage to Port-au-Prince's infrastructure included the airport and seaport. Nevertheless, within 48 hours after the earthquake, Army paratroopers from the 2d Brigade Combat Team, 82d Airborne Division, were on the ground distributing food, water, and medical care.[12] Furthermore, until the Toussaint Louverture International Airport could be made operational again, the Air Force Special Operations Command (AFSOC) 623d Air and Space Operations Center (AFSOC) used its proximity at Hulbert Field, Florida, to set up an initial command and control station.[13] As SOUTHCOM took the lead in military operations for Unified Response, the 12th Air Force (Air Forces Southern) became the air component of the operation. Based farther away at Davis-Monthan Air Force Base, Arizona,

command and control had then shifted to the 612th Air Operations Center (AOC) to manage flight planning and airspace coordination for the incoming aid to Haiti.[14]

As SOUTHCOM assessed the overall situation and how best to address it, it established a series of operational phases to relieve and restore the affected area. Phase I (emergency response) involved search and rescue teams for emergency aid, establishing situational awareness, deploying initial forces, and setting up port operations. Phase II (relief phase) established medical support; distribution of food, water, and aid; and reestablished critical infrastructure and shelters. Phase III (restoration) redeployed U.S. military assets as the need for humanitarian relief decreased, shifting the continuation of relief and infrastructure reconstruction to other government and nongovernmental organizations. Phase IV (stabilization) worked to reestablish legitimate civil authority and provide basic services to the Haitian people, and phase V (recovery) involved long-term support to the Haitian government to rebuild its infrastructure and ability to provide basic services.[15] The direct involvement of U.S. military forces in the relief-based phases I and II successively diminished through the recovery-based phases III–V as they took on increasingly supportive roles, because the ultimate goal in any foreign aid situation is to save lives and provide that nation with the means to regain self-sufficiency. However, as we will see later in this assessment, providing relief to Haiti and Haiti's recovery from this disaster are separate and distinct issues.

Initially reliant on air units to restore the infrastructure to the air and sea ports, additional aid then came by sea. The Navy participated in flying relief supplies to accessible points in Haiti and airdropping supplies in others. The Navy also established field hospitals, provided medical assistance aboard the USNS *Comfort* (T-AH 40), and landed the 22d and 24th Marine Expeditionary Units to carry out amphibious relief missions.[16] Some of the ships involved in the relief effort included USS *Carl Vinson* (CVN 70), USS *Higgins* (DDG 76), USS *Underwood* (FFG 36), USS *Normandy* (CG 60), USS *Bataan* (LHD 5), USS *Carter Hall* (LSD 50), USS *Fort McHenry* (LSD 43), USS *Bunker Hill* (CG 52), USNS *Grasp* (T-ARS 51), USNS *Henson* (T-AGS 63), USS *Gunston Hall* (LSD 44), USS *Nassau* (LHA 4), USS *Mesa Verde* (LPD 19), and USS *Ashland* (LSD 48). During the course of Operation Unified Response just USS *Carl Vinson*'s air wing distributed more than 1.1 million pounds of aid and 19 of its helicopters flew more than 1,000 hours and evacuated 435 patients.[17] With the combined efforts of SOUTHCOM, USAID, and other international organizations, relief efforts were assembled quickly and carried out vital lifesaving and order-restoring missions as Operation Unified Response continued until 24 March 2010. By 17 February, the American Forces Press Service reported that the need for U.S. military forces was diminishing, indicating that conditions for SOUTHCOM's phase III had been met. Lieutenant General Keen had informed Pentagon reporters that the peak of 20,000 U.S. troops that had been deployed to Haiti since the operation began had been reduced to 13,000

(with 7,000 of these being on the ground) as their work thus far had allowed for greater civilian partner capabilities.[18]

Assessments of Unified Response

In the months that followed after the conclusion of Operation Unified Response, U.S. officials praised the success of the U.S. military in bringing relief to earthquake-stricken Haiti. In *House Resolution 1066*, Congressman Ike Skelton (D-MO) commended SOUTHCOM and Lieutenant General Keen's conduct of the operation as "immediate, focusing on life saving and assessment, humanitarian assistance, and disaster relief and evacuation operations" and that "all those involved in Operation Unified Response deserve our utmost thanks and praise for their efforts to save lives and restore hope in Haiti."[19] Additional praise was bestowed on 28 March 2011 when USAID gave its final report on the U.S. government response to the Haiti earthquake. In their independent review, the evaluation team from Macfadden described the actions of SOUTHCOM's Joint Task Force-Haiti as pivotal in saving many lives and that the

> vital services such as airport management; seaport repair; road clearance to deliver essential humanitarian material; airlift and sealift capabilities to bring in critically needed relief supplies; organizational capacity to manage the supply chain; aerial reconnaissance; and manpower and equipment to support HADR operations, logistics, and security, could not have been accomplished by any other international or host country agency.[20]

Nevertheless, not all of the assessments that followed were free of critique and, while praise is certainly due for this operation, the assessments require attention as often they—more than accolades—are necessary for greater improvement. Despite the vital relief efforts carried out by the U.S. military in Haiti during the course of Operation Unified Response, the assessment of the U.S. Government Accountability Office (GAO) determined that the operation faced challenges that would need to be addressed for potentially similar events in the future. Simply put, the findings of the GAO were that SOUTHCOM had been unprepared to respond to a disaster of that magnitude. This is certainly understandable as SOUTHCOM found itself in an unprecedented situation of responding to a massive natural disaster in the capital city of a nation among those least equipped to deal with a natural disaster. Operation Unified Response, therefore, represented the largest disaster relief effort that the DOD had ever conducted and required 24-hour, 7-days-per-week operations over an extended period.[21] Among the challenges covered in the report were organizational weaknesses, planning issues, and logistical issues. The critiques of this assessment gain further weight as they were echoed by those central in carrying out the operation. In a self-assessment written by Lieutenant General Keen,

Lieutenant Colonel Matthew Elledge, Lieutenant Colonel Charles Nolan, and Lieutenant Colonel Jennifer Kimmey, they state that the most significant challenge that they faced in the initial stages of the operation was logistics in the form of incomplete situational awareness, absence of a unified and integrated logistics command and control structure, and reliance on the only airport into Haiti through which to funnel all personnel and resources.[22] While the issue of the airport was a factor outside of SOUTHCOM's control, leaders in Joint Task Force-Haiti recognized that they were hindered early on by a logistical system designed primarily for internal support for their own forces rather than on external support for humanitarian assistance and disaster relief.[23]

Taking each of the challenges highlighted in the GAO assessment in turn, the organizational weakness indicated in the report was that the Haiti earthquake presented a situation outside of SOUTHCOM's core mission at that time. While SOUTHCOM was organized to meet regional challenges such as building partner nation military capabilities and providing humanitarian assistance, GAO determined that SOUTHCOM had not been organized with contingencies in place for disaster relief efforts and needed to be reorganized for such an event.[24] This in turn leads into GAO's conclusion that SOUTHCOM's response suffered from planning issues. Specifically, GAO determined that the command structure of SOUTHCOM lacked a division to address planning for future operations and had suboptimized some of the core functions that were necessary to respond to a large-scale contingency such as the events of 12 January 2010.[25] One of these core functions included logistics, which presented a series of issues that SOUTHCOM had to quickly overcome. The absence of this core function caused relief effort planning difficulties in the areas of supply, maintenance, deployment distribution, health support, engineering, logistics services, and contract support.[26] With the massive combined response force assembled by SOUTHCOM for this operation, these issues meant that the operation started with a lack of cohesion necessary for a force that size to be effective. Intercommunication across various components was strained as different components, such as Joint Task Force-Haiti, were organized under different structures within SOUTHCOM, and initial organization was further hindered by a lack of augmentation plan to produce the personnel necessary for such a large contingency.[27]

While SOUTHCOM faced understandable challenges in responding to an unprecedented disaster at the onset, it also addressed and overcame these issues with impressive speed. Much of this can be attributed to using SOUTHCOM's core mission successes of building and maintaining partnerships in the region to reorganize and meet its objectives. SOUTHCOM received more than 500 augmentees to its existing approximately 800 personnel, including an entire staff office from U.S. Northern Command (NORTHCOM), and 40 augmentees from seven agencies and four international organizations were also integrated into the planning and operations through its preexisting interagency and international partnerships.[28] Another asset SOUTHCOM was able

to employ to swiftly address these initial challenges was flexibility. Though U.S. military leaders started out Operation Unified Response with little direction and situational awareness, they were given significant latitude in their ability to demonstrate and exercise initiative, which allowed Lieutenant General Keen to determine initial requirements and use verbal orders of the commander.[29] This informal approach streamlined force selection and assignment generation resulting in a high volume of personnel and resources able to respond more quickly.[30] While the absence of organizational preparedness for large contingencies was cited as an initial hindrance, SOUTHCOM quickly turned the hindrance into an asset. Without a plan in place that may have called for a more rigid response, SOUTHCOM adapted as needed to the situation and used its preexisting assets accordingly.

It is perhaps fair to say that the disaster of 12 January 2010 was something for which no one could have been fully prepared. As mentioned earlier, this was an event where a massive earthquake struck one of the world's nations that was least equipped to deal with it. The U.S. military response was swift and effective given the scope of the devastation, injuries, and loss of life that had just been inflicted on a regional neighbor. It is also worth noting that in 2010 the U.S. military was still engaged in combat operations in both Iraq and Afghanistan, and that resources were swiftly and effectively shifted away from these theaters to support a large, immediate, and unexpected humanitarian relief effort speaks to the versatility of U.S. forces.[31] Though adaptability served SOUTHCOM in the initial organization of Operation Unified Response, it was nevertheless agreed that organizational restructuring to provide for future planning for large contingencies was something that needed to be done. Based on the recommendations of GAO, SOUTHCOM established the future operations division, which was tasked with elevating functions such as logistics and communications between DOD stakeholders that was absent at the onset of the operation. Additionally, this reorganization required an update of SOUTHCOM's organization of functions.[32] Follow-up reporting by GAO confirms that SOUTHCOM completed this update in the form of Southern Command Pamphlet 0103-Organization and Functions Manual as of 15 June 2012.[33]

The U.S. military committed a large amount of personnel and resources to bring relief to Haiti in the aftermath of 12 January that, at its peak on 1 February, consisted of more than 22,000 servicemembers, 58 aircraft, and 23 ships.[34] When Operation Unified Response ended by 24 March, the hope of Haitians and the international community who responded to the disaster was that out of the chaos of the earthquake could emerge a new beginning for the beleaguered nation. Haiti and the United States have shared a troubled history, where chronic political instability in Haiti and U.S. military interventions in response to it have strained relations. Many Haitians were suspicious of U.S. intentions in deploying such a large force once again to their capital, but there were also many who welcomed U.S. assistance as a chance to rebuild better than before. However, the U.S. military leadership in Haiti during the operation was

cautious in its optimism about the long-term impact of its efforts, pointing out the relief is not the same as recovery.[35] While the U.S. military provided vital relief in the form of distributing medical aid, food, water, and rebuilding key points of infrastructure in Port-au-Prince, there were still systemic problems within Haiti that had preceded the earthquake and were only exacerbated by it in the years that followed. Political corruption in Port-au-Prince tied up post-quake foreign aid that was meant for national recovery, and other geopolitical events in the Caribbean in later years brought the political and economic problems Haiti faced to a boiling point.[36] U.S. military and humanitarian intervention in 2010 could not solve these problems for Haiti. What SOUTHCOM could and did do was prepare, based on its experience in 2010, for the other major problem Haiti has over which the U.S. military (nor anyone else) has no control: that Haiti, located where the Caribbean and North American tectonic plates meet, would someday have another major earthquake.

Haiti's 2021 Disasters

When, on 14 August 2021, the nation of Haiti once again suffered an earthquake of a slightly higher magnitude of 7.2, it was the latest in a series of disasters that had recently struck that nation.[37] However, for the most part, the disasters that preceded 14 August had been a result of human actions. While Haiti has a long history of political and economic turmoil, the current crisis finds its genesis the in the suspension of the PetroCaribe program in 2019. Beginning in 2005, in hopes of extending its influence and courting potential anti-American allies in the Caribbean, under President Hugo Chavez, Venezuela instituted the PetroCaribe program. Under this program, Venezuela loaned oil to participating nations at a low interest rate and deferred payment on 40 percent of the oil purchased for up to 25 years, which in turn allowed those nations to sell the oil elsewhere to use the proceeds for social programs and development.[38] However, the worldwide price of oil had sharply declined since 2005 and by 2019, Venezuela's economy had collapsed and the PetroCaribe program was suspended. If the suspension of the program, which Haiti had participated in, did not cause enough problems in cutting off the flow of both oil and future revenue from oil sells, by 2019 it became clear that the Haitian government during the course of the program had not been using that revenue as intended.[39] While the Haitian government claimed to have used the $4 billion raised between 2008 and 2016 for hundreds of post-2010 earthquake infrastructure and health care programs, suspicion over the negligible progress in these areas resulted in a 2017 commission of the Haitian Senate determining that government coffers had been misreported, exchange rates had been adjusted, and more than half of all government contracts for these projects had been awarded outside of official bidding processes.[40]

Then-Haitian president Jovenel Moise's involvement in the PetroCaribe scandal in and of itself had made him a controversial figure. Riots over the resulting fuel shortage and mismanagement of government funds were com-

pounded as Moise's presidential term presented a constitutional crisis. Though the Haitian Constitution states that the president serves a five-year term, which officially ran out for Moise in February 2021, Moise refused to step down on the grounds that an interim government had technically occupied his first year in office.[41] Opponents of Moise accused him of placing himself as a dictator and, as Moise ruled increasingly by decree, fuel shortages persisted, and various factions within the Haitian government and elites used gangs to enforce their will against their opponents. Finally, the added strain of the COVID-19 pandemic in Haiti in the summer of 2021 was a powder keg.[42] Then on 7 July, that powder keg exploded when masked gunman entered President Moise's home in the middle of the night and carried out his assassination.[43]

To make matters worse, Moise's previous actions and assassination left the Haitian presidency with no clear path to succession. Under the Haitian Constitution, the Supreme Court president would succeed the president or, if barring that possibility, the prime minister could be appointed by Parliament.[44] However, the same week of Moise's assassination, the Supreme Court president died from COVID-19, and an official appointment of the prime minister from acting president to president was not possible as Moise had dissolved the Haitian legislature in 2020.[45] After some debate, it was agreed that Prime Minister Ariel Henry would serve in the role of acting president until elections can be held at some currently undetermined point in the future.[46] Political uncertainty, heightened social unrest in the wake of the assassination, and the increasing power of the gangs once used by government members and elites now emboldened to act on their own authority had brought Haiti to the threshold of chaos.

Joint Task Force-Haiti, 2021

The last thing Haiti needed at this point was another natural disaster, let alone successive natural disasters. Just days after a 7.2 magnitude earthquake hit the Tiburon Peninsula, tropical storm Grace arrived to immediately hinder recovery efforts. With the government in Port-au-Prince in an even weaker state than it was in 2010 to deal with a natural disaster, if there was a silver lining in this scenario it was that this earthquake had occurred farther away from the capital, causing less causalities and infrastructure damage. Nevertheless, Haiti still needed outside assistance and the United States once again provided a whole-of-government response to the devastation. Utilizing the future planning lessons learned from 2010 and able to augment force capability based on domestic and foreign partnerships, SOUTHCOM quickly established a new Joint Task Force-Haiti (JTF-Haiti) to provide DOD support to the USAID Disaster Assistance Response Team (DART).[47] JTF-Haiti, led by Rear Admiral Keith B. Davids, consisted of SOUTHCOM units from the U.S. Navy, Marine Corps, Army, and Air Force in partnership with British, French, and Dutch forces.[48] Additional support was provided by the U.S. Coast Guard, which began rescue operations and aid delivery within the first 24 hours after the earthquake.[49]

The operations of JTF-Haiti lasted from 15 August until 2 September

2021, demonstrating both how swiftly SOUTHCOM responded with a ready relief force and how quickly those relief efforts were carried out. In a total of 671 missions throughout the course of JTF-Haiti's operation, six ships, 19 helicopters, and eight transport aircraft succeeded in delivering a total of 587,950 pounds of food, water, medicine, and supplies to the devastated areas and assisted or rescued 477 people.[50] Especially noteworthy are the contributions of Joint Task Force-Bravo (JTF-B), which delivered 340,740 pounds out of the total aid provided by JTF-Haiti and included food, shelter, blankets, tents, tarps, water purifiers, generators, and an entire mobile medical hospital for affected communities.[51] At the time of this article, less than a year has passed since the 2021 Haiti earthquake and the work of JTF-Haiti in response to it. Fewer assessments have been made as of yet in comparison to the ones made of Operation Unified Response occurring 11 years earlier. While there are likely to be more reviews and analyses of JTF-Haiti in the future, there are preliminary takeaways that are immediately apparent with the information currently in hand.

JTF-Haiti Assessments and Conclusions

In this preliminary assessment comparing the U.S. military response to the 2010 and 2021 earthquakes in Haiti, initial information indicates that SOUTHCOM was able to prepare and execute Joint Task Force-Haiti in 2021 with even greater speed and efficiency than it had in 2010. As stated at the beginning of this article, there is an inherent challenge in making comparisons between two natural disaster events, because even similar disasters are not exactly alike. The 2021 Haiti earthquake resulted in more than 2,000 deaths, 12,000 injuries, and 150,000 homes destroyed.[52] While these losses were certainly tragic, the more rural location of this earthquake did not produce casualties in the hundreds of thousands that its more urban-centered predecessor did in 2010. In the face of the devastation of Port-au-Prince in January 2010, SOUTHCOM's relief response was impressive despite early organizational, logistical, and planning gaps for such a large contingency. In the absence of a clear plan of how to respond to a large disaster, SOUTHCOM relied on its strengths of adaptability and preestablished regional partnerships to quickly assemble the combined force necessary to aid Haiti in its darkest hour. The fact that SOUTHCOM was able to rapidly respond and engage in the largest disaster relief operation ever conducted by the DOD at a time when the United States was engaged in two wars on the other side of the world deserves praise.

In contrast, JTF-Haiti in 2021 did not require as much time, personnel, and resources to provide relief to affected Haitians, but it is clear that SOUTHCOM and JTF-Haiti took the lessons learned from 2010 to produce an even more efficient response. Partnerships with the U.S. Coast Guard, foreign military allies, and nongovernmental organizations (NGOs) were immediately called on for a rapidly coordinated response to provide aid to Haiti, the first of which arrived in less than 24 hours. Having addressed its absence in future large contingency planning after 2010, SOUTHCOM was prepared

to respond to such an event when history (imperfectly) repeated itself. While the devastation of the 2021 earthquake was thankfully not as extreme as that of 2010, SOUTHCOM, having already demonstrated its ability to respond to the unforeseen, showed it is even better prepared now that large disaster contingencies are in place. Based on Haiti's geographic position along a fault line and often within the pathway of seasonal hurricanes and tropical storms, such contingency planning will no doubt continue to be tested in the future.

Furthermore, while SOUTHCOM has reportedly made the recommended organizational changes to enhance their ability to render humanitarian aid to neighbors such as Haiti, Haiti has gone through even greater changes since 2010, but not for the better. At present, gangs in the capital of Port-au-Prince arguably exert greater authority than the Haitian government. The future of the current acting presidential administration is anything but clear, and none of the issues Haitians have faced during the last few years have been resolved or even eased by this point. This fact has been reinforced as recently as New Year's Day 2022, when Acting President Henry was forced to flee from the northern city of Gonaives amid a shootout between his security forces and an armed group that had previously warned him against entering the city.[53] As of February 2022, it has been reported that there are currently more than 200 gangs operating in Port-au-Prince, demonstrating exponential growth when compared to the roughly three dozen known gangs recorded in 2004.[54] Of the 2021 disasters Haiti has endured, a natural disaster was the only one that could clearly and cleanly be addressed by a U.S. military response. At a time when Haiti was in an even weaker position to respond politically to a natural disaster than in 2010, the U.S. military provided disaster relief, saving lives and providing aid. But, as stated before, relief is not recovery. Experience obtained from U.S. interventions in Haiti make it unclear what role if any the U.S. military could or should play in response to Haiti's internal political and social disasters, but experience has also provided a much clearer picture of the vital role the U.S. military can play in providing relief from natural disasters in Haiti and elsewhere.

Endnotes

1. "2021 Earthquake in Haiti and Tropical Storm Grace," Center for Disaster Philanthropy, 9 November 2021.
2. Richard Pallardy, "2010 Haiti Earthquake," *Britannica*, 22 January 2022; and "2021 Earthquake in Haiti and Tropical Storm Grace."
3. "2021 Earthquake in Haiti and Tropical Storm Grace."
4. Paul J. Angelo, "The Assassination of Haitian President Jovenel Moise: What to Know," Council on Foreign Relations, 14 July 2021.
5. Angelo, "The Assassination of Haitian President Jovenel Moise."
6. Gessika Thomas, "Haiti's Elections Postponed after Electoral Council Dismissed," Reuters, 28 September 2021.
7. Adm Craig S. Faller, *United States Southern Command Strategy: "Enduring Promise for the Americas"* (Doral, FL: U.S. Southern Command, 2019), 1.
8. Tucker D. Hughes, "Operation Unified Response: A Case Study of the Military's Role in Disaster Relief Operations" (master's thesis, Marine Corps University, 2011), 1.

9. Hughes, "Operation Unified Response," 1.
10. Hughes, "Operation Unified Response," 1.
11. "January 2010—Haiti Earthquake (Operation Unified Response)," Naval History and Heritage Command, National Museum of the U.S. Navy, accessed 1 March 2022.
12. SSgt John S. Laughter and PFC Kissta M. Feldner, "Operation Unified Response," U.S. Army, 25 March 2010.
13. Ellery D. Wallwork et al., *Operation Unified Response: Air Mobility Command's Response to the 2010 Haiti Earthquake Crisis* (Scott Air Force Base, IL: Office of History, Air Mobility Command, 2010), 1–2.
14. Wallwork et al., *Operation Unified Response*, 4.
15. Wallwork et al., *Operation Unified Response*, 3–4.
16. "January 2010—Haiti Earthquake (Operation Unified Response)."
17. "January 2010—Haiti Earthquake (Operation Unified Response)"; and "Operation Unified Response," *Navy Supply Corps Newsletter* 73, no. 2 (March/April 2010): 5.
18. John J. Kruzel, "Demand Dwindles for U.S. Forces in Haiti, Official Says," American Forces Press Service, 17 February 2010.
19. H. R. no. 1066, 111th Cong. (2010); and "Recognizing the Bravery and Efforts of the Members of Operation Unified Response," *Congressional Record* 156, no. 23 (2010): 4.
20. Debarati Guha-Sapir et al., *Independent Review of the U.S. Government Response to the Haiti Earthquake* (Washington DC: USAID, 2011), 66.
21. *Defense Management: U.S. Southern Command Demonstrates Interagency Collaboration, but Its Haiti Disaster Response Revealed Challenges Conducting a Large Military Operation* (Washington DC: Government Accountability Office, 2010), 25.
22. LtGen P. K. Keen et al., "Foreign Disaster Response: Joint Task Force-Haiti Observations," *Military Review* (November–December 2010): 87–88.
23. Keen et al. "Foreign Disaster Response," 88.
24. *Defense Management*, 26.
25. *Defense Management*, 26–27.
26. *Defense Management*, 27.
27. *Defense Management*, 27.
28. *Defense Management*, 28.
29. Gary Ceccine et al., *The U.S. Military Response to the Haiti Earthquake: Considerations for Army Leaders* (Santa Monica, CA: Rand, 2013), 72.
30. Ceccine et al., *The U.S. Military Response to the Haiti Earthquake*, 72.
31. Wallwork et al., *Operation Unified Response*, 2.
32. *Defense Management*, 28–29.
33. *Defense Management*.
34. Keen et al., "Foreign Disaster Response," 85.
35. Paul Farmer et al., *Haiti After the Earthquake* (New York: Public Affairs, 2011), 102.
36. Richard Knox, "5 Years after Haiti's Earthquake, Where Did the $13.5 Billion Go?," NPR.org, 12 January 2015.
37. United Nations Office for the Coordination of Humanitarian Affairs, "14 August 2021 M7.2 Haiti Earthquake. Preliminary Satellite-Based Comprehensive—Damage Assessment Report—Grande Anse, South, and Nippes Departments of Haiti (27 August 2021)," reliefweb, 27 August 2021.
38. Christopher Davis, "History as an Enemy and an Instructor: Lessons Learned for Haiti, 1915–1934," *Journal of Advanced Military Studies* 11, no. 1 (Spring 2020): 33, https://doi.org/10.21140/mcuj.2020110101.
39. "2020 Country Reports on Human Rights Practices: Haiti," U.S. Department of State Bureau of Democracy, Human Rights, and Labor, 30 March, 2021.
40. Davis, "History as an Enemy and an Instructor," 34.
41. Harold Isaac, Andre Paultre, and Maria Abi-Habib, "Haiti Braces for Unrest as Defiant President Refuses to Step Down," *New York Times*, 7 February 2021.
42. Angelo, "The Assassination of Haitian President Jovenel Moise."
43. Angelo, "The Assassination of Haitian President Jovenel Moise."

44.   Sam Bojarski, "Line of Succession Unclear Following Haiti President Moise Assassination," *Haitian Times*, 7 July 2021.
45.   Angelo, "The Assassination of Haitian President Jovenel Moise."
46.   Thomas, "Haiti's Elections Postponed after Electoral Council Dismissed."
47.   "Department of Defense Providing Air Transport in Support of USAID Haiti Earthquake Response," USAID, press release, 16 August 2021.
48.   SGC Victor Aguirre, "Unity of U.S. Government Efforts Bring Aid to Haiti after Earthquake," Homestead Air Reserve Base, 7 September, 2021.
49.   Aguirre, "Unity of U.S. Government Efforts Bring Aid to Haiti after Earthquake."
50.   "U.S. Military Support to Haiti Earthquake Relief," U.S. Southern Command, 3 September 2011
51.   Capt Annabel Monroe, "JTF-Bravo Redeploys After Support to JTF-Haiti," U.S. Southern Command, 17 September 2021.
52.   Aguirre, "Unity of U.S. Government Efforts Bring Aid to Haiti after Earthquake."
53.   Harold Isaac, "Haiti PM Flees under Gunfire as Haiti Rings in New Year," Associated Press, 3 January 2022.
54.   Jess DiPierro Obert, "Can Haiti's Gangs Help Build a Better Future for the Country?," *New Humanitarian*, 14 February 2022.

Staying First to Fight
Reaffirming the Marine Corps' Role in Foreign Humanitarian Assistance Missions

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Abstract: The U.S. Marine Corps' 2019 *Commandant's Planning Guidance* placed a dominant focus on modernizing the force to contest China within the Indo-Pacific region but deemphasized support to foreign humanitarian assistance missions. This article challenges the current framing of the Marine Corps' role in disaster response missions, specifically the notion that they are not a part of the organization's identity and that they detract from warfighting readiness. The case is made that U.S. military support to foreign humanitarian assistance missions will only grow, that the Marine Corps has and will have a role to play in these missions, and that participation in disaster relief operations improves their warfighting readiness.

Keywords: foreign humanitarian assistance, humanitarian aid, disaster relief, Marine Corps operations, U.S. Indo-Pacific Command, *Commandant's Planning Guidance*, *Force Design 2030*

The 38th Commandant of the Marine Corps' 2019 guidance shifted the strategic vision and future of the Marine Corps from a globally oriented, full range of military operations force, to an Indo-Pacific focused, naval expeditionary force optimized for conventional conflict.[1] Much of the scrutiny and support of the *Commandant's Planning Guidance* has focused on the wisdom of high-profile manpower and equipment changes and the dominant focus on China, but largely absent from the discussion is an analysis of the Marine

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Corps' envisioned role in foreign humanitarian assistance missions within U.S. Indo-Pacific Command.[2] This article addresses that gap by examining how the guidance frames the Marine Corps' ability to respond to natural disasters as a trade-off that comes at the expense of warfighting readiness. Under the sub-heading of "warfighting," the *Commandant's Planning Guidance* states that

> While we stand by to perform "such other duties as the President may direct," *foreign humanitarian assistance, disaster relief, and noncombatant evacuations do not define us—they are not our identity*. Rather, they are the day-to-day consequence of being the force-in-readiness. As the force-in-readiness, *we are not an across-the-ROMO [range of military operations] force*; but rather, a force that ensures the prevention of major conflict and deters the escalation of conflict within the ROMO.[3]

The goal of achieving "warfighting overmatch" within the U.S. Indo-Pacific Command is not only framed in opposition to the requirement to respond to natural disasters, but these humanitarian missions are dissociated from the identity of the Marine Corps.[4] The shift away from supporting foreign humanitarian assistance missions is a dramatic, if underappreciated, facet of the Corps' *Force Design 2030* efforts.

This article challenges current Marine Corps guidance that foreign humanitarian assistance missions are not part of Marines' identity and the implicit messaging that they detract from warfighting readiness. The scope is limited to missions within U.S.-Indo Pacific Command, given the preeminent focus of this theater in both national- and Service-level planning directives. To make this argument, existing Department of Defense (DOD) authorities for foreign humanitarian operations are first summarized, in addition to component- and theater-level guidance.[5] U.S. Indo-Pacific Command's unique requirements for disaster relief operations are then outlined, followed by three disaster relief case studies: Operation Tomodachi (Japan, 2011), Operation Damayan (Philippines, 2013), and Operation Sahayogi Saat (Nepal, 2015). The case study analysis reinforces the argument that the Marine Corps' participation in foreign humanitarian assistance missions *is* a part of its organizational identity and supports warfighting; criticisms of this claim are subsequently addressed. The desired end state is that foreign humanitarian assistance operations should be reaffirmed as an element of the Marine Corps' identity in future Corps planning guidance updates and reframed as relevant missions that support warfighting at a level below the threshold of armed conflict.

DOD Processes for Humanitarian Assistance and U.S. Indo-Pacific Command Considerations

The legal rationale for the DOD to execute disaster relief operations is complex but codified. The Foreign Assistance Act of 1961 provides the statutory authority for U.S. government agencies to provide foreign assistance, such as the

donations of foodstuffs on an emergency basis after a natural disaster.[6] *DOD Directive 5100.46, Foreign Disaster Relief (FDR)* goes one step further and clarifies DOD policy with respect to responding to foreign disasters, including the mandate to act as a supporting effort to the U.S. Agency for International Development (USAID) and to act at the direction of the president or at the request of another federal department or agency.[7] In time-sensitive emergencies, this directive allows military commanders to take prompt action to save lives in the event of an overseas disaster: a combatant commander can initiate relief operations for up to 72 hours during a crisis as long as host nation concurrence and U.S. chief of mission authority are granted. Doctrinally, *Foreign Humanitarian Assistance*, Joint Publication 3-29, outlines guidance and principles for the military to plan, execute, and assess foreign humanitarian assistance operations.[8] The DOD is thus not the lead for overseas disaster relief operations, but it has established legal and policy guidelines to support them.

Theater- and component-level guidance documents reaffirm the expeditionary nature and warfighting relevance of the U.S. military's support to foreign humanitarian operations. Unlike other combatant commands, environmental disasters are significant enough within U.S. Indo-Pacific Command that there is an entire organization devoted to coordinating DOD emergency responses, the Center for Excellence in Disaster Management and Humanitarian Assistance. The center's dominant role in coordinating disaster relief operations was confirmed by the combatant commander, who declared that it was a key element of their global engagement strategy in the region, including coordination with allies' and partners' militaries.[9] The Marine Corps' doctrinal publications state that overseas humanitarian assistance constitute a military expeditionary operation and that Marines are unique among the Services for being organized, equipped, and trained to accomplish this mission.[10] The previously stated laws, directives, and guidance documents demonstrate that Marines have well-established legal, doctrinal, and technical capabilities to support foreign humanitarian assistance missions.

The Marine Corps' disaster relief capabilities would seem fortuitous, since the need to respond to natural disasters in U.S. Indo-Pacific Command is growing, not decreasing. American defense and intelligence agencies all assess that globalization, urbanization, and climate change will pose complex challenges within the Indo-Pacific region and that mega disasters (super typhoons, great earthquakes, etc.) will increase in frequency.[11] Other studies note that, due to global climate changes and shifting demographics, Asia-Pacific populations are more likely to be impacted by natural disasters through death, displacement, and economic losses than other regions of the world.[12] Since the *Commandant's Planning Guidance* designated the III Marine Expeditionary Force (mostly forward deployed within Japan) as its main effort, Marines in this theater will bear the brunt of responding to these natural disasters, regardless of whether they are designated as "an across-the-ROMO force."[13] Given the criticality of the foreign humanitarian assistance mission set to U.S. Indo-Pacific Command,

the Marine Corps' doctrinal emphasis on supporting overseas humanitarian assistance missions, and the increasing likelihood of environmental disasters that necessitate relief, one would expect a correspondingly large amount of detail on the Marine's role in supporting that mission as part of its larger planning efforts.

Unfortunately, subsequent updates and refinements to the *Commandant's Planning Guidance* confirm the Marine Corps' organizational efforts to shift away from supporting overseas humanitarian operations. The *Force Design 2030* report simply restated the planning guidance comments that humanitarian assistance missions do not define the Marine Corps' identity and that they are of ancillary importance to warfighting.[14] The following year's annual update to *Force Design 2030* did not mention humanitarian assistance operations at all.[15] In one of the Marine Corps' newest doctrinal publications, the *Tentative Manual for Expeditionary Advanced Base Operations* (TM EABO), the only reference to disaster relief is a pro forma acknowledgment that both the new Marine Littoral Regiments and current Marine Expeditionary Units should consider "Coordinate Foreign Humanitarian Assistance" as a task.[16] While many of the changes in organization and structure for the Marine Corps are positive and reflect needed reforms to match burgeoning Chinese influence in the Pacific, the omission of detailed planning for major disaster operations is a significant shortfall. Foreign humanitarian assistance missions are relevant to warfighting and will become more, not less, frequent within the Indo-Pacific region. An examination of the Marine Corps' role in three major humanitarian aid missions over the past decade demonstrate the importance of these missions to Marine Expeditionary Forces, both in the past and for the future.

U.S. Indo-Pacific Command Foreign Humanitarian Assistance Case Studies

Operation Tomodachi—Japan, 2011

On 11 March 2011, a magnitude 9.0 earthquake struck off the eastern coast of Japan, with an epicenter approximately 80 miles east of the major city of Sendai.[17] This was the largest magnitude ever recorded in Japan and the world's third largest since 1900.[18] The massive, resultant tsunami—with a maximum wave height well above 100 feet—slammed into Japan's mainland and wreaked massive devastation. Estimates vary, but at least 15,550 people died, more than 130,000 were displaced, and at least 332,395 buildings were destroyed.[19] The damage and subsequent radiation releases of four of six nuclear reactors at the Fukushima Daiichi nuclear power plant exacerbated what was Japan's worst natural disaster since 1923.[20]

The U.S. and Japanese response to this disaster was swift and largely effective, in large part because most of the III Marine Expeditionary Force is based in Japan and could quickly respond. The U.S. Pacific Command initiated Operation Tomodachi ("friend[s]" in Japanese) and designated U.S. Forces Japan (USFJ) as the operational lead, with 7th Fleet, Fifth Air Force, U.S. Army

Forces Japan, and Marine Forces Japan in support.[21] At its peak, the military footprint was nearly 24,000 personnel, 189 aircraft, and 24 Navy vessels, including the 31st Marine Expeditionary Unit.[22] The Marine Corps' played a key role in this operation: within 48 hours, the "Dragons" of Marine Medium Helicopter Squadron 265 arrived in Atsugi, Japan, with eight helicopters that continuously ran supply missions to survivors.[23] The 31st Marine Expeditionary Unit immediately canceled a port visit and planned exercises in Indonesia and shifted to relief operations; by 25 March, they and the larger Essex Amphibious Ready Group had distributed more than 50,000 pounds of relief supplies to the Japanese.[24] Particularly noteworthy among this effort were the 15,000 pounds of relief supplies provided to the isolated inhabitants of Oshima Island (Miyagi Prefecture), hundreds of whom had been displaced and without utilities for nearly two weeks.[25] Marines from the 3d Marine Expeditionary Brigade comprised the core of the Joint force land component that provided aid during relief operations and were even supplemented by a chemical, biological, radioactive, nuclear (CBRN) response detachment that was mobilized because of the radiation leaks in Fukushima.[26] Though friction points arose from an initial lack of a common computer network linking the USFJ with their Japanese counterparts and over-classification impeding information sharing, these challenges did not derail the larger relief effort.[27] Indeed, the swiftness and effectiveness of the Marine Corps' role in supporting disaster relief operations was such that Brigadier General Craig Q. Timberlake would later state that "[Operation Tomodachi] has cemented our relationship . . . with the Japanese. It's helped to change the political scene here, the political environment."[28]

The positive impact on U.S.-Japanese relations and the historical significance of the Marines' contribution to Operation Tomodachi cannot be understated. For the first time, many Japanese people could see visible benefits of their alliance with the United States, as their self-defense forces executed a large-scale Joint relief operation with the U.S. military.[29] In the weeks after the earthquake, the U.S. favorability rating surged from 66 to 85 percent, reflecting the public's overall approval of the relief efforts.[30] The positive national polling in Japan helped offset longstanding grievances and more negative views of the U.S. military by the citizens of Okinawa, for whom the disproportionately large presence of Marines and the controversial Marine Corps Air Station Futenma are ongoing sources of friction.[31] At the national level, USAID and the Department of State used this positive momentum to launch a joint, public-private Partnership for Reconstruction, endorsed by then-Secretary of State Hillary R. Clinton and Vice President Joseph R. Biden Jr., improving U.S.-Japanese relations.[32] The goodwill remained even a decade later, when senior members of the Japanese Ground Self-Defense Force commemorated the Marines' deployment of CBRN forces and relief operations on Oshima Island.[33] The Marines' relief operations in Japan were noteworthy enough that memorabilia and artifacts from the response forces have been enshrined within the National Museum of the Marine Corps in Quantico, Virginia. Operation Tomodachi not only

strengthened the U.S.-Japanese military and diplomatic relationship, but it also indelibly defined the Marine forces who participated in it.

Operation Damayan—Philippines, 2013

Super Typhoon Haiyan made landfall in the central Visayan Islands in the Philippines on 8 November 2013, displacing 4.1 million people and killing more than 6,000.[34] With sustained wind speeds of more than 150 miles per hour, it was the strongest storm of 2013 and one of the most powerful typhoons of recorded history. As it approached the island of Leyte, the powerful winds pushed a 13-foot storm surge inland, wreaking havoc in the inland city of Tacloban.[35]

As with Operation Tomodachi, the timely request and forward-deployed presence of U.S. Marines saved lives. A formal request for support from the Philippine government was issued to the U.S. government on 9 November and, under the aegis of Operation Damayan ("to help each other"), a U.S. command operations center was established at Manila's Villamor Air Base, collocated with the headquarters for the Philippine Air Force.[36] U.S. Pacific Command assigned Marine Corps Forces Pacific to be the lead for coordinating military relief operations, and 3d Marine Expeditionary Brigade was again called to action, with its commander designated as the tactical mission lead.[37] By 10 November, the commanding general and a small number of other key staff were already deployed to the Philippines and deconflicting relief operations with the the Philippine armed forces and USAID.[38] The timely, decisive deployment of U.S. Marines ensured that when the Philippines' president Benigno Simeon Cojuangco Aquino III declared a state of national calamity on 11 November, the first USAID humanitarian relief supplies were already arriving at Tacloban.[39] U.S. Pacific Command activated Joint Task Force 505 five days later and the commander of III Marine Expeditionary Force, Lieutenant General John E. Wissler, assumed overall command of the relief mission, which continued until military operations ceased on 1 December 2013.[40] Noteworthy friction points that were identified were similar to those of Operation Tomodachi—some initial disaster relief correspondence was sent over the U.S. military's Secret Internet Protocol Router Network—resulting in delays and wasted time and effort because this classified network is not shareable with the majority of partners. Overall, however, the mission was a success with 13,400 U.S. military personnel, 12 naval vessels, and 66 aircraft providing more than 1,300 relief flights and evacuating more than 21,000 people.[41]

The U.S. military's response to Super Typhoon Haiyan was swift, effective, and strengthened already deep ties between the United States and the Philippines. The Marines and other U.S. military responders were praised for not only their quick response, but their effective partnerships with American civilian and Philippine responders.[42] A nongovernmental organization in the Philippines conducted a randomly sampled poll of 1,500 Filipinos in December 2013 asking them to rank their level of trust in several countries, and the United States ranked number one at 82 percent, followed by Australia (53 percent) and Japan

(47 percent).[43] This was the highest level of public support for the United States that had been recorded since the survey was started in 1994. Though the U.S. military played a secondary role behind the lead of USAID and the government of the Philippines, the speed and scope of delivering relief supplies could not have happened without it, facts favorably noted by both the U.S. president and Congress.[44] Given the centrality of the U.S. Marines' role in providing disaster relief during Operation Damayan and how important it was to the Filipino people, Marine Corps public affairs offices created two videos to highlight the one- and three-year anniversaries of the mission.[45]

Operation Sahayogi Saat—Nepal, 2015

On 25 April 2015, a magnitude 7.8 earthquake struck Nepal, causing landslides and avalanches throughout the Himalayas and destroying buildings in the capital, Kathmandu. The initial quake was followed by a series of aftershocks, causing 9,000 deaths, 22,000 people injured, and the loss of more than 600,000 buildings throughout the country.[46] Remote rural areas were particularly hard hit and the mountainous terrain throughout Nepal complicated relief efforts. Once again, Joint Task Force 505 was activated and deployed to Nepal as part of Operation Sahayogi Haat ("Helping Hand" in Nepali) in early May.[47]

Joint Task Force 505's support to Operation Sahayogi Haat was impactful and provided much-needed aid, but it also came at a steep cost for the Marine Corps. The III Marine Expeditionary Force commander was again designated as the overall force commander that was comprised of approximately 300 U.S. military personnel in Nepal, supported by the Joint Task Force 505 Main in Okinawa and an intermediate staging base in Thailand.[48] By 10 May, four Marine Corps Bell UH-1Y Venom helicopters, two Marine Corps Lockheed Martin KC-130J Hercules aircraft, and four Marine Corps Bell Boeing MV-22B Osprey tilt-rotor aircraft were forward deployed and supported relief efforts.[49] Sadly, on 12 May, one of the Marine Venom helicopters suffered a mishap, resulting in the deaths of six Marines, two Nepalese Army liaison soldiers, and five Nepalese civilians.[50] This tragic loss of life served as a reminder that the military's mission during disaster relief operations—while distinct from combat—is not without mortal risk. Despite this incident, the severe challenges posed by Nepal's mountainous terrain and the political friction from neighboring China and India, Joint Task Force 505 pressed on.[51] By the time of its deactivation on 26 May at the successful conclusion of its mission, the task force had worked with different countries to deliver 120 tons of relief supplies, transport 553 personnel, and conduct 69 casualty evacuations.[52]

Relations between the United States and Nepal, especially in the military domain, strengthened in the aftermath of Joint Task Force 505's humanitarian aid operations. Members of the U.S. Congress were briefed about how military-to-military engagements prior to the earthquake set conditions for the successful multinational, interagency response to the crisis.[53] Though detailed polling data of Nepalese public opinion on the disaster response is not available

to the same extent as with Japan and the Philippines, it is noteworthy that since the earthquake, Nepal has expressed interest in joining the United States' "State Partnership Program" and welcomed exchanges with the Utah National Guard.[54] The willingness to partner with American troops is noteworthy, given the political pressures Nepal faces as a buffer state between the two U.S. Indo-Pacific Command powerhouse states of China and India.

The most poignant symbol of the strengthened U.S.-Nepal ties as a result of the earthquake, however, was the dedication of "Vengeance Hall," the Heritage Room in the U.S. embassy's Marine house in Kathmandu.[55] Named in honor of the Marines and Nepalese soldiers and civilians who perished in the crashed Venom (call sign "Vengeance 01"), the room serves as a continuous reminder of the bond between the U.S. Marines and the Nepalese people.[56] Brigadier General Tracy W. King, the commanding general of 3d Marine Logistics Group, participated in the ceremony and noted that "everybody knows that we'll march to the sound of the gun. I think this proves that we'll also march to the sound of the crisis . . . if you call us again, we'll be there."[57]

Key Takeaways from Case Studies

The case studies presented here are not meant to provide best practices for how the Marines can better support foreign humanitarian assistance missions. A rich literature on this subject has already been published and restating others' recommendations does not advance understanding of the Marine Corps' role in disaster response.[58] Rather, the case study analyses are meant to inform the Corps' iterative planning and *Force Design 2030* efforts and to ensure that the essential role Marines play within U.S. Indo-Pacific Command's foreign humanitarian assistance missions is accurately accounted for. The case studies present three main takeaways.

First, foreign humanitarian assistance operations are absolutely a part of the Marine Corps' identity. *Identity*, for purposes of this article, refers to the cultural representation of the organization that the Marine Corps builds both for itself and projects to the outside world.[59] The Marines' effectiveness in responding to each emergency aligns with existing cultural values, namely that "Marines will be ready and forward deployed" and that "Marines are agile and adaptable."[60] These values are not only internally understood by Marines, but externally recognized by senior DOD policy makers who know that the Corps' expeditionary nature makes it uniquely qualified to support foreign humanitarian assistance missions.[61] The positive association of U.S. Marines with disaster relief operations within USPACOM extends at least as far back as the early 1990s, when grateful Bangladeshis welcomed the 5th Marine Expeditionary Brigade as "angels from the sea" following a deadly typhoon.[62] The Marine Corps therefore views itself, and is viewed by others, as an organization that is ready and capable of supporting overseas disaster relief missions.

The Marine Corps takes deliberate steps to highlight and preserve its identity as an organization uniquely capable of supporting disaster relief operations—

with the 2019 *Commandant's Planning Guidance* being a notable exception. The archiving of Operation Tomodachi memorabilia in Quantico, the public affairs videos of U.S. Marines supporting relief missions in the Philippines, and the commemoration of Vengeance Hall in Nepal all demonstrate the justifiable pride that Marines have in providing foreign humanitarian assistance. These operations align perfectly with General James N. Mattis's famous admonition to 1st Marine Division to show the world that "there is 'No Better Friend, No Worse Enemy' than a U.S. Marine."[63] To say that these missions are not a part of the Marines' identity clashes with decades of historical precedent, Marine Corps doctrine, and stakeholder opinions to the contrary.

The second takeaway is that foreign humanitarian assistance missions facilitate access, which is an essential prerequisite for the Marine Corps' warfighting capability within U.S. Indo-Pacific Command. The Marines' participation in disaster relief operations with two key theater allies, Japan and the Philippines, caused a surge in positive perceptions of the United States. While similar polling data is not available for Nepal, the fact that the country continues to welcome U.S. troops and advance discussions of participation in the State Partnership Program speaks volumes to the positive perceptions that Nepalese citizens have of the U.S. military.[64] While the warfighting payoff of these operations may not be immediately clear, the rapport and goodwill built from the Marines' participation in these operations builds the political cache required for the U.S. State Department to ensure access for Marine Corps forces, before and during the advent of hostilities.[65]

The perception of U.S. military forces abroad is relevant to warfighting, because of the broad, systemic factors that can support or impede basing privileges in host-nation countries.[66] Simply put, the deployment of U.S. Marines in expeditionary advanced basing operations requires that host-nation forces are predisposed to allow them access. Given the positive support that participation in disaster relief missions engenders, a Marine force that can support foreign humanitarian assistance missions throughout the Indo-Pacific theater stands a much better chance of gaining and maintaining access than one limited to a conventional combat deterrent presence. The Marine Corps' ability to support foreign humanitarian operations within U.S. Indo-Pacific Command is therefore inextricably linked to its warfighting readiness.

A final takeaway is that foreign humanitarian assistance missions provide relevant, real-world experience for U.S. Marines. While current Marine Corps guidance emphasizes wargaming and training for high-end conflict is important, "People in the military get tired of just training. They want to go somewhere and do something."[67] In the post–Cold War era, and before the decades of wars in Iraq and Afghanistan, the Army recognized that humanitarian aid missions allowed soldiers to exercise and refine wartime skills beyond generic exercises through the snap deployment of personnel, logistics, and communications equipment.[68] Similarly, Navy, Marine Corps, and Coast Guard tri-Service doctrine has repeatedly affirmed the value that overseas disaster response

operations have in achieving U.S. national security objectives and preserving maritime security.[69] Overseas humanitarian aid operations give Marines the invaluable opportunity to work in a Joint environment—in concert with other agencies and allies—during missions with life or death consequences, much in the same way that a joint/multinational force would have to stand up to contest China in the event of a kinetic conflict. The ability for Marines to identify friction points during these joint/bilateral disaster relief operations and test interoperability outside of preplanned exercises is therefore invaluable preparation for conventional conflict within U.S. Indo-Pacific Command, improving warfighting readiness.

Addressing Criticisms

One potential critique of this article is that it too enthusiastically endorses the Marine Corps' role in supporting humanitarian assistance missions. This is problematic because, as previously outlined, the Department of State and the Office of U.S. Foreign Disaster Assistance (within USAID) are the designated leads for the coordination of disaster response.[70] Moreover, the DOD's best practices for supporting overseas disaster relief operations clearly state that U.S. and "foreign military assets should be used as a last resort," not as a go-to force.[71] In a perfect world, then, the Marine Corps would not need to concern itself with disaster relief operations, because the principal actors would be the Department of State and USAID, in consultation with foreign governments and militaries.

The response to this criticism is that the Marine Corps should be ready to operate in the world as it is, not an idealized version of itself. It is true that USAID is and will continue to be the lead for any U.S. government response to a foreign natural disaster and that host nation forces should always be the first line of defense in responding to a natural disaster. Yet, the Marines, and the DOD more broadly, have significantly more resources to deal with natural disasters than USAID and many countries within U.S. Indo-Pacific Command and should, therefore, plan to assist during a major disaster. For comparison, the DOD's fiscal year (FY) 2021 budget request was a staggering $705.4 billion, dwarfing both the USAID FY 2021 budget request ($41 billion) and the 2020 gross domestic product (GDP) of Nepal ($33.657 billion).[72] The Marine Corps' forward-deployed posture and predominant focus in the Pacific, its doctrinal emphasis on expeditionary operations, and its access to amphibious, logistical supply chains make it uniquely qualified to support U.S. Indo-Pacific Command humanitarian aid missions.

The wisdom of Marines training early and often to support humanitarian aid missions with external organizations is borne from experience. The formal Joint after action review from Operation Sahayogi Haat stated that

> U.S. Pacific Command security cooperation engagements and capacity building exercises were vital in preparing the Nepal Army for its role during a major earthquake response. . . .

> [and that] the multi-year, pre-disaster planning effort led by Joint Task Force 505 (III Marine Expeditionary Force Command Element) provided situational awareness and positively influenced civil-military coordination. The Ambassador and U.S. State Department country team were familiar with the deploying commander and principal staff due to previous planning and senior leader activities.[73]

While the Marine Corps should not be the lead agency responsible for disaster relief operations, it is clearly a valuable and smart investment for Marines to plan for these missions before a catastrophe strikes.

Even in a supporting role, however, it is important to note that too much Marine Corps participation in foreign humanitarian aid operations risks militarizing the overall perception of U.S. aid. Overemphasizing the military's role in aid relief, or worse yet, withholding military aid to strong-arm foreign policy objectives, can generate resentment with partners and allies and should be avoided at all costs.[74] China's military made this mistake during their response to the Philippines' request for aid after Typhoon Haiyan. While the Chinese government ultimately dispatched a 300-bed hospital ship to support relief operations, it did not arrive until nearly two weeks after the typhoon made landfall.[75] The delay was widely attributed to prior Chinese-Philippine government disagreements about South China Sea sovereignty claims and painted the Chinese mission in a negative light.[76] Similarly, after the 2015 Nepal earthquake, China's contribution of more than 500 People's Liberation Army personnel, three helicopters, and eight transport aircraft to the relief effort was undermined by their subsequent refusal to coordinate relief efforts with other military forces. The Chinese intransigence was so disruptive to the relief mission that U.S. officials in Nepal ultimately had to reach back to officials in both Beijing and Washington to resolve the impasse.[77] The imperative for Marines to support overseas humanitarian operations in the Indo-Pacific region must therefore be limited and executed in consultation with USAID, the State Department, and host nation forces.

Fortunately, the potential pitfalls of militarizing foreign aid can be avoided. Both the United Nations (UN) and the Center for Excellence in Disaster Management and Humanitarian Assistance have handbooks that outline the best practices for military support to disaster relief missions.[78] Moreover, the case studies in this article demonstrate that the Marine Corps has a proven track record of executing humanitarian aid missions and should not shy away from supporting them in the future. On the contrary, a proactive effort by Marine commanders to facilitate civil-military coordination in advance of major disasters will ensure that Marines will continue to support these missions with minimal friction and that relief efforts are well-received by host nations.

A final criticism that bears addressing is that the Marine Corps—with the smallest share of the DOD budget—cannot afford to do humanitarian aid mis-

sions and deter or defeat China in the Pacific. The restructuring of the Marine Corps to defeat China's antiaccess/area-denial capabilities within U.S. Indo-Pacific Command means trade-offs, such as the divestment of some vertical-lift capabilities that could undercut the ability to provide logistics support during a humanitarian crisis.[79] Marine Corps leaders anticipate constrained defense budgets in the future and must make hard choices to prioritize the modernization of the force to defeat China in a conventional conflict.[80] Given limited time and resources, it is understandable that Marine Corps leaders may consider disaster relief missions in the Pacific as a costly distraction from preparing the force for full-scale conventional war with China.

There are three issues with this line of criticism. First, while the Marine Corps will lose some units/capabilities as part of its modernization efforts, future support to foreign humanitarian assistance missions does *not* have to look like it did in the past. Stating that the Marine Corps can either support warfighting or foreign humanitarian assistance is a false dichotomy that ignores the myriad ways that Marines can support both missions. For example, since the Marine Corps is divesting of some vertical-lift capabilities but expending more money to purchase unmanned aerial vehicles, these new unmanned systems could be leveraged during a future humanitarian crisis to provide imagery of stricken regions and locate survivors. Instead of ignoring or avoiding the inexorable requests to support disaster relief missions, the Marine Corps would be best served by planning now for how the *Force Design 2030* force can support disaster relief missions in new ways.

A second response to this criticism is that the Marine Corps' resources devoted to overseas humanitarian aid operations within the Indo-Pacific region are well spent, even if they seem separate from the current focus on conventional combat with China. The reality is that full-scale war for China and the United States is a mutually undesirable end state, so myopically focusing on high-end combat misses other areas for Marines to contest growing Chinese influence.[81] Future updates to planning guidance could more holistically consider the larger continuum of cooperation, competition, and confrontation with China.[82] In this framing, Marine Corps resources that go toward cooperation (e.g., working alongside the Chinese military to provide disaster relief in Nepal) are well-spent because they ensure a continued U.S. presence for friends and allies in the region and balance against China, whose military has begun to take a more assertive role in this space.[83] Any organizational resources allocated to a natural disaster response can therefore be justified as supporting the Marines' identity as a crisis response force and improving cooperation with allies and partners amid rising Chinese influence.[84]

Finally, and counterintuitively, studies and after action reports indicate that the best way for the Marine Corps to reduce the operational costs of participating in humanitarian operations is by early planning, not attempting to shed responsibility for the mission set.[85] Though it is beyond the scope of an unclassified article to analyze negative Marine Corps readiness impacts from

supporting foreign humanitarian aid operations in detail, a Naval Postgraduate School research report found that Marines could best improve the efficiency of disaster relief missions and reduce readiness impacts through early planning measures before a crisis.[86] These proactive steps include inviting humanitarian organizations to participate in unclassified planning sessions, developing communications contracts and protocols with allied and partner nations, and having a cadre of Marines trained in disaster response ready to serve as liaison officers within a larger international relief effort.[87] With these mitigation measures, the positive benefits that Marines will accrue from supporting real-world disaster relief operations will outweigh any short-term negative impacts that develop from using personnel and equipment to support foreign humanitarian assistance missions on short notice. Consequently, the best way for the Marine Corps to avoid readiness shortfalls from supporting overseas humanitarian aid missions is to lean in to planning for them, not to categorically avoid them in planning guidance.

Conclusion

The Marine Corps has a storied record of supporting foreign humanitarian aid missions within U.S. Indo-Pacific Command, operations that are part of its identity and that support its overall warfighting readiness. The legal and doctrinal rationales that allow for the Marines to serve in a supporting role in disaster response efforts—not the main effort—are established and have been used to support real-world missions. That the Marine Corps is not the lead agency responsible for foreign humanitarian assistance missions does not, however, obviate the need to train for these missions in coordination with USAID, the State Department, and foreign militaries. Advance preparation ensures a smoother response when disaster strikes and, in the realm of disaster relief operations, reducing delays can mean fewer lives lost. The tactical-level experiences Marines gain by supporting these missions and the operational and strategic advantages gained in improving access for the U.S. military throughout the Indo-Pacific region cannot be stressed enough. Supporting foreign humanitarian assistance missions is an integral part of the Marine Corps' identity and supports—not impedes—its warfighting capability within U.S. Indo-Pacific Command.

The Marine Corps' *Force Design 2030* efforts, while laudable for taking bold steps to modernize the force against China, should avoid the false dilemma of preparing for warfighting or preparing for humanitarian aid missions. This either/or binary is a framing too narrow for how the Corps can employ its finite resources and shortchanges the positive impact of disaster relief missions. As outlined in this article, humanitarian aid missions improve warfighting readiness by facilitating access for U.S. military forces and providing relevant real-world operational experiences for military personnel. Training and planning for humanitarian aid missions is therefore an enabler for overall warfighting readiness.

Ultimately, as the Marine Corps' posture and capabilities in the Indo-

Pacific region change to prepare for conventional conflict with China, the central role of Marines' support of humanitarian relief missions should remain constant. The nature of this support can and will change—the force of 2030 will be manned, trained, and equipped differently than the force of today—but the exigencies of climate change, demographics, and geography will keep this mission relevant. Ideally, future updates to *Force Design 2030* will acknowledge this reality and include more detail on the Marine Corps' role in supporting foreign humanitarian assistance missions.

Endnotes

1. *Force Design 2030* (Washington, DC: Headquarters Marine Corps, 2020), 1–2.
2. Noteworthy critiques include Jim Webb, "The Future of the U.S. Marine Corps," *National Interest*, 8 May 2020; and David Banning, "Azimuth Check on the Commandant's Planning Guidance," U.S. Naval Institute *Proceedings*, 1 April 2021. Noteworthy articles supporting the new guidance include T. X. Hammes, "Building a Marine Corps for Every Contingency, Clime, and Place," *War on the Rocks,* 15 April 2020; and Jim Lacey, "The 'Dumbest Concept Ever' Just Might Win Wars," *War on the* Rocks, 29 July 2019.
3. *Commandant's Planning Guidance: 38th Commandant of the Marine Corps* (Washington, DC: Headquarters Marine Corps, 2020), 9. Emphasis added by author.
4. Neither "warfighting" nor "warfighting overmatch" are explicitly defined in the *Commandant's Planning Guidance* or subsequent *Force Design 2030* guidance documents, but the latter can be inferred as the ability of a specific military force to have a decisive advantage in conventional manning, training, and equipment against an adversary.
5. Note: Marine Corps support to *domestic* natural disasters is deliberately omitted, as military operations on U.S. soil involve a complex array of legal authorities that are beyond the scope of this article to address. *Foreign humanitarian assistance* is defined as "DOD activities conducted outside the US and its territories to directly relieve or reduce human suffering, disease, hunger, or privation" and is used interchangeably with disaster relief, disaster response, and humanitarian aid in this article. Jennifer K. Elsea and R. Chuck Mason, *The Use of Federal Troops for Disaster Assistance: Legal Issues* (Washington, DC: Congressional Research Service, 2012); and *Foreign Humanitarian Assistance*, Joint Publication 3-29 (Washington, DC: Joint Chiefs of Staff, 2019), viii.
6. Foreign Assistance Act of 1961, Pub. L. No. 87-195, U.S. Statutes at Large 116-6 (2019), 155–57.
7. *DOD Directive 5100.46, Department of Defense, Foreign Disaster Relief (FDR)* (Washington, DC: Department of Defense, 2017), 1–2.
8. *Foreign Humanitarian Assistance*, i.
9. *U.S. Indo-Pacific Command Posture*, 117th Cong. (9 March 2021) (statement of Adm Philip S. Davidson, U.S. Navy commander, U.S. Indo-Pacific Command).
10. *Expeditionary Operations*, Marine Corps Doctrinal Publication (MCDP) 3 (Washington, DC: Headquarters Marine Corps, 1998), 2-7–2-9.
11. *Program Plan FY 19–23* (Joint Base Pearl Harbor–Hickam, HI: Center for Excellence in Disaster Management and Humanitarian Assistance, 2019), 3; *Expeditionary Operations*, 1–4; and *Annual Threat Assessment of the US Intelligence Community* (Washington, DC: Office of the Director of National Intelligence, 2021), 18–19.
12. *The Rise of Natural Disasters in Asia and the Pacific: Learning from ADB's Experience* (Mandaluyong City, Philippines: Asian Development Bank, 2013), vi, 4; *Asia-Pacific Disaster Report 2019* (Bangkok, Thailand: United Nations, 2019), 5; and Jonathan Woetzel et al., *Climate Risk and Response in Asia: Future of Asia* (New York: McKinsey Global Institute, 2020).
13. *Commandant's Planning Guidance*, 9.

14. *Force Design 2030*, 3.
15. *Force Design 2030—Annual Update* (Washington, DC: Headquarters Marine Corps, 2021).
16. *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC: Headquarters Marine Corps, 2021), B1–B3. Note: since this publication is a tentative manual, priorities could change, but the listing precedence puts an emphasis on new capabilities like strike and antiair warfare, while ignoring humanitarian aid concerns.
17. "Earthquake and Tsunami Near Sendai, Japan," Earth Observatory, 11 March 2011.
18. "On This Day: 2011 Tohoku Earthquake and Tsunami," National Centers for Environmental Information (NCEI), 11 March 2021.
19. "Today in Earthquake History," United States Geological Survey, accessed 27 September 2021.
20. Ken Buesseler, "FAQs: Radiation from Fukushima," Woods Hole Oceanographic Institution, accessed 27 September 2021.
21. Caroline R. Bechtel, "Learning to Learn: Military Learning in Disaster Relief Operations" (honors thesis, Wellesley College, April 2017), 59.
22. Jennifer D. P. Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region* (Santa Monica, CA: Rand, 2013), 86.
23. Sgt Paul Robbins Jr., "Dragons Return to Atsugi, One Year after Operation Tomodachi," Marines.mil, 28 April 2012.
24. 31st Marine Expeditionary Force Command Chronology (ComdC), 1 January 2011 to 30 June 2011, Headquarters Marine Corps, Washington, DC, 11–12.
25. LCpl Garry J. Welch, "Marines Deliver Relief Supplies to Japanese Affected by Earthquake and Tsunami," Marines.mil, 22 March 2011; and Eva-Marie Ramsaran, "Essex ARG Assists Oshima Island in Restoring Power," Navy.mil, 28 March 2011.
26. Yuki Tatsumi, *Great Eastern Japan Earthquake: "Lessons Learned" for Japanese Defense Policy* (Washington, DC: Henry L. Stimson Center, 2012), 3, 18.
27. Shuichi Wada, "Japan Chair Platform: Operation Tomodachi in Miyagi Prefecture: Success and Homework," Center for Strategic and International Studies, 23 December 2011.
28. Bechtel, "Learning to Learn," 61.
29. Shimodaira Takuya, "Japan-U.S. Joint Operation in the Great East Japan Earthquake: New Aspects of the Japan-U.S. Alliance," *JMSDF Staff College Review* 1, no. 2 (May 2012): 5.
30. Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, 86.
31. Wada, "Japan Chair Platform."
32. *Fiscal Year 2011 Joint Summary of Performance and Financial Information* (Washington, DC: Department of State/USAID, 2012), 27.
33. "Operation TOMODACHI: A Ten-Year Commemoration," Sasakawa USA, 3 March 2021.
34. "2013 Typhoon Haiyan: Facts, FAQs, and How to Help," World Vision, 9 November 2018.
35. Jeff Masters, "Super Typhoon Goni Slams into Philippines as Strongest Landfalling Tropical Cyclone on Record," Yale Climate Connections, 1 November 2020.
36. Thomas Parker et al., "The U.S. Pacific Command Response to Super Typhoon Haiyan," *Joint Force Quarterly* 82, no. 3 (July 2016): 55–56.
37. Note: U.S. Indo-Pacific Command was referred to as U.S. Pacific Command or PACOM until May 2018.
38. 3d Marine Expeditionary Brigade ComdC, 1 July 2013 to 31 December 2013, sect. 2.
39. Parker et al., "The U.S. Pacific Command Response to Super Typhoon Haiyan," 57.
40. Parker et al., "The U.S. Pacific Command Response to Super Typhoon Haiyan," 58.
41. Parker et al., "The U.S. Pacific Command Response to Super Typhoon Haiyan," 54.
42. Jon Ehrenfeld, Charles Aanenson, and Rosalie Arcala Hall, *Frameworks and Partnerships: Improving HA/DR in the Asia Pacific* (Seattle, WA: Peace Winds America, 2015), 171–72.

43.   Steven Rood, "Philippines to the World: Thanks for Haiyan Help," Asia Foundation, 29 January 2014.

44.   *Assessing the Response to Typhoon Yolanda/Haiyan*, 113th Cong. (19 November 2013); Jonah Blank, "How Philippines Typhoon Aid Helps USA," *USA Today*, 11 November 2013; and "Typhoon Haiyan/Yolanda Fact Sheet #22," USAID, 21 April 2014.

45.   "Typhoon Yolanda Commemoration (PH Narration)," Marines.mil, 20 November 2014; and "Stronger than Any Storm," Marines.mil, 6 October 2016.

46.   "2015 Nepal Earthquake: Facts, FAQs, and How to Help," World Vision, 3 April 2018.

47.   "Nepal Earthquake Relief Effort Named 'Operation Sahayogi Haat'," Department of Defense, 10 May 2015.

48.   CFE-DM, *A Brief Review of Military Response to the 2015 Nepal Earthquake: A Nepalese Army and U.S. Pacific Command Perspective* (JBPHH, HI: Center for Excellence in Disaster Management and Humanitarian Assistance, 2015), 10.

49.   "Nepal Earthquake Relief Effort Named 'Operation Sahayogi Haat'."

50.   "Bad Weather Caused Helicopter Crash in Nepal: US Marines," AFP, 7 November 2015.

51.   Robert B. Neller, *Observations, Insights, and Lessons: Marine Corps Operations from 2001 to 2016* (Quantico, VA: Marine Corps Center for Lessons Learned, 2017), 101.

52.   *A Brief Review of Military Response to the 2015 Nepal Earthquake*, 12.

53.   *Everest Trembled: Lessons Learned from the Nepal Earthquake Response*, 114th Cong. (20 May 2015).

54.   Anil Giri, "Nepal Is Positive about Being Part of State Partnership Program under Indo-Pacific Strategy, Minister Tells Visiting US Official," *Kathmandu Post*, 6 December 2019; and Jaime Thomas, "Utah National Guard Delivers Humanitarian Aid to Nepal," Utah National Guard, 25 August 2021.

55.   Jeremy Vought, "Fallen Marines in Nepal Helicopter Crash Honored at U.S. Embassy in Kathmandu," dividshub.net, 6 November 2015.

56.   To the casual reader, the U.S. embassy memorial in Nepal and the previously mentioned National Museum of the Marine Corps' Tomodachi exhibit may seem trivial, but they are relevant to this discussion. The memorabilia that ambassadors choose to showcase—or not—sends clear messages to the host nation. Any diplomat or locally employed staff visiting/working in the embassy will see a poignant reminder of the Marine Corps' role and sacrifice during a major natural disaster, which is impactful given the political challenges of access in a country like Nepal that borders China and India. Similarly, the Tomodachi exhibit serves as a visual contradiction of the 2019 *Commandant's Planning Guidance* (CPG) statement that "foreign humanitarian assistance, disaster relief, and noncombatant evacuations do not define us—they are not our identity." The prominent showcasing of this humanitarian assistance and disaster response memorabilia indicates that these missions *are* important parts of Corps' identity.

57.   Vought, "Fallen Marines in Nepal Helicopter Crash Honored at U.S. Embassy in Kathmandu."

58.   *Civil-Military Coordination in Foreign Disaster Relief: Best Practices for Affected and Assisting States* (JBPHH, HI: Center for Excellence in Disaster Management and Humanitarian Assistance, 2021), 1–16; and "Humanitarian Civil-Military Coordination," United Nations Office for the Coordination of Humanitarian Affairs, 25 February 2022.

59.   Neither the *Commandant's Planning Guidance* nor *Force Design 2030* define "identity," so this definition borrows from existing scholarship on identity, from both political science (Fearon) and social psychology (Chryssochoou). James D. Fearon, "What Is Identity (as We Now Use the Word)?," draft (Stanford, CA: Stanford University, 1999); and Xénia Chryssochoou, "Studying Identity in Social Psychology: Some Thoughts on the Definition of Identity and Its Relation to Action," *Journal of Language and Politics* 2, no. 2 (January 2003): 225–41, https://doi.org/10.1075/jlp.2.2.03chr.

60.   S. Rebecca Zimmerman et al., *Movement and Maneuver: Culture and Competition for*

Influence Among the U.S. Military Services (Santa Monica, CA: Rand, 2019), 103, https://doi.org/10.7249/RR2270.

61. Stephen M. George and Jason S. Harbison, "Evaluation of Gaps to Understand Needs for HA/DR: A Case for USMC Readiness Metrics" (thesis, Naval Postgraduate School, Monterey, CA, March 2018), 76–77.

62. Dilip Ganguly, "To Bangladeshis, Marines Are 'Angels from the Sea'," AP, 16 May 1991.

63. "No Better Friend, No Worse Enemy," *Leading Blog*, 11 September 2019.

64. "NRNA-America Sends 31.6 Million Worth of Medical Supplies to Nepal on Behalf of US Government," Khabarhub, 30 August 2021; and *Indo-Pacific Strategy Report* (Washington, DC: Department of Defense, 2019), 36.

65. George J. David, "Making It Work: Force Design 2030 and Access," *Marine Corps Gazette* 104, no. 10 (October 2020): 48.

66. Kent E. Calder, *Embattled Garrisons: Comparative Base Politics and American Globalism* (Princeton, NJ: Princeton University Press, 2007), 236.

67. Robert B. Neller, "A Plan for China," LinkedIn, 31 January 2021.

68. Paul A. McCarthy, *Operation Sea Angel: A Case Study* (Santa Monica, CA: Rand, 1994), 23.

69. *Maritime Security Cooperation: An Integrated Navy-Marine Corps-Coast Guard Approach* (Washington, DC: Department of Defense, 2013), 8; and *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power* (Washington, DC: Department of Defense, 2020), 7.

70. *Foreign Humanitarian Assistance*, vii.

71. *Civil-Military Coordination in Foreign Disaster Relief*, 4.

72. "GDP (Current US$)—Nepal Data," World Bank, accessed 21 September 2021; "DOD Releases Fiscal Year 2021 Budget Proposal," Department of Defense, 10 February 2020; and "Fiscal Year 2021 Development and Humanitarian Assistance Budget Request," USAID, accessed 15 September 2021.

73. *U.S. Pacific Command Operation Sahayogi Haat Joint After Action Report Executive Summary* (JBPHH, HI: Center for Excellence in Disaster Management and Humanitarian Assistance, 2016), 1–2.

74. *Humanitarian Civil-Military Coordination*, 17; and Joyce Blanchard and Adrian Duaine, *Department of Defense Support to Foreign Disaster Relief: Handbook for Responding Forces* (Honolulu, HI: Center for Excellence in Disaster Management and Humanitarian Assistance, 2021), 4-10, 6-2, 6-3.

75. Matthew Southerland, *The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief: Contributions and Concerns* (Washington, DC: U.S.-China Economic and Security Review Commission, 2019), 7.

76. Southerland, *The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief*, 7.

77. Southerland, *The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief*, 5, 10.

78. *Civil-Military Coordination in Foreign Disaster Relief*; and *Humanitarian Civil-Military Coordination*.

79. Terje Bruøygard and Jørn Qviller, "Marine Corps *Force Design 2030* and Implications for Allies and Partners: Case Norway," *Journal of Advanced Military Studies* 11, no. 2 (Fall 2021): 204, https://doi.org/10.21140/mcuj.20201102010.

80. *Statement of General David H. Berger on Fiscal Year 2021 Department of the Navy Budget Before the House Defense Appropriation Subcommittee*, 116th Cong. (4 March 2020), 1–5.

81. David C. Gompert, Astrid Stuth Cevallos, and Cristina L. Garafola, *War with China: Thinking Through the Unthinkable* (Santa Monica, CA: Rand, 2016), 3, https://doi.org/10.7249/RR1140.

82. Neller, "A Plan for China."

83. Southerland, *The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief*, 2.

84. *Making Peace While Staying Ready for War: The Challenges of U.S. Military Participation in Peace Operations* (Washington, DC: Congressional Budget Office, 1999), 48.

85. Neller, *Observations, Insights, and Lessons*, 99; *U.S. Pacific Command Operation Sahayogi Haat Joint After Action Report Executive Summary*, 1–2; and *Foreign Humanitarian Assistance and Disaster Relief: Operation Damayan Support to the Republic of the Philippines after Typhoon Haiyan in November 2013* (Quantico, VA: Marine Corps Center for Lessons Learned, 2014), 25.

86. George and Harbison, "Evaluation of Gaps to Understand Needs for HA/DR," 84.

87. George and Harbison, "Evaluation of Gaps to Understand Needs for HA/DR," 80–84.

The German Military Response to National Disasters and Emergencies
A Case Study of the Flooding in the Summer of 2021

Dominik Juling

Abstract: In the summer of 2021, a flood of unprecedented intensity occurred in Western Europe. This article describes the German crisis response mechanism to natural disasters with a focus on the deployment and tasks of the German Armed Forces and analyzes challenges and controversies connected with the internal use of the military in Germany after the flood.
Keywords: Germany, *Bundeswehr*, flood, natural disaster, disaster response

Introduction

In mid-July 2021, severe storms with very heavy rainfall hit Western and Central Europe. Germany and Belgium were particularly affected. In 2 of the 16 German states, the effects of the severe rainfall event were most extreme and a total of 180 people died in Rhineland-Palatinate and North Rhine-Westphalia.[1] This is the highest number of victims of a natural disaster in Germany for almost 60 years and many times higher than the number of victims of the so-called flood of the century in Germany in 2002. The insurance group Aon estimates that the provisional economic loss in Germany will be around $20 billion USD and that the event in all of Europe would cost around $25 billion USD. This would make the natural disaster the most expensive in European history.[2] The German Insurance Association estimates the insurance losses at about $8 billion USD.[3] Analysis of satellite data shows that in the worst-hit valley in Germany, more than 70 percent of all buildings were damaged by the flood; more than 450 buildings were almost completely destroyed. About 110 miles of traffic routes were damaged and power, water, and communications

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were disrupted over large areas.[4] Experts attribute the unprecedented event in Germany's recent history to local factors in the regions that were particularly hard hit, as well as to the influence of global anthropogenic climate change.[5]

When the extent of the damage, which was tremendous compared to prior disasters in Germany, became apparent on 14 July 2021, the first requests for assistance from the German Armed Forces (*Bundeswehr*), were received.[6] Their helicopters, trucks, combat engineering vehicles, and auxiliary bridges could subsequently be seen in many press pictures and live coverage.[7]

The following article describes in more detail how Bundeswehr operations in the interior of Germany are regulated, how they are conducted, and what the Bundeswehr did as a response to the 2021 flood disaster. The article is written with primarily descriptive intent to introduce readers unfamiliar with the German military disaster relief response system to the important mechanisms and its elements. In addition, the text is interesting for readers who want to compare the German system with that of other countries or work out how a country's armed forces could develop better disaster-relief operations. As a guiding research question, toward the end of the text, it is discussed how the German domestic military disaster relief system presents challenges and causes controversies. Throughout the text, reference is made to the flood disaster of 2021 as a consistent example.

Important Systemic Fundamentals of Germany

To understand how the German Armed Forces respond to environmental disasters, it is necessary to provide a brief insight into the organizational structure of the German state.

Federalism

Foundationally, Germany is federally organized. The city of Berlin is the capital of the federal republic. The federal parliament in Berlin is called the *Bundestag*. Also, each of the 16 federal states has its own parliament, as well as its own government. The states are each organized into smaller districts. Germany has a total of 401 county districts and city districts, of which the county of Ahrweiler in the far west of Germany was the hardest hit by the flood. The German constitution grants significant autonomy to the states and their parliaments. Since the elections at the federal level in September 2021, six major factions are represented in the German parliament, of which three form the new government. The new federal chancellor is Olaf Scholz. All 16 states hold their own elections and form their own governing coalitions. For the representation of the 16 states at the federal level, there is the *Bundesrat* in Berlin.[8]

German Armed Forces

The important role of the federal parliament if the German military is to be used is also reflected in the fact that the Bundeswehr, founded in 1955, are a so-called parliamentary army. For example, a simple majority in parliament is

needed for missions outside the state's borders. To declare a state of tension or a state of defense, a minimum of a two-thirds majority is needed. For the declaration of a national state of defense, the additional consent of the Bundesrat is also required. In peacetime, the federal minister of defense does command the Bundeswehr; in the event that Germany is directly attacked with armed forces or such an attack is imminent, command is transferred to the chancellor of Germany. The responsibilities of the police for internal security and the Bundeswehr for external security are strictly separated in Germany. This, as well as the comprehensive control of the military by the federal government and the federal parliament, are lessons from the terrible period of National Socialism in Germany. The army may only operate within Germany in three cases, while only two of them apply in relation to disaster relief. The first option is called administrative assistance and is governed by Article 35 of the constitution.[9] This article states that, if necessary, all federal and state authorities shall assist each other. However, no weapons of war or other equipment perceived to be potentially threatening may be used in the procedure.[10] Counties, cities, and states can submit requests for assistance from the Bundeswehr and other authorities, but not all requests are always accepted. Requests can be rejected, for example, if the effort is disproportionate, no capacities are available, or the assistance would violate the law.

This first path can be taken without major hurdles and, for example, unarmed soldiers were deployed to help register refugees in 2015 and 2016, at the onset of the COVID-19 pandemic, and during minor flooding or heavy snowfall because the Bundeswehr can provide flexible personnel assistance and heavy equipment. In locally overburdened areas, both are often not sufficiently available. The second legal option is also relevant to the subject of this article. This is disaster response under Article 35, sentence 2, of the German Constitution.[11] This situation only arises if there is a recent disaster on a large scale that requires all available resources. In the Ahr valley, action had to be taken as quickly as possible to find missing persons and the normal procedure of requesting assistance would have taken too long. Since 2012, the Bundeswehr has theoretically also been allowed to use lethal force as a last resort in Germany during a disaster operation, but this has very high hurdles and has never been used so far.[12] An irregular disaster operation is not intended to be continuous, which is why the normal procedure of requesting administrative assistance is to be implemented as soon as the situation allows it. In general, Bundeswehr operations in the interior are to have a short duration and serve only to bypass civilian shortfalls.

Important Military Entities and Their Responsibilities
German Armed Forces
The German Armed Forces and their role during disaster relief are the main subject of this article. In the following, the elements within the Bundeswehr that are relevant for disaster relief are outlined.

Facts and Figures

The Bundeswehr has a total of 182,000 active soldiers and 83,000 civilian employees.[13] The share of active soldiers in the total population of 83.1 million is 0.22 percent, which is rather small in Europe as a whole. There is a reserve of about 30,000 former members of the armed forces. There has been no compulsory military service since 2011. At times during the flood disaster, 2,327 soldiers were deployed.[14]

The Bundeswehr has the following vehicles and helicopters that are important in the event of natural disasters. It operates 30 amphibious floating bridges, about 600 earthmovers, 50 heavy towing vehicles, 2,000 armored transport vehicles and protected transporters, 70 armored recovery vehicles, 7,000 unprotected transporters, and 500 mobile cranes. The Bundeswehr also operates around 100 medium-lift helicopters and 37 light helicopters.[15] The land vehicles and most of the helicopters are subordinate to the German Army. In addition, there is the German Navy, the German Air Force, the Joint Support Service branch, the Joint Medical Service branch, and the Cyber and Information Space branch. During the flood disaster, more than 300 standard vehicles, 167 special-purpose vehicles, 13 helicopters, 12 boats, and 47 fire engines and ambulances of the German Armed Forces were deployed in the affected areas.[16]

Federal Ministry of Defense (*Bundesministerium der Verteidigung*)

The supreme military authority in Germany is the Federal Ministry of Defense, which is based in Berlin and Bonn. In the event of a crisis, the ministry takes only limited action; rather, it serves as the overarching administrative structure for the relevant subdivisions and organizational units. It is on the same level as the Ministry of the Interior, which coordinates civil defense. The two ministries work closely together on civil-military coordination and division of tasks.[17]

Reserve Force

In Germany, it is relatively common for some of the 30 regional homeland defense companies to be activated in the event of disasters. These companies consist of reservists, led by experts, and support the Bundeswehr or civilian agencies in dealing with exceptional situations or in securing military installations. Theoretically, every reservist can volunteer to be part of an activated homeland defense company, if their actual job duties allow it. Reservists from several local companies were also called up during the floods in summer 2021.[18] In the future, the Bundeswehr plans to massively increase its reserve to 100,000 soldiers.[19]

State Command (*Landeskommando*)

The state commands mentioned above are the points of contact for requests for support services from the respective state government. There is one in each of the 16 states. The command is responsible for regional planning of active military forces and reservists, as well as for coordination with the civilian crisis staff.

But even before a potential disaster strikes, the state command plans, practices, and prepares for seamless cooperation with civilian partners. There were 185 requests for emergency aid submitted in connection with the summer floods.[20] The responsible state commands review and bundle the requests before issuing an order to the troops.

Liaison Commands (*Verbindungskommando*)

A liaison command has the explicit mission of establishing and maintaining communication between military entities and civil-military cooperation. Such a command can also be formed in the event of a disaster, for example. Each state command has a liaison command to each German district and county. In the event of a local emergency, contact and initial communication usually proceeds through the liaison officer in charge.

Homeland Defense Service
(*Freiwilliger Wehrdienst im Heimatschutz*)

Since 2020, there has been a pilot project in Germany regarding disaster response. Since 2011, there has no longer been compulsory military service, but voluntary military service can still be completed. With the voluntary military service in homeland defense since 2020, there is also the possibility of undergoing three months of basic training close to home and then four months of special training and subsequent integration into the regional homeland defense company. The main task of the soldiers trained in this program is to provide support in the event of disasters of all kinds; there is no provision for deployment abroad.[21] Part of the seven months of special training include, among others, firefighting, operating pumps, object protection, setting up checkpoints, paramedic training, and chemical/biological/radiological and nuclear-defense training.[22]

Territorial Tasks Command (*Kommando Territoriale Aufgaben*)

Furthermore, there is the Territorial Tasks Command, which is subordinate to the Joint Support Service branch. Since its establishment in 2013, it has been responsible for grouping possible Bundeswehr tasks within Germany and for maintaining and practicing Bundeswehr capabilities in disaster relief.[23]

Other Relevant Commands and Units

In the event of natural disasters, the Medical Command (*Zentraler Sanitätsdienst der Bundeswehr*) is also involved. Together with the civilian medical response teams, it tries to get to the scene of the disaster as quickly as possible. The Bundeswehr is not usually one of the first responders, but it does have the ability to set up large field hospitals and mobilize a large number of rescue helicopters. The Logistics Command (*Logistikkommando der Bundeswehr*) is important for supplying the soldiers and civilian population involved. In the aftermath of the 2021 flood, for example, the command distributed 331,500 bottles

of water, 58,000 meals ready to eat, and 3,058 tons of other supplies.[24] The pioneer battalion (*Pioniertruppe*) is responsible for building temporary bridges and ferries and repairing transportation routes and energy systems, which proved very important in the Ahr valley, where dozens of bridges were destroyed. Also important is the Central Search and Rescue Unit of the Bundeswehr (*Such-und Rettungsdienst der Bundeswehr*). The control center for the whole of Germany is located in Münster and accepts requests for assistance in emergency situations at any time. The requests can range from flying out an accident victim to major natural disasters such as the one in the summer of 2021.[25]

Military Response to the 2021 Flood Disaster in Germany

In Germany, massive amounts of rain had been falling since around 12 July 2021, and it was already apparent on 14 July that there would be severe flooding in some regions. Also on 14 July, most emergency mechanisms were activated and requests for official assistance were issued. The magnitude of the disaster quickly became apparent, leading the then-acting defense minister to sound the military disaster alert on 16 July to send additional response forces and vehicles.[26] Important for the entire operation was the Bundeswehr's unique ability to deploy temporary bridges and clear logistic routes in a short time, as well as the large-scale use of Bundeswehr helicopters for air transport and rescue. Within three days, seven Bundeswehr temporary bridges had already been built in the hard-hit Ahr valley. In the days following the disaster, the Bundeswehr was also able to restore communications networks by means of satellite communications and installed three mobile drinking water treatment plants. Of the more than 2,000 soldiers originally deployed, only 86 were still on site at the end of August, and the inland deployment was officially over on 31 August 2021.[27]

The remaining tasks were handed over to the civilian organizations and forces on the ground. Now, the familiar scheme of individual, local, and selective applications for official assistance, which are submitted and examined via the system described earlier in the text, applies again.

Challenges and Controversies

The procedures during and after the disaster were described as satisfactory by most stakeholders. Only the lack of unbureaucratic and rapid financial aid and the lack of heavy equipment for civilian protection forces were criticized. In some places, civilian rescue forces had to wait for the Bundeswehr to clear roads.[28]

Furthermore, in crisis situations, there are sometimes confusions of responsibility, since the civilian Federal Agency for Technical Relief (*Technisches Hilfswerk*), in particular, also has heavier equipment at its disposal and often pursues similar tasks to those of the Bundeswehr, which is called in to provide assistance. In the case of the Ahr valley, the destruction was so great that both

the Bundeswehr and the Federal Agency for Technical Relief had similar areas of operation, and the superior civil-military coordination worked well.[29]

However, particularly against the backdrop of the massive increase in symmetrical threats to North Atlantic Treaty Organization (NATO) allies, Bundeswehr representatives frequently point out that the core task of the Bundeswehr is still national and alliance defense and not the continuous fight against disasters.[30]

It also made headlines that German right-wing extremist and conspiracy theory groups and actors were distributing disaster-related misinformation and were operating on the scene. There was a fake deployment order for reservists to support the "support center" of the radical actors. In this respect, the German Armed Forces investigated a retired Bundeswehr colonel.[31]

Another major aspect of the public debate is the reputation of the Bundeswehr in Germany in general, as well as the public debate about domestic deployments of the Bundeswehr. As described earlier, responsibilities for armed operations within Germany are clearly assigned to the police. However, especially since the 11 September 2001 attacks in the United States, there have been debates about the possibility of using the armed forces to support domestic operations as a last resort, as is now enshrined in law.[32] Currently, there are debates about being able to deploy an armed Bundeswehr more domestically, which is drawing a lot of criticism.[33]

Overall, about four out of five Germans surveyed in 2020 have a positive attitude toward the Bundeswehr. The increase of around 6 percentage points compared with the previous year is attributed, among other things, to administrative assistance in the COVID-19 pandemic. The assistance provided during the floods is also expected to have a positive impact on the image of the Bundeswehr. According to their own statements, 85 percent of Germans trust the Bundeswehr in 2020. This represents a new high.[34] Another study from the first half of 2021 indicates that 70 percent tend to trust the Bundeswehr and 21 percent tend not to trust it. Compared with previous years, this figure is around average.[35] In general, the relationship of the German population to the Bundeswehr can be described as rather distant. Military patriotism is only widespread in a few population groups, and then not tendentially among young people. This ambiguous trust of society in the Bundeswehr is evident not only in the debate about possible armed operations within the borders but also in unarmed support of the Bundeswehr in the interior. For example, in the summer of 2020, there was a situation in which two elected regional governments of Berlin districts did not want to accept soldiers to support the overburdened local health department during the COVID-19 pandemic. The left-leaning local governments refused to cooperate with the Bundeswehr, despite the fact that the soldiers were merely supposed to carry out testing and track infections.[36]

Outlook and Implications

It can be said that the floods in the summer of 2021, especially in Germa-

ny, were an unprecedented event that had a profound effect on the structures responsible for disaster management. Almost half a year after the flood, the clean-up and reconstruction work is still in full swing; many houses had to be completely demolished. In particular, often ineffective early warnings and the lack of evacuations in many places have been used as an opportunity to improve and rethink existing systems and procedures.

The deployment of the German Armed Forces in the affected areas was of fundamental importance. With regard to climate change, the disaster gave further impetus to the debate on strengthening the disaster response capabilities of the Bundeswehr, which has been going on for more than 20 years. It is unclear whether the Bundeswehr will focus more on disaster management in the future or whether it will increasingly return to its core task of defending the country and its alliances. At the same time, the role of the Bundeswehr in German society remains vague and more ambivalent than in other countries. This reservedness at the domestic level also has a not insignificant influence on further possible deployments for domestic military assistance.

Further research could focus on the conclusions that can be drawn from the challenges of the Ahr valley and the controversies surrounding the use of the military within Germany. Furthermore, it makes sense to compare the individual military disaster response systems of selected countries for multinational disaster relief.

Endnotes

1. "Ahr-Flutgebiet: Spendenrekord nach Katastrophe," Echo-Online, 2 December 2021.
2. "July Global Recap IF 2021," Aon, July 2021, 7.
3. "Versicherungsschäden durch Flutkatastrophe bei rund Sieben Milliarden Euro," Gesamtverband der Deutschen Versicherungswirtschaft, 25 August 2021.
4. Johannes Schmid-Johannsen, Ulrich Lang, and Nico Heiliger, "Noch 2 Vermisste—Aktuelle Daten und Fakten," Südwestrundfunk, 24 November 2021.
5. "Hydro-klimatologische Einordnung der Stark-und Dauerniederschläge in Teilen Deutschland sim Zusammenhang mit dem Tiefdruckgebiet 'Bernd' vom 12. Bis 19. Juli," Deutscher Wetterdienst, 22 July 2021. "Heavy Rainfall which Led to Severe Flooding in Western Europe Made More Likely by Climate Change," World Weather Attribution, 23 August 2021.
6. "Bundeswehr half nach Überschwemmungen," Bundeswehr, 12 August 2021.
7. "Im Tal der Tränen," Welt, 25 July 2021.
8. "Föderalismus und Kommunalwesen," Bundesministerium des Inneren und für Heimat, accessed 23 March 2022.
9. Basic Law for the Federal Republic of Germany, Article 35.
10. Elisabeth Kagermeier, "Wann darf die Bundeswehr im Inneren eingesetzt werden?," BR, 3 October 2020.
11. Basic Law of the Federal Republic of Germany, Article 35.
12. "Wann darf die Bundeswehr im Inneren eingesetzt werden?"
13. "Personalzahlen der Bundeswehr," Bundeswehr, October 2021.
14. "Hilfe in der Not: Bundeswehr im Einsatz in den Hochwassergebieten," Bundeswehr, September 2021.
15. *Bericht zur materiellen Einsatzbereitschaft der Hauptwaffensysteme der Bundeswehr II/2020* (Bonn, Germany: Bundesministerium der Verteidigung, 2020).

16. "Hilfe in der Not."
17. "Nationale Krisenvorsorge der Bundeswehr," Bundeswehr, accessed 23 March 2022.
18. Jasmin Dikov, "Reservisten unterstützen bei der Hochwasserhilfe in Hagen und Euskirchen," Bundeswehr, 26 July 2021.
19. " 'Freiwilliger Wehrdienst im Heimatschutz' geht in die nächste Runde," Bundeswehr, 16 June 2021.
20. "Hilfe in der Not."
21. "Heimatschutz: Neuer freiwilliger Wehrdienst gestartet," Bundesministerium der Verteidigung, 6 April 2021.
22. Thomas Sauer, "Freiwilliger Wehrdienst im Heimatschutz geht in die nächste Runde," reservistenverband.de, 16 June 2021.
23. "Bundeswehr schafft neues Kommando Territoriale Aufgaben," *Welt*, 1 January 2013.
24. "Hilfe in der Not."
25. "Leitstelle des Such-und Rettungsdienstes (land) der Bundeswehr," Bundeswehr, 2021.
26. "Rur-Damm in Ophoven gebrochen," *Spiegel*, 2021.
27. "Katastrophenhilfe: Bundeswehr beendet Hochwassereinsatz," Bundeswehr, 2021.
28. "VG-Bürgermeister Trier-Land kritisiert mangelhafte Ausstattung Katastrophenschutz," Südwestrundfunk, 16 July 2021.
29. "Hand in Hand läuft die Hilfe in den Hochwassergebieten," Bundeswehr, 25 July 2021.
30. "Katastrophenhilfe."
31. "Bundeswehr ermittelt gegen 'Querdenker' in Uniform," *Spiegel,* 5 August 2021.
32. Wilhelm Knelangen and Jan C. Irlenkaeuser, *Die Debatte* über *den Einsatz der Bundeswehr im Inneren*, Kieler Analysen zur Sicherheitspolitik Nr. 12 (Kiel, Germany: Institut für Sicherheitspolitik an der Christian-Albrechts-Universität zu Kiel, 2004).
33. "Bundeswehr/Viel Kritik an möglichen Inlandseinsätzen," Deutschlandfunk, 12 April 2016.
34. "Bevölkerungsumfrage 2020: So steht Deutschland zur Bundeswehr," Bundesministerium der Verteidigung, 1 March 2021.
35. "Umfrage in Deutschland zum Vertrauen in die Bundeswehr 2021," Statista Research Department, 12 October 2021.
36. "Kritik an Ablehnung der Bundeswehr Hilfe wächst," Rundfunk Berlin-Brandenburg, 1 October 2020.

Forecasting Iranian Government Responses to Cyberattacks

Austen Givens, PhD; Nikki Sanders; and Corye J. Douglas

Abstract: Extant scholarship on Iranian cyber warfare emphasizes the ways in which Tehran's cyber capabilities might be employed offensively to achieve its foreign policy objectives. Comparatively little attention, however, has been given to the ways in which Iran might leverage these same cyber assets in retaliatory strikes. This article argues that because of the unique combination of endogenous and exogenous variables affecting contemporary Iran, including diplomatic isolation and economic sanctions, as well as Iran's historical track record of carrying out its foreign policy through proxies, Iranian cyber retaliation is likely to be executed through third parties, mostly symbolic in nature, and proportionate in scale.

Keywords: cybersecurity, retaliation, defense, Iran, sanctions, cryptocurrency

On 3 January 2020, a missile fired from a U.S. unmanned aerial vehicle (UAV) killed Major General Qassem Soleimani, the head of Iran's Islamic Revolutionary Guard Corps (IRGC), a U.S. State Department-designated terrorist organization, at Baghdad International Airport in Iraq.[1] One of the main worries that arose in the United States within days of Soleimani's killing was that Iranian retaliation for his death would come not in the form of kinetic attacks, such as terrorist bombings, but virtually, through cyberattacks.[2] In the weeks following Soleimani's death, the U.S. De-

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partment of Homeland Security (DHS) and Federal Bureau of Investigation (FBI) issued alerts for American businesses to be extra vigilant for the possibility of Iranian-sponsored cyber intrusions and disruptions in retaliation for Soleimani's killing.[3] Underlining the seriousness of the concern in early 2020, *Forbes* magazine published an online article just days after Soleimani's death with the title: "How To Prepare Your Business for Iranian Retaliation Cyberattacks."[4]

Analysts' apprehensions about Iranian cyber retaliation were well-founded. Tehran wields growing offensive cyber warfare capabilities, even as its conventional military forces founder from lack of experience in modern conflicts, inadequate access to new equipment, and reduced ability to participate in Joint exercises with other foreign militaries.[5] Moreover, the Islamic Republic has used its growing cyber prowess in numerous contexts, including a series of distributed denial of service (DDoS) attacks that disrupted U.S. financial institutions in 2011–13.[6]

In the end, Iran's response to Soleimani's killing fell short of analysts' worst expectations.[7] More than 20 medium-range ballistic missiles were fired from Iran into U.S. military installations across Iraq.[8] While these missiles did not kill anyone, they caused minor traumatic brain injuries in more than 100 U.S. servicemembers, likely from the concussive blasts of the missiles' impacts.[9] Moreover, two men, probably acting on behalf of the Iranian government, were indicted in Massachusetts for defacing numerous U.S.-hosted websites with anti-America, pro-Iran slogans, and images in retaliation for Soleimani's death.[10]

This article will argue that because of the unique combination of endogenous and exogenous variables squeezing Tehran, such as domestic civil unrest, global economic sanctions, and diplomatic isolation, Iran will turn increasingly to cyber warfare capabilities for military retaliation, rather than kinetic attacks. In advancing this argument, the authors contribute both to theoretical knowledge of state behavior under economic sanctions as well as empirical knowledge of Iranian military doctrine generally and its cyber warfare capabilities in particular.

In this article, "retaliation" means a belligerent act taken by one state in response to an initiating event, such as the killing of a flag officer or the imposition of a naval blockade by another state.[11] The concepts of "offensive cyber capabilities," "offensive cyber warfare," "cyberattacks," and similar formulations are used as synonyms for computer network attacks (CNAs), which refer to actions taken to disrupt, deny, degrade, or destroy information present in computer networks.[12]

There is growing interest among scholars and national security practitioners to understand how Iran's offensive cyber capabilities might be used in Iranian retaliatory strikes. Because of the delicate tensions that the United States and its allies must navigate in dealing with Iran—global financial sanctions, Tehran-backed proxy groups, and diplomatic friction, to cite three examples—cyberattacks upon Iranian networks may be increasingly preferable to kinetic attacks on physical infrastructure. For example, an adversary might choose

to disrupt public transportation systems in an Iranian city through electronic means, rather than via a missile strike, to make attack attribution difficult and reduce the prospect of Iranian retaliation.

For different reasons, such as the comparative weakness of its conventional military assets and its relative diplomatic isolation, Iran may retaliate using cyberattacks, rather than kinetic weapons. Not only does the use of cyberattacks in this regard offer Tehran a means to respond to the perceived aggression, but it also provides a way for Iran to obfuscate their origin of the response. This can help avoid an escalatory, tit-for-tat series of reprisals that might draw Iran into open conflict and jeopardize the Iranian regime.

Why Iran?

The present article's narrow focus on Iran is driven by three primary factors: scholarly interest in how Iran conducts foreign policy, Iran's specific role as an antagonist to U.S. interests, and Iran's embrace of offensive cyber warfare during the past decade.

The contemporary politics of the Middle East are complex, involving myriad historical, religious, ethnic, tribal, and economic variables, among other factors. Yet, it would be fair to say that two of the most politically influential nation-states in the region today are Iran and Saudi Arabia, a point on which there seems to be a general consensus among scholars.[13] Both nations seek to project power within the region and beyond, through conventional means, like energy exports from Saudi Arabia, or through proxies, such as Iran's support for the Lebanese group Hezbollah.[14] To understand the present political dynamics of the Middle East, then, it is indispensable for scholars to analyze Iran and how it pursues its foreign policy objectives.

In a related vein, ties between Iran and the United States have been marked by fissures and tensions since the Iranian revolution of 1979, during which the U.S. embassy in Tehran was seized by Iranian nationals and U.S. government personnel were held hostage for 444 days.[15] In the intervening decades, Iran has provided financial and materiel support to U.S. State Department-designated terrorist organizations such as Hezbollah and Hamas.[16] And, at the time of this writing, Iran and the United States are engaged in on-again, off-again negotiations concerning the future of Iran's nuclear ambitions.[17] These facts make Iran a compelling case study for scholars and national security practitioners.

Lastly, Iran has made impressive strides in developing its cyber warfare capabilities during the past decade, despite the burden of economic sanctions and diplomatic isolation. The authors explore these developments in depth below. This progress in cyber warfare matters because Iran is included among the "big four" nation-state threats to U.S. interests today, alongside North Korea, Russia, and China.[18] The U.S. Intelligence Community highlights Iran in its *Annual Threat Assessment*, for example, and suggests that explorations of Tehran's cyber prowess are needed to bolster understandings of potential Iranian actions.

Methods

The present study was carried out in three distinct phases. The first phase involved a systematic review of peer-reviewed literature on military response forecasting. Our objective in this phase of the study was to identify common themes in the military forecasting literature relevant to the authors' study. Specifically, this article's purpose was to integrate these themes into the analyses by constructing a framework specific to Iran that may also apply to predictions about other militaries' possible responses to cyberattacks. In other words, in developing a framework to forecast Iran-specific military courses of actions, the authors may also be able to shed light on the calculations other nation-states employ to decide whether to retaliate electronically.

Database searches (e.g., EBSCO and JSTOR) used combinations of terms like "military forecasting models" and "strategic studies armed force forecasting tools" to identify literature of interest published between the years 2010–20. This time frame was chosen because the authors agreed that relevant literature predating 2010, while useful, would almost certainly have been overtaken by newer scholarship on military forecasting, particularly in light of major geopolitical events that have occurred since 2010, such as the U.S. withdrawal from Iraq and the buildup of Chinese military infrastructure in the South China Sea. Articles based on a preliminary review appeared to be relevant, but ones that on closer examination were not relevant were discarded. The key criterion for including research was whether the articles discussed methods or techniques for predicting nation-state behavior, or articles that included material which, while not tied to nation-states, could nonetheless prove useful in forecasts of state behavior. After the initial search for literature that appeared relevant to the study was complete, the authors were left with 10 peer-reviewed articles that the authors examined in detail.

The second phase of the study included a systematic review of peer-reviewed literature as well as press accounts and government statements about Iranian offensive cyber capabilities and past attributed Iranian cyberattacks. The authors examined refereed journal articles, white papers from reputable think tanks, pieces from leading magazines such as *Foreign Affairs*, and industry reports from firms like FireEye. These materials were reviewed to discern the primary drivers and themes of contemporary Iranian foreign policy, including how Tehran uses its military assets—kinetic and virtual—as instruments of foreign policy. If the United States assumes that Iran's leaders are rational actors, then their uses of cyber warfare capabilities likely follow stable, predictable patterns governed by their own perceived national interests, even as those interests evolve.

The third and final phase of the study used our literature review on military forecasting and the article's evaluation of scholarship on Iranian foreign policy to develop a series of assertions about likely Iranian responses to cyberattacks on Iranian assets. By understanding how Tehran has used offensive cyber warfare capabilities to date, as well as the principal variables influencing the nation's for-

eign policy, the United States can draw inferences about how Iran would likely respond to electronic attacks.

There are significant limitations to the methods the authors have chosen to employ in this study. The array of variables that affect how any nation responds to cyberattacks is large. The closed nature of the Iranian government means that primary source documents that might be available in studies of democratic regimes' responses to cyberattacks are unavailable for the purposes of the present study. Intentional Iranian unpredictability in executing foreign policy decisions—the so-called "Madman Theory"—may also be a factor that reduces the utility and accuracy of these predictions.[19] The authors also assume that Iranian actions will follow logical, rational patterns that are consistent with Tehran's views of its own national interests. Despite these limitations, however, the authors maintain that fuller understandings of Tehran's likely responses to cyberattacks can be helpful for scholars.

The Trouble with Forecasting

The domestic political calculus of national leaders is one lens through which military responses may be forecast. Since the heads of nation-states direct their countries' armed forces, understanding how leaders decide to use their armies helps estimate foreign military intentions. In a widely cited paper on the bungled Iran hostage rescue operation that took place during the administration of U.S. president James E. "Jimmy" Carter Jr., David J. Brulé notes that leaders use a noncompensatory decision rule that heavily weights domestic political considerations above all other decision-making criteria in foreign policy.[20] Since this research directly involves a historic situation involving interactions between the U.S. and Iranian governments, the authors give it special consideration in the context of the present article. Should the use of military force endanger a leader's domestic political survival, for example, then they are unlikely to select it.

At the same time, developing correct forecasts using the noncompensatory decision rule requires near-complete knowledge of nation-states' domestic political conditions.[21] Unfortunately, no matter how robust their capabilities may be, intelligence services do not have sufficient information to understand foreign leaders' domestic political constraints fully. They lack complete knowledge of the conditions that will influence whether or not leaders elect to use force. Scholars must be careful, therefore, to ensure that their predictions about nations' uses of military force reflect holistic understandings of domestic political environments. Otherwise, those predictions will not be as helpful or accurate as they could be.

One of the earliest and most widely cited studies on forecasting military decision making appeared in the journal *Operations Research* in 1960. Douglas L. Brooks of the Massachusetts Institute of Technology argued for a novel approach to study trade-offs in military decisions by applying the methodologies

of operational research.[22] His specific areas of focus were force composition and weapons system development, which are not the subject of the present study. However, what is useful about Brooks's study for the present article are the critiques he advanced regarding forecasting methodologies. Sharpening the outlines of "fuzzy" variables in forecasting, such as the specific objectives of military forces in conflict and defining acceptable outcomes, were central to Brooks's work.[23] His study also critiques the use of economic models in forecasting military objectives, since they tend to rely on artificially constrained sets of variables and are static in nature.[24] These observations point toward the need for forecasts that capture a wide range of well-defined input variables and are sufficiently flexible to incorporate "if-then" scenarios.

An additional perspective relevant to the present study is the recognition that qualitative narratives can shape threat perceptions as well as agendas for possible courses of action. Writing in 2018, Cameron A. MacKenzie et al. argue that qualitative understandings of design requirements can be valuable for improving engineers' knowledge of how to build and design products.[25] MacKenzie et al.'s work is helpful for the present article, for history shows that narratives can alter political calculations, influencing leaders' decisions around uses of force.

Forecasts of civilian support mobilizations can also provide instructive points of reference for anticipating future uses of the armed forces. A study for the U.S. Army published in 2019 by Rand is illuminating in this regard. Tasked with anticipating how the U.S. Department of Defense might use noncombatant civilians for future overseas contingency operations, a team of researchers used a mixed-methods approach incorporating a literature review, elite interviews with key decision makers, historical analyses, linear regressions, and machine learning.[26]

While the content of the Rand study does not relate specifically to research on Iranian cyber retaliation, what the authors find compelling and relevant is the diverse mixture of methods they applied to their inquiry. The tools and techniques used to complete this study yielded robust results. Yet, while these methods help us to understand how forecasts of military behavior can be produced, the unfortunate reality is that they cannot be generated in the same manner for analyses of *foreign* militaries. After all, the data sets and decision makers to which the Rand team had access were open and accessible to the researchers, since the Department of Defense (DOD) hired Rand to produce the study. However, it is unthinkable that U.S. adversaries would grant U.S.-based researchers unfettered access to their defense personnel, weapons systems, or secure communications networks. To do so would undermine their operational security and cede strategic and tactical advantages for no perceptible benefit.

One stream of literature that would appear relevant to the present study, but which is not incorporated into this article's analyses, is game theory. In recent years, game theory scholarship has been applied to a host of problems, from network behavior to predicting clinical depression.[27] Yet, as shown earlier

in this section, forecasting future state behaviors requires incorporating a wide array of variables. Even the simplest mathematical models would still have to be simplified for analysis purposes, potentially skewing results and reducing their accuracy. In the authors' view, the noncompensatory decision rule, coupled with historical information about past Iranian behavior, offers greater explanatory power and potentially more precise predictions than game theory.

The military forecasting literature suggests that a few major variables will likely determine Iranian responses to cyberattacks. The first and most likely is the noncompensatory decision rule. The Iranian regime is concerned, above all, with its own survival.[28] Therefore, measures that the regime may undertake in response to cyberattacks, or any other crisis for that matter, will prioritize this survival. Moreover, carefully defining input variables used in forecasts is indispensable for accuracy. It is important to guard against the possibility of qualitative narratives about Iranian force strength and intentions skewing the results of analyses. Furthermore, the range of input variables used in military forecasts is broad enough to capture various possible factors that will shape military responses to cyberattacks.

The Increasing Importance of Cyber Operations in Iran

Extant scholarship on Iranian offensive cyber operations emphasizes how Iran uses these operations to gain strategic advantages over its adversaries. However, the degree to which Iran might employ these same tools and tactics to respond to cyberattacks on its own infrastructure remains underexamined by scholars.

Knowledge of Iran's development of offensive cyber warfare capabilities has grown during the past decade. Some researchers have pointed out that Iran's burgeoning interest in cyber warfare is congruent with the nation's general preference for using ambiguity, such as foreign proxy groups, to achieve its policy goals.[29] And a clear track record of Iranian cyberattacks to advance the nation's interests highlights the rising significance of offensive cyber capabilities for Iranian foreign and domestic policy.[30]

Iran has limited ability to use its own conventional military assets to project power abroad.[31] One way that Iran gets around this comparative weakness is by sponsoring and partnering with proxy groups and allied governments in the Middle East.[32] In addition, Tehran has begun to exert power in cyberspace against the United States, its allies, and domestic groups from within Iran itself.[33] It is important to underline here that the examples the authors share below do not represent all of Iran's cyberattacks, either directly or through proxies, during the past 10 years. Rather, these are among the most prominent examples of Iran-linked cyberattacks reported in the public domain.

One of Iran's first publicly attributed uses of cyber warfare during the past decade took place in a series of DDoS attacks against the U.S. financial sector from 2011–13, called Operation Ababil, which the U.S. National Security Agency interpreted as a response to Western efforts to stymie the Iranian nuclear program.[34] Campaigns linked to the Izz ad-Din al-Qassam Cyber Fighters

(QCF), a proxy group connected to the IRGC, attacked American financial institutions.[35] The origins of the DDoS attacks were by their nature ambiguous, since DDoS attacks use large networks of computers called "botnets" to attack targets, making attribution difficult. It is estimated that 50 U.S. banks, including Bank of America, were the victims of these attacks.[36] Operation Ababil shows Iran's willingness to leverage cyberspace to attack critical infrastructure. Given the constraints Iran faces, Tehran has much to gain and little to lose from attacks like those it leveled in Operation Ababil.

Other prominent examples of Iranian cyberattacks that appear offensive, rather than defensive, include data theft and destruction against a Las Vegas casino in 2014, as well as a private Iranian company that accessed the control systems for a dam in Rye, New York, in 2013.[37] While neither of these attacks caused significant damage, they illustrate that Iran can engage targets in different geographic areas and disparate economic sectors.

Shamoon, a computer virus traced to Iran that destroyed thousands of computers at Saudi-Aramco in 2012, offers an additional example of Tehran's capabilities and intentions with respect to cyber warfare.[38] Saudi-Aramco is the national petroleum company of Saudi Arabia. In addition to being petroleum exporting nations, Riyadh and Tehran are strategic rivals in the Middle East, vying for influence and power.[39] The attack resulted only in disrupted business operations, with no loss of oil production or an accidental spillage.[40] However, the signal it sent—that Iran could strike one of its rival's most essential organizations to damage infrastructure—was unmistakable.

Despite the severe effects of Operation Ababil and the Shamoon virus, scholarship also clarifies that Iranian cyber capabilities have evolved.[41] For example, one researcher highlights that the Stuxnet virus, which attacked programmable logic controllers used in the Iranian nuclear program in 2010, was initially identified by *non-Iranian* digital forensic experts. This suggests, in Max Smeets's estimation, that the Stuxnet virus was calculated not only to inflict damage on the Iranian nuclear program but to embarrass Iran. By creating a computer virus that Iranian government officials were not the first to identify publicly, the United States and Israel humiliated the Iranian regime, which was shown to be unable to protect its own clandestine nuclear program and seemingly to lack the ability to analyze malware quickly.[42] Of course, launching offensive cyberattacks (i.e., Operation Ababil) and digital forensic analyses (i.e., deconstructing Stuxnet) are different functions requiring disparate sets of skills and knowledge. However, the overall impression is that Iran's cyber prowess has grown both more sophisticated and persistent over time.[43]

Therefore, it is natural that Iran will increasingly opt to use cyberattacks in offensive (i.e., attacking first) and defensive (i.e., responding to an attack) contexts. Michael Eisenstadt even speculates that one reason Iran's preference for defensive cyberattacks will grow is that there is limited potential for spillover from the cyber to the physical domain.[44] Moreover, unlike the laws of armed conflict governing the use of kinetic weapons, there remains a good deal of am-

biguity about what acts in cyberspace may constitute acts of war.[45] Consequently, Iran can signal through cyberattacks that are more nuanced than through the use of kinetic weapons.

Some scholars express skepticism about how Iran poses a genuine threat to Western and U.S. interests. For example, Paul R. Pillar, a retired Central Intelligence Agency officer, frames Iran as a useful villain for U.S. policy makers.[46] Constance Duncombe sounds a similar note, maintaining that much of the hostility in the U.S.–Iran relationship can be traced to mutual misunderstandings borne from misrepresentations.[47]

Moreover, the idea of Iranian "retaliation" may have become outmoded. Analyses from FireEye, a prominent cybersecurity firm, suggest that Iran's use of cyber responses fits into a broader spectrum of persistent activity, including online disinformation and espionage campaigns.[48] A group of scholars affiliated with the Belfer Center for Science and International Affairs at Harvard University recently argued that the "tit-for-tat" understanding of Iranian cyber actions overlooks the evolution that has taken place in Iranian cyber capabilities.[49] They maintain that while in the past, Iran's use of cyberattacks may have been in direct response to specific events, today Iran is persistent in its use of cyber capabilities. In addition, they argue that U.S. analyses of Iranian intentions suffer from "mirror imaging"—that is, the projection of American decision-making calculus onto Iranian actors, a concern that we share about the present study.[50]

This article is agnostic with respect to the seriousness of the threat that Iran poses. Tehran's track record of cyberattacks to date suggests that it can strike a variety of targets, yet its ability to inflict damage remains limited. The authors also believe that it is possible for Iranian cyber responses to fit within a more expansive, ongoing backdrop of Iranian cyber activity. The focus of this article is neither to assess the gravity of the Iranian threat, nor to contextualize Iran's use of cyberattacks as one tool in its arsenal of online activities. Rather, the objective is to show that Iran's use of cyberattacks for retaliation is a natural outcome of the internal and external factors affecting Tehran today.

The Economic and Diplomatic Drivers of Iranian Cyber Warfare Capabilities

To understand why Tehran is investing in cyber warfare capabilities, it is helpful to examine its growing cyber prowess through the lenses of economics and diplomacy. Other possible factors, such as postrevolutionary Iranian domestic politics, help clarify Iran's embrace of cyber capabilities. However, as the article details below, economics and diplomacy offer a great deal of explanatory power in this context. And while there is a clear overlap between these two perspectives, the authors treat economics and diplomacy independently for this analysis.

In recent years, the financial restrictions imposed on Iran have stunted Iran's economy and worsened the nation's already limited ability to procure and service its conventional military assets.[51] For example, in 2013, sanctions

imposed by the Barack H. Obama administration all but halted Iran's gold and currency trading activities.[52] Tehran's access to the Society for Worldwide Interbank Financial Telecommunication (SWIFT), which undergirds the electronic global transfer of money, was cut off.[53] World Bank data shows that Iran's annual gross domestic product (GDP) has fluctuated from about -7.4 percent in 2012, to 13.396 percent in 2016, to -6.78 percent in 2019.[54] The Iranian rial depreciated 78 percent against the U.S. dollar in two months in 2018. At least some of this currency volatility is attributable to the effects of global economic sanctions imposed on the country.

Moreover, throughout much of the Donald J. Trump administration, Iran ranked in the lower two quintiles of national GDPs that the World Bank tracks.[55] Sanctions led to economic uncertainty, catalyzing massive capital flight from Iran beginning in 2018.[56] Among other effects, the sanctions have contributed to increases in the cost of living for ordinary Iranians, sharp downturns in oil exports, and they nearly halted the domestic manufacture of pharmaceuticals.[57]

However, it is important to note that the imposition of economic sanctions alone does not necessarily deter a state from pursuing certain policy outcomes.[58] Rather, as Robert A. Pape has shown, modern states are adaptable and will turn to substitutions to mitigate the effects of sanctions.[59]

And, indeed, Iran is using innovative measures to evade sanctions. Research and intelligence in the public domain reveal that Iran is amassing wealth in the form of cryptocurrency, probably to dodge the punishing effects of global economic sanctions.[60] A newly identified Iranian cyber group, Agrius, is suspected in a November 2020 series of data wiping attacks disguised as ransomware targeting U.S. allies.[61] Among other activities, the bounties from ransomware could help to fund Iran's support of terrorist organizations like Hezbollah and buttress Tehran's efforts to reengage with the global financial system.

Evidence of Iran's intent lies in the Iranian government, its central bank, and its affiliates' actions and statements.[62] For example, former Iranian president Hassan Rouhani made cryptocurrency mining a part of the state apparatus, imposing policies for cryptocurrency miners to be licensed.[63] The Iranian Ministry of Intelligence is tasked with tracing illegal cryptocurrency mining activities. In parallel with these activities, the country's central bank is charged with ensuring banks and moneychangers are leveraging licensed cryptocurrency miners in global trade transactions and preventing cryptocurrency mining outside of its borders to stymie capital flight.[64] As of August 2021, according to one source, some 30 cryptocurrency mining licenses have reportedly been issued by the Ministry of Industries, Mining, and Trade.[65]

One Iranian think tank reports the country could generate $2 million a day and $700 million a year from cryptocurrency mining, with transactions fees alone generating $22 million.[66] Cryptocurrency intelligence company Cipher-Trace notes that laundering cryptocurrency can potentially be used to conceal weapons purchases, train covert operatives, and cover transportation costs in-

ternationally.[67] One report on Iran's blockchain usage found that approximately 72,000 Iranian IP addresses could be geographically linked to digital wallets traced back into global banks.[68] This suggests the presence of concrete links between Iranian cryptocurrency miners and international financial institutions. If confirmed, this would violate many of the sanctions leveled against Tehran.

Under these perilous economic conditions, it is understandable that the Iranian regime might turn to offensive cyber capabilities as a means to achieve its foreign policy goals. The buildup of these capabilities requires mostly domestic spending on education, training, and infrastructure. And this domestic spending would likely not be swept up in the economic sanctions designed to deter Iranian nuclear proliferation. To illustrate this, while Iran's regular armed forces, called the Artesh, received just 12 percent of its 2019 defense budget, the IRGC, a numerically smaller force, received 29 percent.[69] These figures suggest that Iran's budgetary prioritization of the IRGC is likely connected with its desire to invest proportionally more money in nonconventional military capabilities, such as offensive cyber warfare units, than in conventional military capacity.

Iran's behavior in this regard also appears to offer evidence supporting Pape's claims about state behavior under sanctions regimes. The Islamic Republic has adapted to its circumstances in special ways: using offensive cyber warfare tactics as a means to achieve its foreign policy objectives and actively encouraging the mining and use of cryptocurrency to loosen the strictures sanctions impose.

Turning to the diplomatic context, the Trump administration made a point of strengthening the U.S. alliance with Saudi Arabia, Iran's foil in the Middle East, and facilitating the Abraham Accords, a set of agreements normalizing relations between Israel and Arab states in the Middle East and Africa.[70] The accords have driven a diplomatic wedge between Iran and many of its most powerful neighbors, such as the United Arab Emirates. In the wake of this rapprochement between Israel and much of the Arab world, the country's diplomatic isolation has become so acute that, as Ephraim Kam of Tel Aviv University puts it, "The only country that could be defined as an ally of Iran is Syria."[71]

To be sure, Iran has been isolated diplomatically for decades, dating back at least to the 1979 revolution there.[72] Furthermore, some portion of Tehran's embrace of unconventional weapons and tactics can be attributed not to the impact of the Abraham Accords, but to the passage of time and the march of technological innovation. Still, Tehran seems to understand something fundamental about offensive cyber warfare capabilities. Unlike conventional military technologies, such as aircraft or missiles, whose sales are closely monitored and regulated, cyber technologies—the chips, software applications, and networking hardware that are the sinews of cyber warfare—are not controlled in as robust a manner. Iran's costs in terms of time, money, and effort to build up an offensive cyber warfare unit are modest compared with the development of, say, nuclear weapons.[73] While kinetic weapons are physical, and therefore subject to sabotage or destruction, offensive cyber warfare relies primarily on the recruit-

ment and development of human capital. Well-trained people are needed to plan operations, write code, deploy malicious software, create fictitious online personas, and collect intelligence. What is more, the level of expertise required to plan and execute offensive cyberattacks remains significantly less than the amount of education, training, and expertise necessary to construct and deploy other nonconventional capabilities, such as nuclear weapons.

There are additional diplomatic advantages, as well. Cyberattacks can be difficult to attribute, in part because of the vast array of technologies that support anonymous action online, such as the Tor Browser and virtual private networks (VPNs). While payoffs from offensive cyberattacks can be significant in terms of strategic advantages gained, the costs of carrying out those attacks are comparatively low. Moreover, even if the digital forensic attribution of a cyberattack is successful and supported by robust analyses, the probability of Iran extraditing one of its own citizens for having carried out a cyberattack against an adversary nation is negligible. In aggregate, these factors increase the attractiveness of offensive cyberattacks as a means for the government of Iran to advance its foreign policy objectives.

And Iran has done precisely this. For example, Tehran has used cyberattacks, such as those in Operation Ababil, as a means to retaliate for perceived aggression aimed at Iran's burgeoning nuclear weapons program. Reports of Iranian cyberattacks on the Saudi oil company Aramco, Israeli water utilities, and the U.S. power grid continue to surface.[74] The Iranian advanced persistent threat (APT) group known as Charming Kitten used a combination of social engineering tactics—that is, manipulation through deception—to target individuals on LinkedIn and WhatsApp for espionage purposes.[75] The APT group created bogus profiles impersonating Iranian academics, U.S. government employees, and journalists. In these incidents, the common attack vectors were email, text message, and instant messaging in a three-pronged strategy to gain unauthorized access and steal sensitive information.[76]

Iran is also an active participant in global online disinformation campaigns and most recently leveraged this capability to sway the outcome of the 2020 U.S. presidential election.[77] A March 2021 report shared within the U.S. Intelligence Community emphasized that these influence campaigns intended to prevent the reelection of former president Donald J. Trump.[78] Technical investigations led by the Federal Bureau of Investigation (FBI) and the Central Intelligence Agency (CIA) regarding foreign political operations during the 2020 U.S. elections revealed vulnerabilities in election websites that were exploited and attributed to Iranian IP addresses.[79] The IRGC's disinformation teams leveraged voter information extracted during these cyber-espionage operations to spread propaganda and harass voters as a part of a malicious email campaign in October 2020.[80] These three interrelated sets of actions—computer network attacks, online disinformation campaigns, and electronic espionage—underline how far Iran has come in using cyberattacks to gain strategic advantages.

How Will Iran Respond?

Thus far, the authors have shown that Iran can use offensive cyber capabilities to advance its foreign policy agenda. However, the actual effects of its attacks have been limited (e.g., Shamoon and Operation Ababil). Defense planners in Tehran seem to think carefully before retaliating, ensuring that their actions are roughly in proportion to the attacks they have absorbed. Finally, at the time of this writing, Iran is suffering from a combination of diplomatic isolation and economic crisis, suggesting that Iranian leaders will likely avoid actions that may exacerbate their effects, as this could endanger the regime's survival.

Based on the foregoing analysis, the authors make the following four assertions about the ways in which Iran is likely to respond to a cyberattack on its own assets at the present time:

1. Iran should be expected to use third-party, nongovernmental entities to respond to cyberattacks upon Iranian assets.

Tehran's favor of proxy groups makes this outcome likely. In addition, using a third party adds a layer of plausible deniability for the regime, helping to avoid engagements against the regime itself. In addition, this third-party group may initiate retaliatory actions from outside the sovereign borders of Iran, further adding to the ambiguity surrounding the origins of the response. Two possible examples of such groups include the Mabna Institute, a private group of contractors that steal data for the IRGC, and the Iranian Cyber Army, an independent organization of hackers with murky ties to the IRGC.[81]

2. Iran's response to a cyberattack will probably be symbolic, with little actual damage inflicted on targets.

The list of known cyberattacks attributed to Iran so far suggests that Tehran enjoys a far reach. However, it is not clear that the IRGC possesses the expertise to take power grids offline, contaminate drinking water supplies, or disrupt manufacturing facilities through electronic attacks. Even the compromise of the control systems of the Bowman Dam in Rye, New York, which were tied to the IRGC, did not result in actual, physical damage to equipment nor harm to human life.[82] Rather, the IRGC's track record shows a preference for symbolic actions and targets, such as the Shamoon virus deployed against Saudi-Aramco, or even the ballistic missile launches against U.S. military installations in Iraq after the death of IRGC major general Qassem Soleimani.

3. Iranian retaliation for cyberattacks is likely to be restrained and proportionate.

Since the noncompensatory decision rule applies to military decision making, the Iranian regime is not likely to take any action to jeopardize its contin-

ued grip on power. Despite the bombastic "Death to America!" rhetoric that sometimes gets aired in Iranian media outlets, the authors estimate that Tehran will offer measured responses to cyberattacks that do not rise to a level that invites further counterattacks.[83] The regime's concern for its own survival, as well as its recognition of the nation's present diplomatic and economic vulnerability, will play pivotal roles in this regard.

    4.   After it retaliates, Iran will continue developing and refining its cyber warfare capabilities.

The trajectory of Iran's cyber warfare program is one of clear, if uneven, growth. As the regime continues to face global scrutiny and financial sanctions for its clandestine pursuit of nuclear weapons, it would be rational for Tehran to invest continually in offensive cyber capabilities. These capabilities offer Iran potential strategic advantages in much the same way—albeit to a much less powerful degree—than nuclear weapons. And they are less expensive to develop than other kinetic weapons.

It is important to acknowledge that although the assertions above have been developed using as inclusive and comprehensive an approach as is practicable, such forecasts are not static. While certain assertions that the authors have made are grounded in historical behavior, such as Iran's preference for third party and proxy groups, other predictions could change quickly. For example, a sudden change in leadership, or a national calamity like a worsening of the COVID-19 pandemic, could significantly alter the decision calculus of Iranian leaders.

However, putting these caveats to one side, the authors maintain that, at least for now, Iranian retaliation for cyberattacks on Iranian assets is likely to be carried out by third parties, mostly symbolic, and proportionate in scale.

Conclusions and Future Directions

This article has argued that the unique combination of internal and external factors influencing Iran today, including diplomatic isolation and global financial sanctions, will lead Tehran increasingly to use cyberattacks in military retaliations rather than kinetic weapons. In advancing this argument, the authors offered predictions about how Iran will respond to cyberattacks on its own assets, while contributing to empirical knowledge of Iranian military capabilities and theoretical understandings of state behavior under sanctions regimes.

There is a growing need for additional research in this area. One natural line of inquiry to pursue would be for scholars to assess how the COVID-19 pandemic may determine Iranian uses of cyber capabilities to pursue its domestic and international policy objectives. A second area of research that is needed relates to attribution. Several incidents during the 2020 U.S. presidential campaign, such as online disinformation campaigns traced to Iran, suggest a widening of Iran's tactics in cyberspace. Forensic analyses can publicly confirm or disconfirm Iranian culpability for these acts. Furthermore, they would add to

insights into how the Islamic Republic intends to use its cyber power in future elections.

A third topic for researchers to explore concerns Iran's pursuit of digital currency. Iran may be seeking to amass wealth through a combination of ransomware attacks and independent cryptocurrency mining. Some notable Wall Street victims of Operation Ababil have announced plans to adopt blockchain technology to leverage digital currencies for payment efficiency.[84] If many U.S. financial institutions aggressively pursue blockchain-based assets such as cryptocurrency or tokens, ransomware attacks on the U.S. banking system could be attractive for Iran.

The coming years will be formative for Iran's cyber warfare capabilities. Just as domestic unrest and international pressures have helped spur the development of Iran's capacity in cyberspace to date, so too will the COVID-19 pandemic and the expanding use of cryptocurrencies affect how it chooses to retaliate in the future.

Endnotes

1.   Wayne Rash, "How to Prepare Your Business for Iranian Retaliation Cyberattacks," *Forbes*, 13 January 2020; "Foreign Terrorist Organizations," U.S. Department of State, accessed 16 February 2022; and "Statement on the Killing of Qassem Soleimani," U.S. Department of Defense, 2 January 2020.

2.   For examples of how academic and industry analysts predicted Iranian retaliation through cyberattacks, see Annie Fixler, "The Cyber Threat from Iran After the Death of Soleimani," *CTCSentinel* 13, no. 2 (February 2020): 20–29; and see also "Iran retaliates for the killing of Qassem Suleimani," *Economist*, 8 January 2020.

3.   Fixler, "The Cyber Threat from Iran After the Death of Soleimani," 20–21, 24.

4.   Rash, "How to Prepare Your Business for Iranian Retaliation Cyberattacks."

5.   Rash, "How to Prepare Your Business for Iranian Retaliation Cyberattacks."

6.   "International Cyber Crime: Iranians Charged with Hacking U.S. Financial Sector," Federal Bureau of Investigation, 24 March 2016.

7.   For example, see, "Potential for Iranian cyber response to U.S. Military Strike in Baghdad," Cybersecurity and Infrastructure Security Agency, 6 January 2020; Fixler, "The Cyber Threat from Iran After the Death of Soleimani"; and "Iran Retaliates for the Killing of Qassem Suleimani."

8.   Alissa J. Rubin et al., "Iran Fires on U.S. Forces at 2 Bases in Iraq, Calling It 'Fierce Revenge'," *New York Times*, 7 January 2020; and Idrees Ali and Phil Stewart, "More than 100 U.S. Troops Diagnosed with Brain Injuries from Iran Attack," Reuters, 10 February 2020.

9.   Rubin, "Iran Fires on U.S. Forces at 2 Bases in Iraq, Calling It 'Fierce Revenge' "; and Ali and Stewart, "More than 100 U.S. Troops Diagnosed with Brain Injuries from Iran Attack."

10. United States of America v. Behzad Mohammadzadeh and Marwan Abusrour, Indictment, Criminal No. 20-cr-10182, 3 September 2020, United States District Court (District of Massachusetts), 4–7; and Gordon Lubold, Nancy A. Youssef, and Isabel Coles, "Iran Fires Missiles at U.S. Forces in Iraq," *Wall Street Journal*, 7 January 2020.

11. Françoise J. Hampson, "Belligerent Reprisals and the 1977 Protocols to the Geneva Conventions of 1949," *International and Comparative Law Quarterly* 37, no. 4 (October 1988): 820.

12. "Computer Network Attack (CNA)," National Institutes of Standards and Technology, accessed 16 February 2022.

13. For example, see generally, Martin Beck, "The Aggravated Struggle for Regional Power in the Middle East: American Allies Saudi Arabia and Israel versus Iran," *Global Policy* 11, no. 1 (February 2020): 84–92, https://doi.org/10.1111/1758-5899.12778; and Ibrahim Fraihat, *Iran and Saudi Arabia: Taming a Chaotic Conflict* (Edinburgh, Scotland: Edinburgh University Press, 2020).

14. Hezbollah is both a U.S. State Department-designated terrorist organization as well as a political party in Lebanon.

15. "The Iranian Hostage Crisis," U.S. Department of State, accessed 16 February 2022.

16. Michael Levin, "Iran, Hamas and Palestinian Islamic Jihad," Wilson Center, 21 May 2021; and Suzanne Maloney, "Major Beneficiaries of the Iran Deal: The IRGC and Hezbollah," Brookings Institution, 17 September 2015.

17. Laurence Norman, "Differences Splinter U.S. Team Negotiating with Iran on Nuclear Deal," *Wall Street Journal*, 24 January 2022.

18. See, for example, *Annual Threat Assessment of the U.S. Intelligence Community* (Washington, DC: Office of the Director of National Intelligence, 2021), 12–14.

19. For a recent and fascinating reconsideration of the "Madman Theory," see Roseanne W. McManus, "Revisiting the Madman Theory: Evaluating the Impact of Different Forms of Perceived Madness in Coercive Bargaining," *Security Studies* 28, no. 5 (2019): 979–81, https://doi.org/10.1080/09636412.2019.1662482.

20. David J. Brulé, "Explaining and Forecasting Leaders' Decisions: A Poliheuristic Analysis of the Iran Hostage Rescue Decision," *International Studies Perspectives* 6, no. 1 (February 2005): 100, https://doi.org/10.1111/j.1528-3577.2005.00196.x.

21. For a recent treatment of how intelligence collection can be used to manage risk and combat cybercrime, see Alasdair Marshall et al., "Forecasting Unknown/Unknowns by Boosting the Risk Radar within the Risk Intelligent Organisation," *International Journal of Forecasting* 35, no. 2 (April-June 2019): 654–55, https://doi.org/10.1016/j.ijforecast.2018.07.015.

22. Douglas L. Brooks, "Choice of Pay-Offs for Military Operations of the Future," *Operations Research* 8, no. 2 (March–April 1960): 159–68, https://doi.org/10.1287/opre.8.2.159.

23. Brooks, "Choice of Pay-Offs for Military Operations of the Future," 160.

24. Brooks, "Choice of Pay-Offs for Military Operations of the Future," 163.

25. Cameron A. MacKenzie, Kristy A. Bryden, and Anna A. Prisacari, "Integrating Narratives into Decision Making for Complex Systems Engineering Design Issues," *Systems Engineering* 23, no. 1 (January 2020): 69–73, https://doi.org/10.1002/sys.21507.

26. Molly Dunigan et al., *Army Expeditionary Civilian Demand: Forecasting Future Requirements for Civilian Deployments* (Santa Monica, CA: Rand Corporation, 2019), 6, https://doi.org/10.7249/RR2854.

27. For example, see Rodica Ioana Lung, Camelia Chira, and Anca Andreica, "Game Theory and Extremal Optimization for Community Detection in Complex Dynamic Networks," *PLOS One* 9, no. 2 (February 2014): 1–11, https://doi.org/10.1371/journal.pone.0086891; see also R. Loula and L. H. A. Monteiro, "A Game Theory-Based Model for Predicting Depression Due to Frustration in Competitive Environments," *Computational and Mathematical Methods in Medicine* (June 2020): 1–6, https://doi.org/10.1155/2020/3573267.

28. *Iran Military Power: Ensuring Regime Survival and Security Regional Dominance* (Washington, DC: Defense Intelligence Agency, 2019), 15.

29. Michael Eisenstadt, "Iran's Lengthening Cyber Shadow," Washington Institute for Near East Policy, Research Notes no. 34, 28 July 2016, 1; and Michael Connell, "Iran's Military Doctrine," United States Institute of Peace, 11 October 2010.

30. Eisenstadt, "Iran's Lengthening Cyber Shadow," 1; and Monica Kaminska, "Restraint Under Conditions of Uncertainty: Why the United States Tolerates Cyberattacks," *Journal of Cybersecurity* 7, no. 1 (2021): 2, 9, https://doi.org/10.1093/cybsec/tyab008.

31. *Iran Military Power*, 15.

32. *Iran Military Power*, 15.

33. Julia Voo et al., *National Cyber Power Index 2020: Methodology and Analytical Consid-*

erations (Cambridge, MA: Harvard Kennedy School, Belfer Center for Science and International Affairs, 2020), 14–15.

34. Kaminska, "Restraint Under Conditions of Uncertainty," 2, 9.

35. Jamie Collier, "Proxy Actors in the Cyber Domain: Implications for State Strategy," *Antony's International Review* 13, no. 1 (May 2017): 25–47; "Iranian DDoS Attacks: Conspiracy to Commit Computer Intrusion," Federal Bureau of Investigation, accessed 17 February 2022; Dustin Volz and Jim Finkle, "U.S. Indicts Iranians for Hacking Dozens of Banks, New York Dam," Reuters, 25 March 2016; and "Denial of Service Attacks against U.S. Banks in 2012–2013," Council on Foreign Relations, September 2012.

36. "Denial of Service Attacks against U.S. Banks in 2012–2013."

37. "Denial of Service Attacks against U.S. Banks in 2012–2013," 2.

38. Max Smeets, "The Strategic Promise of Offensive Cyber Operations," *Strategic Studies Quarterly* 12, no. 3 (Fall 2018): 93; and Eisenstadt, "Iran's Lengthening Cyber Shadow," 3.

39. See generally, "Managing the Saudi-Iran Rivalry," Council on Foreign Relations, 25 October 2016.

40. Nicole Perlroth, "In Cyberattack on Saudi Firm, U.S. Sees Iran Firing Back," *New York Times*, 23 October 2012.

41. James Shires and Michael McGetrick, *Rational Not Reactive: Re-evaluating Iranian Cyber Strategy* (Cambridge, MA: Harvard Kennedy School, Belfer Center for Science and International Affairs, October 2021), vii.

42. Smeets, "The Strategic Promise of Offensive Cyber Operations," 102.

43. Shires and McGetrick, *Rational Not Reactive*, 8.

44. Eisenstadt, "Iran's Lengthening Cyber Shadow," 12.

45. Eisenstadt, "Iran's Lengthening Cyber Shadow," 12.

46. Paul R. Pillar, "The Role of Villain: Iran and U.S. Foreign Policy," *Political Science Quarterly* 131, no. 2 (Summer 2016): 367, https://doi.org/10.1002/polq.12479.

47. Constance Duncombe, "Representation, Recognition and Foreign Policy in the Iran-US Relationship," *European Journal of International Relations* 22, no. 3 (2016): 622–45, https://doi.org/10.1177/1354066115597049.

48. For example, see *Suspected Iranian Influence Operation: Leveraging Inauthentic News Sites and Social Media Aimed at U.S., U.K, Other Audiences* (Milpitas, CA: FireEye, 2018); and Jacqueline O'Leary et al., "Insights into Iranian Cyber Espionage: APT33 Targets Aerospace and Energy Sectors and Has Ties to Destructive Malware," *FireEye Threat Research Blog*, 20 September 2017.

49. See, generally, Shires and McGetrick, *Rational Not Reactive*.

50. Shires and McGetrick, *Rational Not Reactive,* 29–31.

51. Hadi Ajili and Mahsa Rouhi, "Iran's Military Strategy," *Survival: Global Politics and Strategy* 61, no. 6 (November 2019): 139–52, https://doi.org/10.1080/00396338.2019.1688575.

52. Mahmood Monshipouri and Manochehr Dorraj, "Iran's Foreign Policy: A Shifting Strategic Landscape," *Middle East Policy* 20, no. 4 (Winter 2013): 136, https://doi.org/10.1111/mepo.12052.

53. Monshipouri and Dorraj, "Iran's Foreign Policy," 136.

54. "GDP Growth (Annual %)—Iran, Islamic. Rep. (Line Graph, 1961–2020)," World Bank, accessed 17 February 2022.

55. "GDP Growth (Annual %)—Iran, Islamic. Rep (Global Heat Map, 2020)."

56. Pooya Azadi, *Governance Deadlock and Economic Crisis in Iran* (Redwood City, CA: Stanford University Iran 2040 Project, 2021), 2.

57. "Six Charts that Show How Hard US Sanctions Have Hit Iran," BBC, 9 December 2019.

58. Robert A. Pape, "Why Economic Sanctions Do Not Work," *International Security* 22, no. 2 (Fall 1997): 93, https://doi.org/10.2307/2539368.

59. Pape, "Why Economic Sanctions Do Not Work," 93.

60. For example, see Tom Robinson, "How Iran Uses Bitcoin Mining to Evade Sanctions

and 'Export' Millions of Barrels of Oil," *Elliptic* (blog), 21 May 2021; and "Iran Uses Crypto Mining to Lessen Impact of Sanctions, Study Finds," Reuters, 21 May 2021.

61.   Amitai Ben Shushan Ehrlich, *From Wiper to Ransomware: The Evolution of Agrius* (Mountain View, CA: Sentinel Labs Research Team, May 2021).

62.   Robinson, "How Iran Uses Bitcoing Mining to Evade Sanctions and 'Export' Millions of Barrels of Oil."

63.   Sebastian Sinclair, "Iran's Ministry of Industry Issues 30 Licenses to Crypto Mining Farms," CoinDesk, 27 June 2021.

64.   "Iran Uses Crypto Mining to Lessen Impact of Sanctions, Study Finds," Reuters, 21 May 2021.

65.   Lubomir Tassev, "Iran Counts 30 Crypto Mining Farms Licensed to Mint Digital Currencies," Bitcoin.com, 26 June 2021.

66.   Behnam Gholipour, "Official Report: Iran Could Use Cryptocurrencies to Avoid Sanctions," IranWire, 2 March 2020.

67.   See generally, *Cryptocurrency Crime and Anti-Money Laundering Report* (Menlo Park, CA: CipherTrace, 2021).

68.   Dave Jevans, "Sanctions Research: More than 72,000 Unique Iranian IP Addresses Linked to More than 4.5 Million Unique Bitcoin Addresses," CipherTrace, 17 May 2021.

69.   *Iran Military Power: Ensuring Regime Survival and Security Regional Dominance* (Washington, DC: Defense Intelligence Agency, 2019), 18.

70.   "The Abraham Accords Declarations," U.S. Department of State, accessed 22 March 2022.

71.   Ephraim Kam, "Iran-Russia-Syria: A Threefold Cord Is Not Quickly Broken," in *Iran in a Changing Strategic Environment*, ed. Meir Litvak, Emily B. Landau, and Ephraim Kam (Tel Aviv, Israel: Institute for National Security Studies at Tel Aviv University, 2018), 33.

72.   Semira N. Nikou, "Timeline of Iran's Foreign Relations," U.S. Institute of Peace, 10 August 2021.

73.   *Iran Military Power*, 35–36.

74.   Christopher Bronk and Eneken Tikk-Ringas, "The Cyber Attack on Saudi Aramco," *Survival* 55, no. 2 (2013): 81–96, https://doi.org/10.1080/00396338.2013.78446; Joby Warrick and Ellen Nakashima, "Foreign Intelligence Officials Say Attempted Cyberattack on Israeli Water Utilities Linked to Iran," *Washington Post*, 5 August 2020; Robert K. Knake, *A Cyberattack on the U.S. Power Grid* (Washington, DC: Council on Foreign Relations, 2017); and Frederick W. Kagan and Tommy Stiansen, *The Growing Cyberthreat from Iran: The Initial Report of Project Pistachio Harvest* (Washington, DC: American Enterprise Institute Critical Threats Project and Norse Corporation, 2015).

75.   An *advanced persistent threat* (APT) is a group of information technology experts that is capable of penetrating and obfuscating their presence within secure computer networks and systems, without authorization, for extended periods of time. APTs are usually tied to nation-states' governments, but they are designed to provide a veneer of plausible deniability for their controllers. For example, see Tara Seals, "Charming Kitten Returns with WhatsApp, LinkedIn Effort," Threat Post, 31 August 2020.

76.   *The Kittens Are Back in Town 3: Charming Kitten Campaign Evolved and Deploying Spear-Phishing link by WhatsApp* (Tel Aviv, Israel: ClearSky Cyber Security, 2020), 7–17.

77.   "United States Seizes Domain Names Used by Iran's Islamic Revolutionary Guard Corps," U.S. Department of Justice, 7 October 2020.

78.   "Government Agencies and Private Companies Undertake Actions to Limit the Impact of Foreign Influence and Interference in the 2020 U.S. Election," *American Journal of International Law* 115, no. 2 (2021): 316, https://doi.org/10.1017/ajil.2021.10.

79.   "Iranian Advanced Persistent Threat Actors Threaten Election-Related Systems," Cybersecurity and Infrastructure Security Agency, 22 October 2020.

80.   Erik Tucker and Frank Bajak, "U.S. Officials Link Iran to Emails Meant to Intimidate Voters," Associated Press, 21 October 2020.

81.   Catherine A. Theohary, *Iranian Offensive Cyberattack Capabilities* (Washington, DC: Congressional Research Service, 2020), 1–2.

82.   Joseph Berger, "A Dam, Small and Unsung, Is Caught Up in an Iranian Hacking Case," *New York Times*, 5 March 2016.

83.   Calvin Woodward and Jon Gambrell, "AP Fact Check: 'Death to America' Chants Live on in Iran," Associated Press, 14 June 2019.

84.   "J.P. Morgan Creates Digital Coin for Payments," J. P. Morgan, 1 February 2021.

REVIEW ESSAY

Three Voices on Leadership in the Twenty-First Century
James N. Mattis, Craig B. Whelden, and Moura Quayle

James Lockhart, PhD

> *Call Sign Chaos: Learning to Lead.* By Jim Mattis and Bing West. New York: Random House, 2019. Pp. 320. $28.00 (hardcover); $18.99 (paperback); $13.99 (ebook).

> *Leadership: The Art of Inspiring People to Be Their Best.* By MajGen Craig B. Whelden, USA (Ret). Los Angeles, CA: New Insights Press, 2019. Pp. 160. $14.95 (paperback); $9.95 (ebook).

> *Designed Leadership.* By Moura Quayle. New York: Columbia University Press, 2017. Pp. 240. $37.00 (hardcover); $26.00 (paperback and ebook).

Since the late nineteenth century, coinciding with industrialization, globalization, and all the changes that followed in world history, the study of leadership has evolved a great deal in Western Europe, North America, Australia and New Zealand, and South Africa, in centers of learning from Oxbridge and Harvard to the University of Cape Town. Scholars and practitioners have moved beyond an earlier period's so-called great man theory—the belief that leaders are born as such, as heroes of exclusive, innate ability, from Alexander the Great and Julius Caesar to Genghis Khan, Napoleon Bonaparte, and Otto von Bismarck—while embracing the notion that the art of leading and persuading people can be learned and mastered by anyone who invests the time and effort to do so. Core contributions to this literature, mainly consumed by government officials, business executives, and military officers, include Frederick Winslow Taylor's *The Principles of Scientific Management* (1911), Peter F. Drucker's *The Practice of Management* (1954), and Jay A. Conger's "The Necessary Art of Persuasion" (1998), one of countless insightful pieces found within the pages of the *Harvard Business Review*.[1]

This review essay proceeds in three parts, surveying three recent works. First, it assesses retired U.S. Marine Corps general James N. Mattis' memoir, *Call Sign Chaos:*

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Learning to Lead, which narrates his military career while offering lessons on leadership at what he calls the direct, executive, and strategic levels. Second, it evaluates retired U.S. Army major general Craig B. Whelden's book, *Leadership: The Art of Inspiring People to Be Their Best*, which outlines and elaborates his philosophy of command as developed after 30 years in the Army, followed by a stint in executive service in the Marine Corps. Finally, it examines Moura Quayle's treatise, *Designed Leadership*, which bridges the disciplines of design (e.g., architectural or landscape design) and business to introduce new, interdisciplinary thinking on the study of leadership. In short, all three of these books inform while expanding readers' comprehension of leadership and will prove useful to government, business, and military audiences.

Mattis: The Marine Corps' Marcus Aurelius

Two things come through loud and clear in *Call Sign Chaos*: Mattis is very well read in history, business management, and other fields, and he has a stoic disposition. He is what Bill Bray, deputy editor-in-chief of the U.S. Naval Institute's *Proceedings* magazine, had in mind when he plead for "deep readers, not reading lists" in the professional officer corps.[2] According to Mattis, this remains of high importance to military leaders. Repeating the aphorism that there is nothing new under the sun, he cautions fellow military officers:

> We have been fighting on this planet for ten thousand years; it would be idiotic and unethical to not take advantage of such accumulated experiences. If you haven't read hundreds of books, you are functionally illiterate, and you will be incompetent, because your personal experiences alone aren't broad enough to sustain you.[3]

The other two authors considered here—Whelden and Quayle—agree. For example, Quayle encourages leaders to become reflective practitioners through constant learning, continuing education, and the perpetual expansion of knowledge, which remains the sine qua non (essential condition) of adaptable, impactful, and useful leadership in the twenty-first century.[4]

Call Sign Chaos proceeds chronologically, from Mattis's enlistment in the Marine Corps in 1971 to his appointment as commander of U.S. Central Command in 2010. It covers his service in the Gulf War and the wars in Afghanistan and Iraq during the Global War on Terrorism, as well as his involvement in the production of *The U.S. Army/Marine Corps Counterinsurgency Field Manual* in 2007.[5] Mattis later served as U.S. secretary of defense in the administration of President Donald J. Trump from 2017 to 2019, but he declined to write about that experience here.

Mattis reaffirms Marine Corps values on leadership while offering his own personal thoughts based on decades of experience. He, like Whelden and Quayle, believes in decentralized leadership and abhors dogma and micromanagement. He speaks at length on this subject at every level of command. To be more specific, Mattis promotes the concept of "a centralized vision, coupled with decentralized planning and execution."[6] This requires confidence and trust in one's superiors and subordinates: "Trust up and down the chain of command must be the coin of the realm."[7] Once this trust is cultivated, leaders convey their overall strategic intention while explaining the "why." They then rely on "aligned independence," leaving the "how" to their subordinates as they take charge of planning and execution, constantly taking the initiative to adjust the plan

and its execution as the situation changes with a jazz musician's sense of improvisation. This makes for fast decision making, implementation, deployment, and redeployment in fluid environments, generating operational tempos that few adversaries are able to keep up with.[8]

Mattis also has strong advice for those working at the highest level of cross-cultural coalition leadership. He writes, "I don't care how operationally brilliant you are; if you can't create harmony—vicious harmony—on the battlefield, based on trust across different military services, foreign allied militaries, and diplomatic lines, you need to go home, because your leadership is obsolete."[9] He recommends that commanders focus on what different military branches, foreign units, and partners will or can do rather than what they will not or cannot do, and simply work with that. Again, drawing on his extensive reading, Mattis points out that there should be nothing new to learn here. He writes that "this was the same challenge [that John Spencer-Churchill, 10th Duke of] Marlborough and [U.S. Army general Dwight D.] Eisenhower had to deal with" concerning Allied governments and forces during the Second World War.[10]

Whelden: From General to Speaker on Excellence in Leadership

Like Mattis and Quayle, Whelden approaches leadership as coaching, supporting, and motivating followers. But he also emphasizes the need for leaders to convey, in explicit terms, their standards, expectations, objectives, and priorities, as well as their understanding of the different parts people will play, what they regard as important and what remains trivial, and what is nonnegotiable, in addition to a short list of the leader's own personal quirks or idiosyncrasies. All of these are necessary for leaders and their followers to work well together. Whelden did exactly this in July 1989, when he assumed command of an Army armored battalion. While these concepts were initially formulated for a military audience, his book *Leadership* adapts them, in the course of 24 chapters, to a more general readership with anecdotes from the author's career and life experiences.[11]

Wheldon cares about safety and risk management above all else in leadership. He advises military leaders and subordinates to weigh benefits and costs before taking risks, especially when people's lives are at stake. Like Mattis's "three Cs"—competence, caring, and conviction—Wheldon demands that leaders be competent and show concern for their soldiers, who should be treated professionally and with dignity and respect.

With respect to clarity in the organizational chart and chain of command, Wheldon clearly demarcates the roles of a unit's executive officer or chief of staff, command sergeant major, noncommissioned officers (NCOs), and support staff. He counsels these personnel to lead, not direct—that is, to engage problems and get their hands dirty in front with the troops. Assigning the same importance to cultivating units that learn and grow on their own that Quayle does, Wheldon highlights not only training but after action reviews and assessments to identify what went right, what went wrong, and how to improve. He values appearance as well. It is not enough to be good—leaders and followers must also *look* good. In the armed forces, this includes physical fitness.

Wheldon advises leaders to promptly state their nonnegotiables and pertinent personal quirks to their followers if they want to create an environment in which they maximize their ability to get on the same page and work effectively. For him, these nonnegotiables range from zero tolerance for breaches of integrity and trust, losing

weapons, misappropriating government property, and other violations including abusing soldiers, trafficking drugs, or driving under the influence. As far as his own quirks are concerned, Wheldon prefers timeliness, alertness and attention to detail, initiative and persistence, decisiveness and getting to the point in communications, receiving bad news early and in its entirety, and talking directly to action officers and NCOs about vital issues rather than going through the chain of command. While nonnegotiables and quirks will differ a great deal between individual leaders and contexts, the point is that all leaders should possess this self-awareness and tell their followers at the outset.

Quayle: Interdisciplinary Bridge Builder

While Mattis and Wheldon approach leadership from a military perspective, Quayle, an academic administrator with government experience in British Columbia, Canada, approaches the subject from a landscape architecture and urban design perspective, which she unites with a business perspective to better appreciate leadership from an interdisciplinary point of view. Her book, *Designed Leadership*, is divided into two parts with seven topically organized chapters that establish the principles and methods of designed leadership and offer a specific skill set. Some will find Quayle's book more abstract and theoretical and far less concrete than Mattis's or Wheldon's accounts, but readers will find several points in common between them as well.

Quayle's central messages are that leaders should consciously and deliberately conceive, plan, and implement their strategies with end states in mind. They must not fear experimentation and failure, because both help leaders refine and perfect what they are doing. They should draw upon the many contributions that designing disciplines have to offer, such as learning from natural systems; evaluating for fit, scale, and context; and being aware of how choosing proper places to practice designed leadership (e.g., in studios rather than at conference tables) can optimize results.

Several of Quayle's points closely resonate with Mattis and Wheldon's arguments. For example, Mattis would recognize and concur with Quayle's emphasis on thinking visually and spatially. The best and most imaginative design processes do not necessarily come from conferences, memoranda, or PowerPoint slides. Sometimes they derive from sketching, drawing, or diagramming and from combinations of verbal-to-visual, visual-to-verbal, or visual-to-visual renderings. When the 1st Marine Division was in the desert in Kuwait preparing for Operation Iraqi Freedom, Mattis used rocks, tape, cans of spray paint, and Legos to create a map of Iraq, complete with known locations of Iraqi forces, on an outdoor area larger than a football field. He dressed his commanders and NCOs in different colored jerseys and rehearsed the operation plan until everyone knew it backward and forward: "The Lego and colored-jersey drills had enabled us all to 'image' what might occur. . . . When the division attacked on D-Day (March 20, 2003), every unit leader knew his role and could visualize how the entire division intended to proceed."[12]

Ultimately, the views of the three authors considered in this essay converge more often than not because the study of leadership has reached across many different disciplines and professions. It has cultivated an increasingly common perspective, language, and specific vocabulary on what makes good leadership and why. It is for this reason that these three books on leadership are recommended by this author to government, business, and military audiences.

Endnotes

1. Frederick Winslow Taylor, *The Principles of Scientific Management* (New York: Harper and Brothers, 1911); Peter F. Drucker, *The Practice of Management* (New York: Harper and Brothers, 1954); and Jay A. Conger, "The Necessary Art of Persuasion," *Harvard Business Review* 76, no. 3 (May–June 1998): 84–95.
2. Bill Bray, "The Navy Needs Deep Readers, Not Reading Lists," Center for International Maritime Security, 18 June 2021.
3. Jim Mattis and Bing West, *Call Sign Chaos: Learning to Lead* (New York: Random House, 2019), 42.
4. Moura Quayle, *Designed Leadership* (New York: Columbia University Press, 2017), 140–58.
5. *The U.S. Army/Marine Corps Counterinsurgency Field Manual* (Chicago, IL: University of Chicago Press, 2007).
6. Mattis and West, *Call Sign Chaos*, 59–60.
7. Mattis and West, *Call Sign Chaos*, 44.
8. Mattis and West, *Call Sign Chaos*, 44.
9. Mattis and West, *Call Sign Chaos*, 87.
10. Mattis and West, *Call Sign Chaos*, 199.
11. MajGen Craig Wheldon, USA (Ret), *Leadership: The Art of Inspiring People to Be Their Best* (Los Angeles: New Insights Press, 2019), 141–54.
12. Mattis and West, *Call Sign Chaos*, 88.

Reflections on "Opportunity Lost"

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In the Fall 2021 issue of the *Journal of Advanced Military Studies*, U.S. Marine Corps major Ian T. Brown reviewed *The Blind Strategist: John Boyd and the American Art of War* in his review essay "Opportunity Lost."[1] Brown disagreed with the supposed "decidedly negative" view of U.S. Air Force colonel John R. Boyd and rejected the book's central argument. In *The Blind Strategist*, I demonstrated that Boyd unknowingly injected historically inaccurate, and at times fraudulent, ideas about German warfare into his influential briefing, "Patterns of Conflict." I also argued that he acquired many of these ideas from the British military thinker B. H. Liddell Hart and that they formed the basis of maneuver warfare theory. Furthermore, I claimed that Boyd later became aware of significant flaws in his thinking after encountering *Wehrmacht* veterans Hermann Balck and Friedrich von Mellenthin, who corrected his inaccurate understanding of German military history. However, Boyd failed to update "Patterns of Conflict" in light of this new evidence, and he subsequently transferred his flawed conception of warfare into the Marine Corps' capstone doctrine, *Warfighting*, Fleet Marine Force Manual 1, in 1989.[2]

Brown, in asserting that *The Blind Strategist* is fundamentally flawed, argued that since Boyd was not heavily influenced by Liddell Hart, he never incorporated Liddell Hart's flawed views on German military history into his own theory of conflict. To prove this point, Brown explained that during a 1989 "Patterns of Conflict" briefing, Boyd only mentioned Liddell Hart six times in contrast to other military theorists such as Sun Tzu and Carl von Clausewitz, who were mentioned far more often. Brown also analyzed four quotes from Boyd that revealed a hostile attitude toward Liddell Hart. Furthermore, Brown concluded that since I had exclusively relied on a 1978 version of "Patterns of Conflict," I never checked to see if Boyd had updated future versions of his briefing after 1980 in light of what he learned from Balck and Mellenthin.

In this essay, I will explain how Liddell Hart heavily influenced Boyd, both consciously and more importantly unconsciously, when he developed "Patterns of Con-

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flict." First, I will explain Liddell Hart's largely unattributed influence within the briefing before analyzing the four above-mentioned quotes in which Boyd voiced negative opinions of Liddell Hart. Second, I will demonstrate that the most profound way in which Liddell Hart influenced Boyd was through three core myths: the notion that German forces avoided destruction, the idea that stormtroopers practiced infiltration tactics, and the definition of blitzkrieg as mechanized infiltration tactics. As Liddell Hart manufactured these concepts and attributed them to the German military, Boyd was not consciously aware that these ideas, which form the central pillar of "Patterns of Conflict," originated from Liddell Hart. Third, I will clarify that I never exclusively relied on a 1978 version of "Patterns of Conflict" and demonstrate that these three core myths remained the central pillar in the final version of the briefing because Boyd ignored Balck and Mellenthin's inconvenient testimony.

Boyd's Intellectual Debt to Liddell Hart

Brown's critique of *The Blind Strategist* relies on disassociating Boyd from Liddell Hart. He begins this disassociation by analyzing a transcript of a "Patterns of Conflict" briefing from 1989 that only mentions Liddell Hart six times in contrast to 37 references to Sun Tzu, 30 references to Sun Tzu's concepts of *cheng* and *ch'i*, and 46 references to Clausewitz.[3] Brown accordingly concludes that "Liddell Hart barely registered on John Boyd's radar when compared to the sages of ancient China and nineteenth century Europe."[4] However, Boyd's source list in the final version of the "Patterns of Conflict" slides listed six books written by Liddell Hart: *A Science of Infantry Tactics Simplified* (1926), *The Future of Infantry* (1933), *The Ghost of Napoleon* (1934), *The German Generals Talk* (1948), *Strategy* (1967), and *History of the Second World War* (1970).[5] No other author appeared in Boyd's source list more times than Liddell Hart. "Patterns of Conflict" is an informal presentation rather than an academic work requiring accurate attribution and, as such, Boyd rarely linked ideas in the briefing back to authors in his source list. Therefore, the only way to accurately gauge Liddell Hart's influence on Boyd is to read books by Liddell Hart and then look for traces of his thinking in "Patterns of Conflict," as I did when writing *The Blind Strategist*.[6]

By focusing on ideas and not citations, I believe that Boyd understood Sun Tzu and Clausewitz through the prism of Liddell Hart's books. When Boyd praised Sun Tzu, he often emphasized the same points that Liddell Hart had already emphasized. For example, Boyd understood Sun Tzu's concept of *cheng* (ordinary force) and *ch'i* (extraordinary force) in a manner identical to Liddell Hart's "man-in-the-dark" theory of fixing the enemy before delivering a knockout blow.[7] Sun Tzu had also observed that "the army's disposition of force is like water. Water's configuration avoids heights and races downward."[8] Liddell Hart emphasized this metaphor when explaining his "expanding torrent" concept and frequently used the words "paths of least resistance" when doing so.[9] Boyd similarly declared that Sun Tzu "speaks many times of the idea that an army should behave like water going down hill. That you seek the crevices, the gaps and the voids" to "find a path of least resistance."[10] Boyd also accepted Liddell Hart's "Napoleonic fallacy" interpretation of Clausewitz. Liddell Hart believed that Clausewitz's concept of "absolute war" advocated total war and maximum violence, which had been practiced by Napoleon and codified in Clausewitz's book *On War*.[11] This Napoleonic fallacy, as Liddell Hart explained, is an unquestioning faith that "victory can only be gained by defeating in battle the armed forces of the enemy."[12] Boyd largely agreed with

Liddell Hart's view on Napoleon and Clausewitz and concluded that the Western obsession with winning battles epitomized the Napoleonic Wars and its principal theorist Clausewitz.[13] Boyd also shared Liddell Hart's criticism of Napoleon and Clausewitz's fixation on winning "decisive battles" and seeking the complete destruction of enemy armies, rather than securing less costly victories by paralyzing opponents.[14] One can never be sure of the pattern of influence here, of course, but it is suggestive that Boyd was influenced by Liddell Hart's work and found his analysis sympathetic with his own.

Boyd's theory of maneuver warfare is very similar to Liddell Hart's indirect approach. For example, both concepts seek to avoid attrition and decisive battle by defeating the mind of the enemy commander to trigger psychological collapse and paralysis. In *Strategy*, Liddell Hart described the indirect approach and this process with an emphasis on dislocation:

> In the psychological sphere, dislocation is the result of the impression on the commander's mind of the physical effects which we have listed. The impression is strongly accentuated if his realization of his being at a disadvantage is sudden, and if he feels that he is unable to counter the enemy's move. Psychological dislocation fundamentally springs from this sense of being trapped.[15]

Boyd agreed with the essence of the indirect approach, but he also considered it to be an outdated concept since his OODA (observe–orient–decide–act) loop framework provided a far more effective mechanism to trigger psychological collapse through disorientation instead of dislocation.[16] In this way, maneuver warfare was built on the foundation of the indirect approach, but Boyd believed he had superseded the concept through his own distinct ideas, principally the OODA loop. Nevertheless, Liddell Hart and Boyd are kindred spirits who share a very similar framework despite the existence of critical differences.

Although Boyd's ideas are largely consistent with the indirect approach, he always highlighted the aspects of Liddell Hart's ideas with which he disagreed in order to distinguish his own theories. This context must be properly understood when analyzing anything Boyd had to say about Liddell Hart. Unfortunately, when Brown presented the four quotes from Boyd concerning Liddell Hart, he accepted them at face value without any consideration of context. For example, Brown introduced the first quote as follows:

> The first comes from an iteration of the brief given around 1986 to congressional staffers. Early on, Boyd calls out Hart's internal intellectual confusion: "another notion here, primarily attributable to . . . Liddell Hart. Operate in a line, or operate in a direction that threatens alternative objectives . . . I'll also point out, Liddell Hart didn't even understand his own idea. I'll bring that out later on."[17]

Boyd obviously disagreed with Liddell Hart's emphasis on operating on a line or a direction because these are expressions of physical dislocation. Therefore, this quote simply confirms the critical point of difference between the two men and nothing more.

Another Boyd quote that Brown introduced offers very little insight: "Boyd later cites an interview Hart conducts with German general Gerd von Rundstedt in *The German Generals Talk*, but he observes it was 'one of the few good things I found in his

book'."[18] However, *The German Generals Talk*, as its title suggests, is simply a series of interviews Liddell Hart conducted with German prisoners of war after World War II that focuses on the views of *Wehrmacht* veterans. There is little content in the book on grand theories of conflict, which explains Boyd's disinterest in the book.

Brown did, however, obtain two statements in which Boyd mocked Liddell Hart and the indirect approach. In one of these quotes, Boyd stated, "in fact, how many people have read Liddell Hart's book, *Strategy*? I don't necessarily recommend it too highly."[19] Boyd was far harsher in the other quote:

> For you people who have read Liddell-Hart, I can give you a much better book. Liddell-Hart's book, I think it's a lot of garbage . . . how many people have read Liddell-Hart's *Strategy and the Indirect Approach*? Remember, we talked about the indirect approach being dislocation, and dislocation being the indirect approach. My God, he's got circular reasoning—he's going to dislocate a guy's mind. You don't dislocate a mind—you disorient it! He talks about dislocation . . . he's [*sic*] chiropractor of war![20]

Brown primarily rejected *The Blind Strategist* based on this quote, as he concluded, "There is no reconciling Boyd's dismissal of Hart as 'garbage' with the book's presentation of the British thinker as fundamental to Boyd's theories."[21] However, Boyd's complex relationship with Liddell Hart's ideas is actually easy to reconcile because Boyd emphasized disorientation in accordance with the OODA loop while rejecting the emphasis on dislocation found within the indirect approach. Therefore, this quote is nothing more than a classic example of Boyd exaggerating and overemphasizing the critical point of difference between himself and Liddell Hart. Boyd actually took *Strategy* very seriously, and all his acolytes had to read the book to join his inner circle (as well as the other five Liddell Hart books listed in his source list).[22] For example, Boyd's acolyte William S. Lind confirmed the close relationship between *Strategy* and Boyd's theories as well as their critical point of difference:

> This book [*Strategy*] contains the heart of Liddell Hart's thinking, his strategy of the indirect approach. The basic principal he espouses applies to tactics and operations as well, which makes this volume valuable to officers of all ranks. It is interesting to compare Liddell Hart's theory, which focuses on place, with John Boyd's, where time is the critical element.[23]

Other maneuver theorists who are familiar with Liddell Hart and Boyd have also confirmed the obvious close relationship between the ideas of both men. For example, Robert Leonhard stated:

> The indirect approach involves subtlety, deception, and the avoidance of enemy strength. As we read his accounts, it is instructive to explore in each campaign the specific purpose of the indirect approach, because Liddell Hart's insights can then be integrated into a modern theory of maneuver.[24]

In another example, Richard E. Simpkin declared, "Manoeuvre theory is about amplifying the force which a small mass is capable of exerting; it is synonymous with

the indirect approach."[25] Anyone who is prepared to invest the time to become familiar with Liddell Hart's books and "Patterns of Conflict" will find close correlations between the two.

Myths Regarding the German Military

In *Strategy*, Liddell Hart claimed that the *Wehrmacht* tried to avoid battle and win by paralyzing its opponents: "While the Allied commanders thought in terms of battle, the new German commanders sought to eliminate it by producing the strategic paralysis of their opponents."[26] In "Patterns of Conflict" Boyd similarly associated German operations with a focus on avoiding the destruction of entire military formations, which he associated with attrition, in favor of generating collapse through other means such as paralysis and disorientation, which he associated with maneuver.[27] However, in reality the *Wehrmacht* consistently aimed to engage in decisive battles in accordance with German field marshal Alfred von Schlieffen's Cannae ideal, which sought to encircle and destroy entire enemy armies.[28] For example, German general Hermann Hoth explained, "Outflanking the enemy is decisive. It leads to his encirclement and destruction. The greater the number of units employed, the further the lunge of the envelopment manoeuvre. More enemy forces will then fall prey to annihilation."[29] The *Wehrmacht*'s embrace of the Cannae ideal rejected the indirect approach and maneuver warfare because it envisaged the complete destruction of enemy forces. Therefore, German operations never followed the concepts of Liddell Hart and Boyd, both of whom stressed the avoidance of destruction while advocating paralysis.[30]

Liddell Hart also claimed that German stormtroopers in World War I practiced infiltration tactics, which he defined in a similar manner to his expanding torrent theory:

> a widely dispersed chain of little groups should probe the enemy's front to discover its weak points, and then penetrate between the posts and machine-gun nests of the defence. While the leading groups pushed onwards through the enemy's position, the "islets" of the defence, cut off from help, were outflanked and reduced by fresh troops from the reserve.[31]

In "Patterns of Conflict," Boyd similarly insisted that stormtroopers practiced infiltration tactics, involving small squads that "flow into any gaps or weaknesses they can find in order to drive deep into adversary rear."[32] He added that stormtroopers followed "paths of least resistance to gain the opportunity for breakthrough and envelopment."[33] Boyd also explicitly linked infiltration tactics with Sun Tzu's idea of water flowing downhill and Liddell Hart's expanding torrent concept:

> In every case, look and note what they're trying to do. They're trying to use the Sun Tzu metaphor. Remember what I said last night? Behave like water. Flow through the gaps and crevices, the voids, et cetera. In other words, strength against weakness. Trying to flow through. And note that they didn't try to keep their formations nicely lined up. Each one tried to make his own pace through, not worrying about how fast or how slow the guy on the right or left of them are going. Work their way through. And then the other teams coming in behind them, larger teams, isolating the local centers of resistance, and mopping them up from the flank and the rear. And

> then the larger units pouring through, these gaps get larger and larger, until you've got what Liddell Hart calls a torrent pouring through the front.[34]

Boyd read Liddell Hart's accounts of infiltration tactics, accepted them as historical fact, and attributed the concept to the German military. However, Boyd did not realize that Liddell Hart had inaccurately described German tactics. Stormtroopers actually used combined arms tactics to destroy enemy strong points to create gaps for the regular infantry to follow. They were specialized assault troops armed with heavy machine guns, trench mortars, and flamethrowers.[35] The 1918 German Army manual *The Attack in Position Warfare* contained the essence of stormtrooper tactics and stressed the elimination of strong points.[36] Rather than avoiding strong points and attacking weakness, as Liddell Hart and Boyd claimed, stormtroopers were, as Wilhelm Balck explained, shock troops that "should be placed at points where the strongest hostile resistance is expected."[37] Ultimately, Boyd read Liddell Hart's accounts of stormtroopers and accepted them as historically accurate accounts while remaining ignorant of their true nature.

In "Patterns of Conflict," Boyd defined *blitzkrieg* as mechanized infiltration tactics, attributing the idea to British military theorist J. F. C. Fuller and German general Heinz Guderian.[38] However, the problem with Boyd's definition is that neither Fuller nor Guderian defined blitzkrieg in this manner. Fuller defined *blitzkrieg* as the German adoption of his "Plan 1919" idea to paralyze the German command with tank attacks, which he declared was "first put to the test in 1939, and became known as *Blitzkrieg*."[39] As a general principle, Fuller advocated the avoidance of destruction and paralyzing the mind of the enemy commander, just like Boyd and Liddell Hart. In this way, Boyd's definition of blitzkrieg is consistent with Fuller's philosophy. Fuller, however, never defined blitzkrieg as mechanized infiltration tactics. Boyd claimed that Guderian "was familiar and privy to the German infiltration techniques. He read the British pamphlets. Plus, he understood the importance of communications. He put all that together, and therefore he became the innovator of the blitzkrieg."[40] Boyd added, "Remember, in blitzkrieg you're trying to avoid the battle."[41] However, the idea of blitzkrieg as mechanized infiltration tactics or the avoidance of battle is completely absent from Guderian's books *Achtung Panzer!* (1937) and *Panzer Leader* (1952).[42] Guderian actually rejected infiltration tactics during the campaign in France in 1940 through his *Schwerpunktprinzip* (concentration principle), which he expressed as *Klotzen, nicht kleckern!* (Hit with the fist, don't feel with the fingers!).[43] Guderian also embraced the idea that tanks concentrated in independent units could serve as the new cavalry within Schlieffen's Cannae ideal, and he accordingly argued that tanks could be the decisive weapon in Cannae-style battles of annihilation.[44]

Though Boyd attributed the concept of blitzkrieg to Guderian, his definition actually derived from Liddell Hart. In 1948, Liddell Hart became acquainted with Guderian, and he arranged British and American publishers to publish *Panzer Leader*.[45] In the original German version of the book, Guderian had stated that Fuller, Liddell Hart, and Giffard Le Quesne Martel had inspired him to think of tanks as more than infantry support weapons: "They envisaged it in relationship to the growing motorisation of our age, and thus they became the pioneers of a new type of warfare on the largest scale."[46] Liddell Hart in a letter asked Guderian to write an additional paragraph for the English-language edition:

because of our special association, and the wish that I should write the foreword to your book, people may wonder why there is no separate reference to what my writings taught. You might care to insert a remark that I emphasized the use of armoured forces for long-range operations against the opposing army's communications, and also proposed a type of armoured division combining panzer and panzer-infantry units—and that these points particularly impressed you.[47]

Guderian obliged, and the English-language version contains an additional paragraph:

Further, it was Liddell Hart who emphasised the use of armoured forces for long-range strokes, operations against the opposing army's communications, and also proposed a type of armoured division combining panzer and panzer-infantry units. Deeply impressed by these ideas I tried to develop them in a sense practicable for our own army. So I owe many suggestions of our further development to Captain Liddell Hart.[48]

Liddell Hart essentially blackmailed Guderian to define blitzkrieg in a manner resembling the indirect approach, and this fraud was not exposed until the publication of John J. Mearsheimer's classic book *Liddell Hart and the Weight of History* in 1988. After Guderian died in 1954, Liddell Hart defined blitzkrieg in more specific ways and used his connection with the deceased German panzer commander to appear credible. For example, he stated in the *Marine Corps Gazette* in 1955:

In 1940 the West was overrun, and the course of history changed by the German armored forces applying a new *blitzkrieg* technique of swiftly maneuvering concentration, exploited by deep strategic penetration. Guderian, the creator and leader of these "Panzer troops," has generously stated in his memoirs that their organization and technique were inspired by my theories and writings of the 1920s.[49]

Liddell Hart also described blitzkrieg as infiltrating the "adversary front to find paths of least resistance" that associated the concept with his expanding torrent theory. Furthermore, he made the association with infiltration tactics clearer because in blitzkrieg "fast tanks were the ideal agents of infiltration or 'soft-spot' tactics—to push on along the line of least resistance while other troops dealt with the cut-off 'islets' of the defence."[50] Boyd also described blitzkrieg in these terms: "Armored reconnaissance or stormtrooper teams, leading armored columns, advance rapidly from least expected regions and infiltrate adversary front to find paths of least resistance."[51] Boyd unknowingly incorporated Liddell Hart's definition of blitzkrieg into "Patterns of Conflict" because he incorrectly believed that Guderian had pioneered these methods.

Balck and Mellenthin in the United States

During the late 1970s and early 1980s, Balck and Mellenthin became U.S. military consultants and participated in discussions at conferences and other events. Boyd met Mellenthin at an armored warfare conference on 10 May 1979. During the discussion,

Mellenthin insisted that the *Wehrmacht* sought the complete destruction of the enemy: "The main point was to destroy the enemy. . . . The only chance you have with the Russian units is to attack them not from the front line but from the rear or from the flank, therefore, our aim was to attack the enemy by surprise and destroy him." Mellenthin also added, "There is no doubt that the Russians succeeded in reorganizing their divisions and groups very quickly, and the only hope for us was not to disrupt them, but to destroy them."[52] Boyd, naturally confused by Mellenthin's comments, asked, "General, on your comments relative to the destruction of the forces, are you talking about every element or are you talking about their organic whole?" Mellenthin simply replied, "You see, always the aim of our tank corps was not to destroy the single man, but to destroy the whole unit."[53] Therefore, Mellenthin had made it crystal clear to Boyd that he was fundamentally wrong about the nature of German operations as he had expressed in "Patterns of Conflict."

In a 1979 interview published by Battelle Columbus Laboratories, Balck, after being asked about the origin of blitzkrieg and panzer warfare, responded:

> Prussia was a small country surrounded by superior forces. There-
> fore, we had to be more skillful and more swift than our enemies.
> . . . In addition to being more clever than our opponents, we Prus-
> sians also needed to be able to mobilize much more quickly than our
> enemies. These ideas were then further developed by Clausewitz and
> then by Schlieffen. Schlieffen wanted above all to bring home the
> lessons of the battle of Cannae.[54]

Balck associated blitzkrieg with Schlieffen's Cannae ideal and made no mention of mechanized infiltration tactics or paths of least resistance. At a conference on North Atlantic Treaty Organization (NATO) tactics hosted by the BDM Corporation in May 1980, Balck, who served as a stormtrooper in World War I, was asked specifically about infiltration tactics. He responded, "I never noticed anything of this method of infiltration, we did not use it. We suppressed the enemy fire by strong artillery and then we deployed."[55] As Balck denied the existence of infiltration tactics, the report from the event noted:

> British and American historians have long put forth the theory that
> General von Hutier's infiltration tactics using Stosstruppen (assault
> troops), first employed with great success against the Russians at
> Riga in World War I, were the lineal forebearers of the Blitz tactics
> of World War II. General Balck professed ignorance of this connec-
> tion.[56]

The report continued:

> In a separate conversation later, Colonel von Uslar-Gleiden, the Ger-
> man Army attache in Washington, told this reporter that the "Von
> Hutier" theory seemed to be confined to the British and Americans.
> He knew of no such ideas in German military doctrine or publica-
> tions. Given the wide adherence to the theory outside Germany, this
> may be a fertile field for further research.[57]

The interview with Balck and the report from the NATO conference both appear

in Boyd's source list, so he certainly read these words that are completely at odds with the essence of "Patterns of Conflict."[58]

Brown accepted that Balck and Mellenthin's testimony contradicted Boyd's understanding of German military history and consequently the theory of maneuver warfare found within "Patterns of Conflict."[59] For example, he stated that "myths of the blitzkrieg found their origins in equally mythical Western perceptions of German infiltration or 'stormtrooper' tactics from World War I."[60] Nevertheless, Brown speculated that Boyd might have updated "Patterns of Conflict" to account for Balck and Mellenthin's testimony. However, he never attempted to clarify the issue one way or the other.

Boyd constantly updated his "Patterns of Conflict" briefing (both its slides and verbal content) to reflect new insights. In this way, Boyd had every opportunity after 1980 to correct the errors in his thinking raised by Balck and Mellenthin. Brown asserted that since I exclusively relied on a 1978 version of "Patterns of Conflict," I never checked to see if Boyd had updated his briefing.[61] However, Brown defined "exclusive" in a very narrow manner and then misapplied his own definition. He acknowledged in an endnote that I did rely on post-1980 versions of Boyd's slides, but he stressed that these sides alone contain insufficient evidence to form considered judgments because they must be analyzed alongside Boyd's verbal words contained in transcripts:

> The only verbal version of "Patterns of Conflict" referenced is the 1978 version, which predates the conferences. . . . Robinson does refer to the 1986 version of the slides . . . however, as noted throughout this essay, the slides in and of themselves do not capture the volume of additional details Boyd delivered verbally in his presentations, and the extant recordings of "Patterns of Conflict" referenced in this essay clearly demonstrate that Boyd expressed critical opinions of some of the theorists referred to in the slides like Hart.[62]

First, certain judgments can be formed from just the slides or alternatively from just the transcripts. Second, in *The Blind Strategist*, I did rely on a transcript of Boyd's words from a 1989 "Patterns of Conflict" briefing that is cited nine times in the book. I am grateful to Brown because this was the same transcript he provided in appendix A of his book *A New Conception of War: John Boyd, The U.S. Marines, and Maneuver Warfare*.[63]

In the final version of Boyd's "Patterns of Conflict" slides, the three German military myths remain the central pillars of the briefing, and following Boyd's death in 1997 they can never be altered. The notion that the *Wehrmacht* avoided destruction is contained in slides 111 and 115–18. The historically inaccurate concept of infiltration tactics dominates slides 58–65. In slide 66, Boyd defined blitzkrieg as follows: "Infiltration tactics of 1918 were mated with: Tank, Motorized Artillery, Tactical Aircraft, Motor Transport [and] Better Communications."[64] This inaccurate conception of blitzkrieg dominates slides 69–72, 80–89, and 98–104. The equally fictitious concept of "counter-blitz" dominates slides 105–6 and 146–55. Boyd also discussed blitzkrieg and counter-blitz in slides 160–71. In summary, the three core myths and the conclusions Boyd derives from them fundamentally underpin the "Patterns of Conflict" slides. In the transcript from 1989, Boyd adds more detail to these myths but provides no qualifying statements that improve the overall historical accuracy of the briefing.[65] Therefore, Boyd never updated "Patterns of Conflict" based on Balck and Mellenthin's testimony.

Conclusion

It is a clearly established fact that Liddell Hart's ideas heavily influenced Boyd. This is apparent when considering Boyd's conscious reading of Liddell Hart's books, which shaped his views of Sun Tzu and Clausewitz as well as the conceptual closeness of the theories of indirect approach and maneuver warfare. However, it is important to note that heavy influence does not equate absolute agreement, as critical differences are evident, particularly Boyd's rejection of Liddell Hart's emphasis on dislocation in favor of disorientation. The most profound way in which Liddell Hart influenced Boyd was unconsciously through the acquisition of the three core German military myths: the notion that German forces avoided destruction, the idea that stormtroopers practiced infiltration tactics, and blitzkrieg being defined as mechanized infiltration tactics. While Boyd's personal opinion of Liddell Hart offers insight into his thinking in relation to what he was consciously aware of, his statements have no evidence value whatsoever in relation to his views on German military history because he never correctly attributed these historically inaccurate concepts to Liddell Hart. Furthermore, it is these German military myths that undermine the historical credibility of "Patterns of Conflict," and it is an undeniable fact that these concepts remained the central pillar in the briefing's final version because Boyd ignored Balck and Mellenthin's words.

The Blind Strategist is in essence only a limited critique of Boyd confined to "Patterns of Conflict."[66] The book is simply an analysis of that briefing using Boyd's own dialectic logic as expressed in his paper "Destruction and Creation."[67] That is why it only offered limited commentary on the OODA loop and Boyd's others briefings: "Organic Design for Command and Control," "The Strategic Game of ? and ?," and "Conceptual Spiral."[68] Boyd, in theory at least, encouraged people to challenge and pull apart his ideas with the ultimate goal of creating new and better ideas. Therefore, all true followers of Boydian logic must critique Boyd's briefings by rigorously looking for anomalies and errors, as I have done in relation to "Patterns of Conflict." *The Blind Strategist* offers no criticism of "Destruction and Creation" because I actually admire Boyd's use of Thomas S. Kuhn's *The Structure of Scientific Revolutions* (1962), which details how the study of anomalies can create paradigm shifts.[69] However, this is also why Boyd cannot be forgiven for ignoring the anomalies that Balck and Mellenthin revealed to him, since seeking out and resolving anomalies is a central aspect of his entire system of logic.

I am grateful for Brown's essay "Opportunity Lost" because it forced me to consider things that were not clear to me when I wrote *The Blind Strategist*. In the book, I did not distinguish between Liddell Hart's influence on Boyd in conscious and unconscious ways, and now I have a better understanding of Boyd's psychology. The essay also forced me to think about how opposing views on dislocation and disorientation is the central point of difference between Liddell Hart and Boyd and between the concepts of indirect approach and maneuver warfare. Despite my differences of opinion with Brown, I do believe there is an opportunity to find common ground. I admire his excellent book *A New Conception of War*, which certainly increased my understanding of Boyd's theories when I was writing my book. In particular, I am I grateful for the "Patterns of Conflict" transcript found in appendix A. Nevertheless, I believe that Brown's main limitation to date has been his failure to acknowledge any significant flaws within "Patterns of Conflict." Admitting the existence of significant errors in Boyd's thinking does not mean "throwing the baby out with the bathwater," as his ideas contain valid content alongside grave mistakes.

Endnotes

1. Maj Ian T. Brown, "Opportunity Lost," *Journal of Advanced Military Studies* 12, no, 2 (Fall 2021): 199–211. For the book reviewed therein, see Stephen Robinson, *The Blind Strategist: John Boyd and the American Art of War* (Dunedin, NZ: Exisle Publishing, 2021).

2. *Warfighting*, Fleet Marine Force Manual 1 (Washington, DC: Headquarters Marine Corps, 1989).

3. Brown, "Opportunity Lost," 207–8.

4. Brown, "Opportunity Lost," 208.

5. John R. Boyd, "Patterns of Conflict," ed. Chet Richards and Chuck Spinney (slide-show presentation, Defense and the National Interest, 2007), 191, hereafter Boyd, "Patterns of Conflict" slides. See also B. H. Liddell Hart, *A Science of Infantry Tactics Simplified* (London: William Clowes, 1926); B. H. Liddell Hart, *The Future of Infantry* (London: Faber and Faber, 1933); B. H. Liddell Hart, *The Ghost of Napoleon* (New Haven, CT: Yale University Press, 1934); B. H. Liddell Hart, *The German Generals Talk* (New York: William Morrow, 1948); B. H. Liddell Hart, *Strategy: The Indirect Approach* (London: Faber and Faber, 1967); and B. H. Liddell Hart, *History of the Second World War* (London: Weidenfeld and Nicolson, 1970).

6. The bibliography in *The Blind Strategist* lists 3 articles and 12 books by Liddell Hart as well as 9 articles and 3 books about Liddell Hart. Therefore, I have more than sufficient familiarity with Liddell Hart's ideas to detect their influence within "Patterns of Conflict."

7. Boyd explained Sun Tzu's concept of *cheng* (ordinary force) and *ch'i* (extraordinary force) with the following words: "[George S.] Patton said, hold them by the nose and kick them in the ass. . . . You get them to concentrate one way and you kick the sh—t out of them in a different direction." Ian T. Brown, *A New Conception of War: John Boyd, The U.S. Marines, and Maneuver Warfare* (Quantico, VA: Marine Corps University Press, 2018), 215. Boyd's understanding of *cheng* and *ch'i* is almost identical to Liddell Hart's "man-in-the-dark" theory of fixing the enemy before delivering a knockout blow. B. H. Liddell Hart, "The 'Man-in-the-Dark' Theory of Infantry Tactics and the 'Expanding Torrent' System of Attack," *Journal of the Royal United Service Institution* 60, no. 461 (February 1921): 1–22.

8. Michael G. Kinase, "Classical Strategists and the Indirect Approach," *Australian Defence Force Journal* 119 (July/August 1996): 17.

9. Sun Tzu's metaphor echoed the "expanding torrent" concept, as Liddell Hart noticed that "when I read Sun Tzu's two-thousand-year-old book on The Art of War, I found that he had used a close simile." B. H. Liddell Hart, *The Liddell Hart Memoirs,* vol. 1 (London: Cassell, 1965), loc. 826 and 832 of 7,648, Kindle edition.

10. John Boyd, "Patterns of Conflict," in *Proceedings of Seminar on Air Antitank Warfare Held at Springfield, Virginia, on 25–26 May 1978* (Columbus, OH: Battelle Columbus Laboratories, 1978), 12, hereafter Boyd, "Patterns of Conflict (26 May 1978)."

11. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984).

12. David Lord, "Liddell Hart and the Napoleonic Fallacy," *RUSI Journal* 142, no. 2 (April 1997): 58, https://doi.org/10.1080/03071849708446132.

13. Boyd, "Patterns of Conflict (26 May 1978)," 15–17.

14. Boyd, "Patterns of Conflict (26 May 1978)," 18–19.

15. B. H. Liddell Hart, *Strategy*, 2d rev. ed. (New York: Meridian, 1991), 326–27.

16. Boyd explained his thoughts on disorientation in his briefing "Patterns of Conflict." John R. Boyd, *Discourse on Winning and Losing* (Quantico, VA: Marine Corps University, 1989), 133–34.

17. Brown, "Opportunity Lost," 207.

18. Brown, "Opportunity Lost," 207.

19. Brown, "Opportunity Lost," 207.

20. Brown, "Opportunity Lost," 207.

21. Brown, "Opportunity Lost," 208.

22. Boyd took his source list for "Patterns of Conflict" extremely seriously, as his acolyte James G. Burton explained: "Those of us on the telephone net had to read most of them, some more than once." Burton added, "Boyd's favorite time for talking about the publications in this list, as well as his ideas and theories, was during the middle of the night. In order to delve into this brilliant mind, Boyd's friends had to be willing not only to read all of these books and articles but also require a limited amount of sleep." James G. Burton, *The Pentagon Wars: Reformers Challenge the Old Guard* (Annapolis, MD: Naval Institute Press, 1993), loc. 1051 and 5522 of 7426, Kindle edition.

23. William S. Lind, *Maneuver Warfare Handbook* (Boulder, CO: Westview Press, 1985), 62.

24. Robert Leonhard, *The Art of Maneuver: Maneuver Warfare Theory and AirLand Battle* (New York: Ballantine Books, 1991), loc. 868 of 5341, Kindle edition.

25. Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare* (Exeter, UK: Brassey's Defence, 1985), 133.

26. Liddell Hart, *Strategy*, 2d rev. ed., 218.

27. Boyd, "Patterns of Conflict (sides)," 112–15.

28. Terence M. Holmes, "Classical Blitzkrieg: The Untimely Modernity of Schlieffen's Cannae Programme," *Journal of Military History* 67, no. 3 (July 2003): 745, https://doi.org/10.1353/jmh.2003.0228; and Jehuda L. Wallach, *The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars* (Westport, CT: Greenwood Press, 1986), 42.

29. Hermann Hoth, *Panzer Operations: Germany's Panzer Group 3 during the Invasion of Russia, 1941*, trans. Linden Lyons (Havertown, PA: Casemate, 2015), Kindle edition.

30. Daniel J. Hughes, "Abuses of German Military History," *Military Review* 86, no. 12 (December 1986): 69–70.

31. Liddell Hart, *The Future of Infantry*, 27.

32. Boyd, "Patterns of Conflict" slides, 57.

33. Boyd, "Patterns of Conflict" slides, 57.

34. Boyd, *Discourse on Winning and Losing*, 75.

35. Capt Jon T. Hoffman, "The Limits of Light Infantry Doctrine," *Marine Corps Gazette* 74, no. 9 (September 1990): 20.

36. Bruce I. Gudmundsson, *Stormtroop Tactics: Innovation in the German Army, 1914–1918* (Westport, CT: Praeger, 1995), 149.

37. Wilhelm Balck was a German general during World War I and Hermann Balck's father. Wilhelm Balck, *Development of Tactics: World War*, trans. Harry Bell (Fort Leavenworth, KS: General Service School Press, 1922), 86.

38. Boyd, "Patterns of Conflict" slides, 66.

39. J. F. C. Fuller, *The Conduct of War, 1789–1961: A Study of the Impact of the French, Industrial, and Russian Revolutions on War and Its Conduct* (Westport, CT: Greenwood Press, 1961), 244.

40. Boyd, *Discourse on Winning and Losing*, 85.

41. Boyd, *Discourse on Winning and Losing*, 125.

42. Heinz Guderian, *Achtung Panzer!* (Stuttgart, Germany: Union Dt. Verlagsges, 1937); and Heinz Guderian, *Panzer Leader* (London: Penguin, 1952).

43. Karl-Heinz Frieser, *The Blitzkrieg Legend: The 1940 Campaign in the West* (Annapolis, MD: Naval Institute Press, 2005), loc. 3412 of 14003, Kindle edition.

44. Holmes, "Classical Blitzkrieg," 771.

45. B. H. Liddell Hart, "foreword," in Guderian, *Panzer Leader*, 15.

46. Guderian, *Panzer Leader*, 20.

47. Azar Gat, "British Influence and the Evolution of the Panzer Arm: Myth or Reality? Part I," *War in History* 4, no. 2 (April 1997): 151–52, https://doi.org/10.1177/096834459700400304.

48. Guderian, *Panzer Leader*, 20.

49. B. H. Liddell Hart, "New Warfare—New Tactics," *Marine Corps Gazette* 39, no. 10 (October 1955): 12.

50. Liddell Hart, *The Liddell Hart Memoirs*, vol. 1, 4301/7648.

51. Boyd, "Patterns of Conflict" slides, 70.

52. *Armored Warfare in World War II: Conference Featuring F. W. Von Mellenthin, General Major A.D., German Army* (Columbus, OH: Battelle Columbus Laboratories, 1979), 28–29.

53. *Armored Warfare in World War II*, 31.

54. *Translation of Taped Conversation with General Hermann Balck, 12 January 1979, and Brief Biographical Sketch* (Columbus, OH: Battelle Columbus Laboratories, 1979), 18.

55. *Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine* (McLean, VA: BDM Corporation, 1980), 53.

56. *Generals Balck and Von Mellenthin on Tactics*, 52.

57. *Generals Balck and Von Mellenthin on Tactics*, 53.

58. As mentioned previously, Boyd took his source list for "Patterns of Conflict" extremely seriously, so it is inconceivable that he casually read his sources. Burton, *The Pentagon Wars*, loc. 1,051, 5,552 of 7426.

59. Brown stated, "In chapter 6, the author comes closest to making his case by describing a number of exchanges between Boyd, some of his associates, and former German generals Mellenthin and Balck during a series of conferences conducted in the United States in 1979 and 1980. These conferences provided Boyd, Lind, and others in the maneuver warfare and military reform movements the opportunity to validate their tentative ideas with the best-alleged practitioners of them. But in questioning Mellenthin and Balck on everything from mission tactics to blitzkrieg to arguments of maneuver versus attrition, Boyd's group found that the Germans contradicted many of their presuppositions." Brown, "Opportunity Lost," 205–6.

60. Brown, "Opportunity Lost," 205.

61. Brown stated, "To critique Boyd's 'fantasy world,' he relies exclusively on a 1978 version of 'Patterns of Conflict,' delivered before these key interviews with the German commanders in 1979 and 1980. This is problematic, because as noted above and by Robinson's own observation, Boyd constantly updated his briefings nearly to the time of his death." Brown, "Opportunity Lost," 206.

62. Brown, "Opportunity Lost," 210.

63. Brown, *A New Conception of War*, 199–262.

64. Boyd, "Patterns of Conflict" slides, 66.

65. Boyd's understanding of the three core myths—the notion that German forces avoided destruction, the idea that stormtroopers practiced infiltration tactics, and defining blitzkrieg as mechanized infiltration tactics—as expressed in his slides is entirely consistent with the views he expressed through his verbal briefing as contained in the transcript from 1989. Boyd, *Discourse on Winning and Losing*.

66. On the one hand, Brown acknowledged that my book "is a significant departure from the historiography on Boyd," and on the other hand he strangely concluded, "Disappointingly, Osinga's detailed discussion of the OODA loop is omitted in *The Blind Strategist*." Brown, "Opportunity Lost," 201, 203.

67. John R. Boyd, "Destruction and Creation" (working paper, 1976).

68. John R. Boyd, "Organic Design for Command and Control," ed. Chet Richards and Chuck Spinney (slideshow presentation, Defense and the National Interest, 2005); John R. Boyd, "The Strategic Game of ? and ?," ed. Chet Richards and Chuck Spinney (slideshow presentation, Defense and the National Interest, 2006); and John R. Boyd, "Conceptual Spiral," ed. Chet Richards and Chuck Spinney (slideshow presentation, Defense and the National Interest, 2011).

69. Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago, IL: University of Chicago Press, 1962).

Understanding Transnational, Regional, and Local Jihadisms
The Continuing Challenge of Islamist Nonstate Armed Groups to International Security

Christopher Anzalone, PhD

Jihadists of North Africa and the Sahel: Local Politics and Rebel Groups. By Alexander Thurston. New York: Cambridge University Press, 2020. Pp. 292. $29.99 (paperback).

And God Knows the Martyrs: Martyrdom and Violence in Jihadi-Salafism. By Nathan S. French. New York: Oxford University Press, 2020. Pp. 392. $105 (hardcover).

A History of Palestinian Islamic Jihad: Faith, Awareness, and Revolution in the Middle East. By Erik Skare. New York: Cambridge University Press, 2021. Pp. 304. $99.99 (hardcover).

For more than two decades, since the 11 September 2001 attacks against the United States perpetrated by Osama bin Laden's al Qaeda, the U.S. government, under successive presidential administrations, has focused on disrupting and degrading the planning and operational capacities of a host of Sunni militant Islamist (jihadi) violent extremist organizations (VEOs) headed by al Qaeda and Islamic State (ISIS/ISIL) and their regional branches, affiliates, and allies.[1] The rapid sweep across Afghanistan by the Afghan Taliban in mid-2021, which culminated in its capture of Kabul in August and seizure of political power, was the most recent mark of the continuing influence that Islamist rebel organizations exert over global affairs and underlined the importance of analyzing these groups' ideologies, strategic thinking, operations, and organizational and communal politics and internal debates. Sunni militant Islamist organizations continue to pose a strategic challenge to the foreign policy and security of the United States and its allies in the Middle East and North Africa, in Central, South, and Southeast Asia, and increasingly in Sub-Saharan Africa.

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In testimony before the U.S. House of Representatives Committee on Armed Services on 20 April 2021, the commander of U.S. Africa Command, U.S. Army general Stephen J. Townsend, noted the growing security threat posed to the United States and its regional allies by Sunni militant Islamist VEOs, stating that al Qaeda- and Islamic State-affiliated groups "are expanding in Africa at a rapid pace, taking advantage of weak governance and disenfranchised populations."[2] Sub-Saharan Africa—in particular parts of West Africa, Somalia, northeastern Kenya, the Democratic Republic of the Congo, and Mozambique—are the reasons militant Islamist groups continue to expand significantly. Leading the charge in this expansion are Islamic State-West Africa Province (IS-WAP), Islamic State-Central Africa Province (IS-CAP), the al Qaeda in the Islamic Maghreb (AQIM)-affiliated coalition Jama'at Nusrat al-Islam wal-Muslimin (JNIM), and Somalia's al Shabaab.

In West Africa and the Sahel, a series of deadly Islamist insurgencies have thrived amid political unrest, government neglect and corruption, and preexisting communal conflicts, with al Qaeda- and Islamic State-affiliated groups taking advantage of the chaos. Though they claim to be driven by self-described purity of religious principles, JNIM, IS-WAP, and other militant Islamist groups are deeply embedded and engaged with local, regional, and communal politics and social structures, engaging in alliance-building and negotiations with other social actors, including governments. It is the practice of "jihadi politics" that is the central focus of Alexander Thurston in his thoroughly researched book *Jihadists of North Africa and the Sahel: Local Politics and Rebel Groups*, which geographically examines the histories and evolutions of the organizational structures and military and political histories of Sunni Islamist rebel groups in Algeria, Libya, Mali, Niger, Burkina Faso, and Mauritania. Thurston, an expert on Islamic political and legal thought in Africa, has previously published excellent books on Nigerian Salafism and Boko Haram.[3]

The book uses many years of regional field work together with a wide range of primary sources, U.S. government cables, nongovernmental organization reports, and academic studies, including an impressive array of primary documents and other materials produced by the Islamist groups themselves. Primary sources drawn on include statements, books, juridical opinions (*fatawa*), and communiqués from AQIM, JNIM, al Shabaab, Osama bin Laden, Islamic State, Algeria's Armed Islamic Group (GIA), the Salafi Group for Preaching and Combat (GSPC), and the Mujahideen Shura Council of Derna in Libya.

Thurston convincingly demonstrates that, much like other armed groups, jihadis are at their core driven by political interests and goals. They face challenges and choices about whether or not to pursue political and strategic pragmatism in the interest of survival and self-preservation or, rather, to adhere to doctrinal "purity" or rigidity, even if it means their own descent into irrelevance and, ultimately, defeat. Beyond these groups' self-portrayal of being solely driven by a desire to "save" Islam and the idealized conception of a united global community of Muslims (the *Ummah*) lies much more worldly goals of organizational preservation and the pursuit of political goals ranging from the formation of rebel-governed proto-states to a politics of disruption. Though these groups are often discussed primarily or even solely as "terrorist groups," Thurston argues that the conflation of a tactic (terrorism) with an organization's sole identity confuses and obscures much more than it elucidates when it comes to trying to understand how these groups and their members view themselves and their goals.[4] Similarly,

grouping them under the "global jihadi movement" can also gloss over these groups' largely locally and regionally focused operations and goals.

Thurston argues that jihadi field commanders are political entrepreneurs who regularly must make decisions about how to address political issues without clear-cut answers in jihadi doctrine. Consequently, field commanders' decision making is "a field of contestation and improvisation rather than a mechanical application of doctrine."[5] Thurston pushes back against political science arguments that jihadi commanders simply shop around for the "best" ideology and are not really influenced in their decision making by their ideologies. At the same time, he demonstrates that jihadi commanders and group leaders are also not driven blindly by ideology. Rather, ideology is just one dynamic that exerts influence over jihadi decision making and strategizing.

The seven chapters in *Jihadists of North Africa and the Sahel* are organized into case studies of specific jihadi organizations in multiple North African and Sahelian countries. Thurston examines the interconnected history of relations between different nonstate armed groups and multiple instances of intra-Islamist fratricidal violence, such as in Algeria during the 1990s and more recently in Libya after the overthrow of Muammar al-Qaddafi in the autumn of 2011. He also discusses the outlier case of Mauritania, whose politicians have, since 2011, largely managed to stop jihadis from building alliances and expanding by reaching a kind of modus vivendi (an agreement for peaceful coexistence) with AQIM and its affiliates. Saharan jihadi groups have largely left Mauritania alone while the country's government has practiced nonintervention in neighboring Mali despite AQIM and JNIM being very active there.[6] Mauritanian authorities also engaged in dialogue with Islamist hardliners and drew back on the use of torture targeting political dissidents while allowing Mauritanian Islamists and Salafis more room to mobilize socially and politically than they had previously permitted.[7] In Mali, AQIM-affiliated jihadi commanders and leaders engage in processes of negotiation and alliance-building with government officials and existing community leaders as part of their political operations.

Jihadi commanders can take advantage of the dissolution of rival Islamist groups, such as the splintering of the Islamic Salvation Front (FIS) coalition in 1990–91. This occurred after the Algerian government canceled elections following the coalition's electoral victories in the country's first free elections since independence and arrested FIS leaders and thousands of members and supporters. The GIA emerged at the forefront of an insurgency against the Algerian government, succeeding in incorporating several distinct blocs into a shaky coalition of its own, but it ultimately failed to forge a united front and subsequently descended into increasingly fratricidal intragroup and inter-Islamist violence. Under hardline leaders Djamel Zitouni and Antar Zouabri, all forms of disagreement, debate, and dissent were classified as "heretical" and capital offenses, turning the GIA's internal blocs against one another in dramatically increasing levels of bloodletting. This extremism, created by a tyrannical style of leadership, ultimately led to the GIA's collapse and division, with field commanders deserting to create their own group, the GSPC. The GSPC eventually aligned itself with Osama bin Laden and changed its name to AQIM.[8] As AQIM, the former GSPC central leadership has been able to navigate internal disputes by allowing individual field commanders and factions within the AQIM "umbrella" a high degree of autonomy in terms of their decision making, but this has come at the cost of a maintaining a uniform AQIM organizational identity and strategy.

The importance of ideology to the operational decision making of a social movement or an organization remains debated among scholars and analysts. However, there is no doubt that ideology plays a role in influencing the choices made by jihadi groups and their individual leaders, field commanders, and rank-and-file members. Ideology is not stagnant and can evolve and hybridize. In *And God Knows the Martyrs: Martyrdom and Violence in Jihadi-Salafism*, Nathan S. French takes seriously the key role of ideology—and specifically theology—in motivating the efforts of Sunni jihadis, from Islamic State to al Qaeda and their regional affiliates and allies. An expert on Islamic legal thought and theory, he delves deeply into Sunni jihadi theological discussions and debates, mining the reams of legal opinions (*fatawa*), rulings (*ahkam*), and other print, audio, and audiovisual primary sources to paint a picture of how jihadis engage in reinterpretations of classical and medieval Islamic texts in pursuit of very worldly political projects.

Sunni jihadi cultural productions, in the form of rhythmic recitations and chants (*anashid*), poetry, storytelling, music videos, films, radio and other audio broadcasts and productions, and photography espouse the belief that the "best" and purest form of faith that a Muslim can demonstrate is through "striving in the path of or for the sake of God" (*al-jihad fi sabil Allah*). To jihadis, this "striving" is reduced to one thing: military struggle against those inside and outside Islam whom they deem to be persecuting Muslims and thereby attacking God's final revealed religion. The trials, tribulations, and sacrifices of the individual *mujahid* (one who engages in jihad or "striving") is necessary for the ultimate victory of the collectivity, according to jihadi political and theological thought.

The act of self-sacrifice for the greater good of the idealized global Muslim community (*Ummah*) and "for Islam" by a "martyrdom-seeker" (*istishhadi*) is, according to jihadi jurists and theologians, the pinnacle of faith, a superlative demonstration of one's true belief (*iman*) and desire to achieve the implementation of God's rule (*hukm Allah*) on Earth. As such, jihadi writers go to great lengths to try to differentiate it from suicide, an act of self-harm clearly forbidden in the Qur'an and Islamic scriptural and legal texts.[9] Rather than abandoning wantonly their lives, the martyrdom seekers choose to sacrifice their worldly lives "for the sake of God," defending the *Ummah*, which is under attack, while also securing for themselves rewards in the hereafter because of their fulfillment of a pact with God, who promises those who "die in His path" divine blessings and rewards.[10]

Rather than a disparate array of writings and media productions, French argues that Sunni jihadi, or "jihadi-Salafi," writings on Islamic law (*shariʿa*), jurisprudence (*fiqh*), theology (*kalam*), and creed (*ʿaqida*) represent a coherent legal tradition and corpus. He differentiates this from arguing that Sunni jihadis have formed their own legal/jurisprudential school (*madhhab*), such as the four Sunni legal schools: the Shafiʿi, Hanafi, Hanbali, and Maliki.[11] French notes that jihadis are pan-*madhhab* in that they frequently cite historical jurists from all four of these legal schools while also resisting what they see as imitation (*taqlid*) of a single legal school, something that the broader Salafi current within Sunni Islam also rejects. By embracing the interpretative legal mechanism of the *fatwa* (juridical opinion) and making use of new technologies including the internet and social media platforms, Sunni jihadis have harnessed modern modes of communication to forge a new, interactive legal tradition. Jihadis around the world, as well as their supporters and sympathizers, can connect to jihadi jurists on

internet platforms such as the long-running (though now defunct) Minbar al-Tawhid wa-l-Jihad (Pulpit of Absolute Monotheism and Jihad) website run by the Palestinian-Jordanian jihadi cleric ʿIssam al-Barqawi, better known in jihadi circles as Abu Muhammad al-Maqdisi.[12]

Sunni jihadis are not united on issues of law, theology and creed, or politics. Indeed, al-Maqdisi and other jihadi juridical voices engage with one another and with other jihadis in debates about the "acceptable" boundaries of martyrdom seeking, including legitimate targets, intentional violence against noncombatants, and practice of excommunication (*takfir*) against other Sunni Muslims (chapter 4). For example, Abu Musʿab al-Zarqawi, the founder of the organization that evolved into, first, al Qaeda in the Land of the Two Rivers/Iraq (AQI) and, after his death, ISIS/ISIL and then Islamic State, was heavily criticized by al-Maqdisi and many other Sunni jihadi leaders and jurists for what they considered, even by jihadi standards, to be extreme violence and overly broad enactment of *takfir* as a tool for legitimizing violence against Iraqi Shi'ite Muslims and other Sunni Muslims who did not support his ideology or group.

Sunni jihadis, though public and unapologetic about their adherence to rigid gender roles, which vary from group to group based on regional and culture-specific differences, hold the role of *mujahid* women as key to the broader jihadi political project. For both Islamic State and al Qaeda, this political project ultimately is the construction of a "new caliphate," a new jihadi-led and governed transnational state that will, they say, enable the *Ummah* to stand against the coalitions of "unbelievers" (*kuffar*) such as the United Nations, the European Union, and the North Atlantic Treaty Organization (NATO). Jihadi jurists remain divided in their legal views about whether or not Muslim women can be frontline fighters, with some jurists arguing in favor while others say that women should play a supporting role by raising their children to become the next generation of mujahideen and otherwise supporting their husbands, sons, and brothers fighting on the various jihadi battlefields in places such as Iraq, Syria, Somalia, Afghanistan, Yemen, Pakistan, and Libya.[13]

French, like Thurston, draws on an extensive set of Sunni jihadi publications including digital magazines and periodicals, audio recordings, books and collections of *fatawa*, and films and videos. His book also includes appendixes of three translated jihadi *fatawa* in response to received legal questions penned by al-Maqdisi and Hamud bin ʿUqla al-Shuʿaybi, a prominent Saudi Salafi jurist who was publicly supportive of al Qaeda and the Afghan Taliban and who taught a number of Saudi Arabia's most influential jihadi-Salafi religious scholars.

In *A History of Palestinian Islamic Jihad: Faith, Awareness, and Revolution in the Middle East*, Erik Skare fills a long-running gap in the scholarly literature on Palestinian politics in general and Palestinian political Islam in particular, as well as on the Arab-Israeli conflict, politics in the Arab world, and religion in the contemporary Middle East. Though Hamas, the largest Palestinian Islamist social movement, has received a great deal of scholarly attention, the Islamic Jihad Movement in Palestine, more popularly known as Palestinian Islamic Jihad (PIJ), has, until now, received far less attention despite the important role it has played in both Palestinian society and the Arab-Israeli conflict. Skare's extremely detailed history of PIJ is even more useful when paired with his separate reader of translated PIJ primary sources, *Palestinian Islamic Jihad: Islamist Writings on Resistance and Religion*.[14] In *A History of Palestinian Islamic Jihad*, Skare draws on interviews with PIJ officials in both the organization's political and military

wings, as well as primary sources produced by PIJ, including the writings of founding members and documents and statements issued by its military wing, the al Quds Brigades.

Despite being overshadowed by Hamas today, PIJ was the first Palestinian Islamist group to take up arms against Israel as part of the broader Palestinian national liberation struggle. PIJ did so at a time when Hamas's precursor, the Palestinian Muslim Brotherhood, opposed armed struggle The first PIJ military operations took place in 1984, predating the first Hamas attack by five years and the founding of Hamas by three years.[15] Founding PIJ leaders and members, including Fathi al Shiqaqi and Ramadan Shallah, participated in study circles while students at Egyptian universities, where they were first exposed to and able to discuss and debate conceptions of nationalism, anticolonialism, and Islamism.[16] The importance of in-person social ties to social mobilization and the development of social networks and trust, which is key when engaging in such high-risk activism, has been clearly demonstrated and discussed in key early works on Muslim social movements.[17]

Since the early 1980s, PIJ was a keen supporter of Ayatollah Ruhollah Khomeini and the Islamization of the Iranian Revolution in 1979. Al Shiqaqi praised Khomeini and his supporters in 1979 in a monograph entitled *Khomeini: The Islamic Solution and Alternative*, and he also penned numerous essays arguing against Sunni-Shi'ite sectarian acrimony and divisions. He viewed rising Sunni-Shi'ite conflict following the Iranian Revolution as the latest in Western colonial attempts to divide and rule the Muslim-majority world.[18] Iran remains one of PIJ's main political and financial backers, alongside the Syrian government of Bashar al Assad, with Iranian support beginning in the 1980s and PIJ, Iranian, and Syrian officials meeting frequently and publicly since that time in Tehran and Damascus. PIJ's al Quds Brigades have, like the military wing of Hamas, the Brigades of the Martyr ʿIzz al-Din al-Qassam, also seen defections since the end of the first decade of the 2000s to a host of small Sunni jihadi groups with affinities to al Qaeda and, later, Islamic State. The latter groups include the organization formerly known as Jamaʿat Ansar Bayt al-Maqdis, which in 2014 morphed into Islamic State's so-called Sinai Province, which continues to battle Egyptian military, police, and allied Sinai tribal militia forces.

To some observers, the territorial collapse of Islamic State's self-declared "caliphate" in Syria and Iraq and the October 2019 suicide of its leader, Abu Bakr al-Baghdadi, seemed to mark the beginning of the end of jihadism as a transnational threat. This assumption has since been proven false with the expansion and consolidation of other Sunni militant Islamist rebel groups. These groups include affiliate branches of Islamic State itself, such as Islamic State-Khurasan Province (IS-KP), IS-WAP, and IS-CAP. IS-WAP has significantly increased its operations in Nigeria, Cameroon, Mali, Burkina Faso, Chad, and Niger. IS-CAP, which draws on manpower from the Allied Democratic Forces rebel group, is active in the Democratic Republic of the Congo, Mozambique, and Uganda and has won official recognition from the centralized Islamic State organization based in Iraq and Syria. There are also concerns that Taliban-ruled Afghanistan will once again become an operational safe haven for al Qaeda and IS-KP, and there are signs that other Islamist VEOs are attempting to stage a comeback in countries including Indonesia and the Philippines.

During a period in which U.S. foreign policy and strategic planning is increasingly focused on competition with China and Russia, Sunni jihadi organizations continue to

influence international security affairs, including the domestic security of the United States and its allies and partners in the Middle East, Africa, and Asia. In-depth knowledge of different types of militant Islamism/jihadism and the dynamics that shape jihadi organizations and influence their decision making and strategic choices are as important today as they have ever been. The books by Thurston, French, and Skare reviewed herein are among the best published in recent years, not only on transnational, local, and regional jihadisms but also in the broader fields of African and Middle Eastern politics, rebellion and political violence, terrorism, and contemporary Islamic political and religious thought.

Endnotes

1.   In this essay, the terms *militant Islamist* and *jihadi* are used interchangeably.
2.   *Hearing on U.S. Africa Command and U.S. Southern Command, before the Senate Armed Services Committee*, 117th Cong. (2021) (testimony by Gen Stephen J. Townsend, USA).
3.   Alexander Thurston, *Salafism in Nigeria: Islam, Preaching, and Politics* (New York: Cambridge University Press, 2016); and Alexander Thurston, *Boko Haram: The History of an African Jihadist Movement* (Princeton, NJ: Princeton University Press, 2018).
4.   Alexander Thurston, *Jihadists of North Africa and the Sahel: Local Politics and Rebel Groups* (New York: Cambridge University Press, 2020), 2.
5.   Thurston, *Jihadists of North Africa and the Sahel*, 6.
6.   Thurston, *Jihadists of North Africa and the Sahel*, 293.
7.   Thurston, *Jihadists of North Africa and the Sahel*, 296.
8.   Thurston, *Jihadists of North Africa and the Sahel*, 47–62.
9.   Nathan S. French, *And God Knows the Martyrs: Martyrdom and Violence in Jihadi-Salafism* (New York: Oxford University Press, 2020), 113–24.
10.   French, *And God Knows the Martyrs*, 120–21.
11.   French, *And God Knows the Martyrs*, 38.
12.   French, *And God Knows the Martyrs*, 59–64.
13.   French, *And God Knows the Martyrs*, 216–23.
14.   Erik Skare, *Palestinian Islamic Jihad: Islamist Writings on Resistance and Religion* (New York: I. B. Tauris, 2021).
15.   Erik Skare, *A History of Palestinian Islamic Jihad: Faith, Awareness, and Revolution in the Middle East* (New York: Cambridge University Press, 2021), 2.
16.   Skare, *A History of Palestinian Islamic Jihad*, 25–27.
17.   Chief among these works are the chapters in Quintan Wiktorowicz, ed., *Islamic Activism: A Social Movement Theory Approach* (Bloomington, IN: Indiana University Press, 2004).
18.   Skare, *A History of Palestinian Islamic Jihad*, 129–30.