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FALL 2022 VOL. 1 NO. 3

FROM THE EDITOR

Dear Reader,

Thank you for taking time to read our fall issue. We are deeply honored to feature as our "Senior Leader Perspective," the French Air and Space Force, *Strategic Vision 2022*, authored by Chief of Staff General Stéphane Mille. In order to deter, defend, and defeat, General Mille requires a force that is audacious in modernization efforts, drawing on the aviator spirit of challenge and innovation; agile, open-minded, and connected; and focused on training and combat readiness of the current and future force. The French Air and Space Force continues to be a stalwart strategic partner for the US Department of the Air Force.

The Honorable Robert Gates, who worked under eight presidential administrations between 1969 and 2011, notably as the director of the Central Intelligence Agency (1991–93) and as the Secretary of Defense (2006–11), once observed that for US presidents, "if they are completely honest with themselves, with rare exception the most vivid memories are not of victory and joy but of crisis and defeat. . . . This is why character counts for so much in a President. In the White House, the elation of victory is fleeting and the burden of responsibility is enduring."[1]

Elsewhere, Gates writes that, unlike most people's conception of the place of a US president at the top of a "pyramid," in truth, the president sits "at the bottom of a funnel," into which on a daily basis "hundreds of thousands of reports from all over the world" are poured. "Every major problem—and a lot of minor ones, too—in the world pops out of that funnel onto that table, where nearly every day that small group of people [typically 8] helps the president decide the fate of our country (and that of many others) and, very often, makes life-and-death decisions."[2]

Among other ideas, our fall issue contemplates some of the consequential and overlapping roles of the US president—commander-in-chief, national security executive, and the lead and final voice in and face of US foreign policy. Analyses of executive orders, past wars, and national strategic documents attest to the "enduring responsibility" of the president. Our first forum, "Policy, Strategy, and the President,"

1. Robert M. Gates, *From the Shadows: The Ultimate Insider's Story of Five Presidents and How They Won the Cold War* (New York: Touchstone, 1996), 574.

2. Robert M. Gates, *Exercise of Power: American Failures, Successes, and a New Path Forward in the Post-Cold War World* (New York: Vintage, 2020), 58–59.

begins with a legal analysis of the notion of military necessity as it applies to cyberspace operations outside of armed conflict but ordered by the president. Thomas Burks argues that reframing conflict as strategic competition restores flexibility to the notion of military necessity, expanding what can be considered a military advantage.

In our second article in the forum, David Lorenzo conducts a case study of the George H. W. Bush administration's actions in the months immediately preceding the Persian Gulf War. He argues the administration engaged a particular typological approach to conflict, one that ultimately identified as a matter of urgency, a favorable resolution of the conflict. In our final article in the forum, Philip Hayek takes a novel approach to the study of the national security strategy. He analyzes it through the lens of rhetorical genre studies and concludes it is an independent genre, one that both reflects the priorities and weltanschauung of its presidential authors as well as constructing and responding to our national security situation.

We then turn to our "Theory and Strategy" forum and Heather Venable's eight themes integral to the study of airpower. A strong intellectual grounding in (1) the history of strategic bombardment, (2) the efficacy of strategic bombardment, (3) a more nuanced model for airpower, (4) balancing direct and indirect airpower, (5) enabling airpower for the future fight, (6) analyzing continuity and change in the history of airpower, (7) civil-military relations, and (8) the role of airpower in the context of other domains of warfare, will prepare future Air Force leaders for strategic and operational success.

Our second article in the forum presents a fresh perspective on Carl von Clausewitz and Space. In particular, Randall Carlson and Ron Gurantz identify four potential sources of space friction that emerge in space strategy and operations: the space environment, spacecraft- maneuvering limitations, space intelligence, and the reliance on complex technological solutions. Mitigating these sources of friction is critical, but the military must also plan for the resulting frictional tradeoffs.

In our final forum, "Africa," Jessica Borowicz argue that given Dji-bouti's location, relative stability, and existing US capabilities and investments in the country, it will remain strategically important for years to come. This is true even as nations along the Bab el-Mandeb Strait develop ports of their own.

In closing, Team Æther would like to recognize and thank our reviewers. These expert academics and practitioners ensure our scholarly credentials and do so without compensation for the many hours spent providing careful feedback on submissions. We depend on their subject matter expertise to keep the journal's content relevant, thoughtful, and well-researched. The journal and its sister operations-focused journal, *Air & Space Operations Review,* are generally categorized as military studies journals, but the research/policy focus across a diverse range of topics including airpower theory, civil-military affairs, science and technology, systems engineering, leadership, military and national security strategy, artificial intelligence, foreign affairs, air operations, space operations, and ethics means our required breadth of subject matter expertise is wide, to say the least.

So to the following individuals, including journal contributors, each an expert in their field by virtue of a terminal degree, a long career, or both, thank you very much for your time— past, present, or promised—spent supporting the journals: Andrew Akin, Christian Anrig, Filomeno Arenas, Todd Arnold, David Benson, Louis René Beres, Robert Bettinger, Michelle Black, Todd Book, Molly Braun, Maria Burczynska, Stephen Burgess, Ryan Burke, Chris Cain, Garick Chamberlin, Andrea Charron, Stephen Cimbala, J. P. Clark, Andrew Clayton, Mark Clodfelter, Damon Coletta, Chris Colliver, Daniel Connelly, Conrad Crane, GK Cunningham, Chad Dacus, Jim Davitch, Melvin Deaile, Everett Dolman, Jared Donnelly, Scott Drylie, Charles Dunlap, Michael Dziedzic, Antulio Echevarria, Michael Eisenstadt, Ryan Engle, James Fergusson, David Finkelstein, Jim Forsyth, Brian Fry, Cristina Garafola, Billy Giannetti, Benjamin Gochman, Derrill Goldizen, Tim Goodroe, Christina Goulter, Heather Gregg, Kelly Grieco, Achala Gunasekara-Rockwell, Ernest Gunasekara-Rockwell, Lawrence Grinter, Stephen Hamilton, Michael Hankins, Dale Hayden, Peter Hays, Jordan Hayworth, Eric Heginbotham, Megan Hennessey, John Hinck, Paul Hoffman, Tim Hoyt, Tony Hughes, JP Hunerwadel, Jonathan Hunt, Wes Hutto, Mark Jacobsen, Benjamin Jamison, Thomas Keaney, James Keeley, Michael Kraig, Matthew Kroenig, Benjamin Lambeth, Brent Langhals, Wiley Larson, Brian Laslie, Sale Lilly, Adam Lowther, Steve Marrin, Richard Marsh, Steve Martinez, Kevin McCaskey, Jared McKinney, Phillip Meilinger, Ann Mezzell, Richard Muller, Brendan Mulvaney, Jason Newcomer, Richard Newton, Lana Obradovic, Galen Ojala, Christopher Paige, David Palkki, Ginta Palubinskas, Mike Pavelec, Joseph Piroch, Brian Price, Kyle Rassmussen, Robert Reardon, Edwin Redman, Christopher Rein, Dan Ritschel, James Rogers, Nick Sambaluk, Tony Sampson, Dan Sanders, Jorg Schimmelpfennig, Joshua Schwartz, Jorge Serafin, Mario Serna, John Shields, Dennis Skocz, Art Speyer, J. William Sutcliffe, Dick Szafranski, Brent Talbot, Michael Tate, Samantha Taylor, John G. Terino Jr., Mike Thomas, Teera Tony Tunyavongs, David Umphress, Gilles van Nederveen, Heather Venable, Mark Visger, James Walsh, Evelyn Watkins-Bean, Larry Weaver, Michael Weaver, Edward White, Wendy Whitman Cobb, Bishane Whitmore, Edie Williams, Michael Young, Michael Zmuda, and Ben Zweibelson. ~ The Editor

DETER—DEFEND—DEFEAT

SUCCEED IN 3D

General Stéphane Mille,
French Air and Space Force
Chief of Staff

Air and Space Force in 2022: An Unrivaled Operational Credibility and Strategic Impact[1]

"If we lose the war in the air and in space, we lose the war, and we lose it quickly." For centuries, the strategies of States were primarily concerned with maritime and land-based environments. The twentieth century experienced a change in conflicts, and in how nations demonstrate their power, especially with the advent of aviation and, later on, space capabilities.

In a little over one hundred years, freedom of movement in the air and space has become essential for all activities in terms of the functioning, prosperity, and security of all nations. The fight for air superiority, and in the future for space superiority, has thus become a priority to ensure the operational superiority of the Armed Forces and prevent strategic paralysis.

In addition, Air and Space power contribute *decisively to the full spectrum of warfare*. They enable us to understand and anticipate, to protect our interests, to demonstrate our solidarity with strategic partners, to display our ambition, to discourage our adversaries, to manage the escalation of tension, and if necessary, fight and defeat (from the 3rd dimension) as part of modern military operations (multidomain).[2]

In order to intervene without delay while tempering the strength of the effects it delivers, the French Air and Space Force relentlessly seeks to challenge by going further, faster, higher, and longer. Innovative by nature, its history and experience allow it to produce rapid ripple effects that contribute to the establishment of solid partnerships. The French Air and Space Force thereby maintains its position, including that of framework nation within coalitions.

1. This is a translated verion of General Stéphane Mille's French Air and Space Force *Strategic Vision 2022*.
2. As explained in the Armed forces employment concept: the term "domain" usually encompasses the land, air, maritime, space, cyberspace, as well as the electro-magnetic and informational spaces.

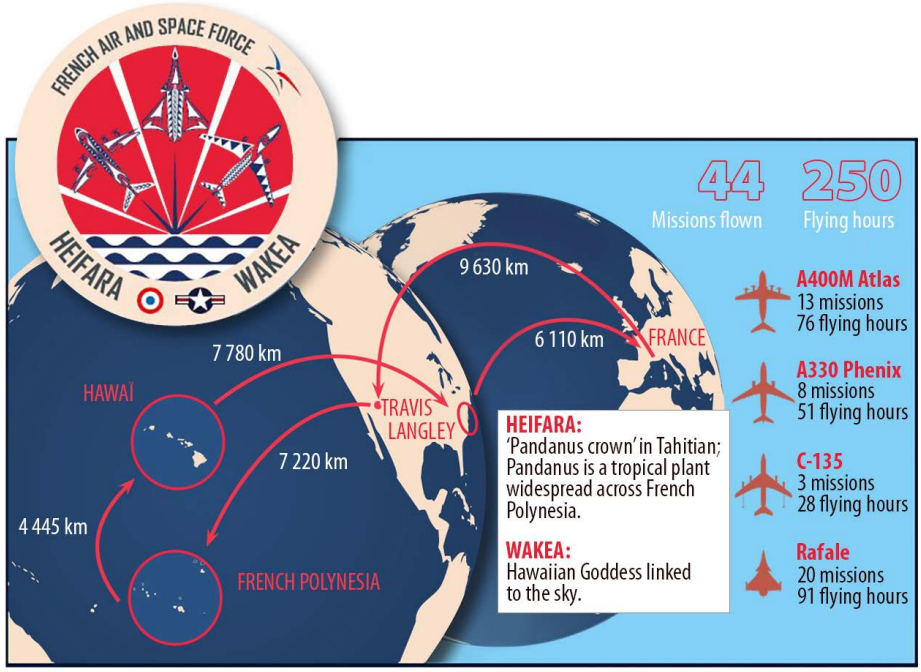

Figure 1: Mission and flying hours

The Air and Space Force has been deeply involved in the operations of the past three decades. The Service's quick responsiveness, efficiency, credibility, agility, and versatility are the essential elements to the credibility of our position as power of balance on every continent.[3]

Our Freedom of Action in the 3rd Dimension Is Contested

After 30 years of progress, including technological progress, reductions in the shape of Western air combat fleets and a decade of major investment by some competitors are challenging the air superiority—the determining factor of operational superiority—of Western armed forces.

The air superiority and freedom of access to space that Western armed forces have enjoyed for the past 30 years is being challenged by:

- A drive towards stepping up, whereby an increasing number of states are investing massively in the development and fielding of combat systems, as well as efficient disruptive weapons and area-denial systems.

3. Quick Reaction Alert, Gulf War, former–Yugoslavia, Libya, the sub-Saharan region, Middle-East including Operation Hamilton (2018), Afghanistan with Operation Apagan (2021), as well as Operations Sentinel, Irma, Resilience, etc.

- The proliferation of modern offensive and defensive systems in vast zones where air power in particular, has been expanding since 2014.
- The use of low-cost defensive systems, a "poor man's air power," sometimes to the point of saturation. Their cost-effectiveness ratio is unfavourable to the defender; it can even change the balance of power on a local scale.
- The rise of threats in space is also a factor, through dual capabilities of systems the intentions of which are unclear. The number of satellites put into orbit every year has multiplied by 10 over a decade. This tendency is accelerated by the development of constellations numbering thousands of satellites, as well as Chinese and Russian new military capabilities (hypersonic orbital weapons, blinding and jamming activities, antisatellite (ASAT) weapons).

In fact, the fight for air superiority is already a reality. Over the last decade, 98 fighters, 60 helicopters, 24 transport aircraft and 335 drones have been shot down or destroyed, essentially at the doorstep of Europe.[4] The war waged by Russia in Ukraine since February 24, 2022 has already significantly increased these figures.

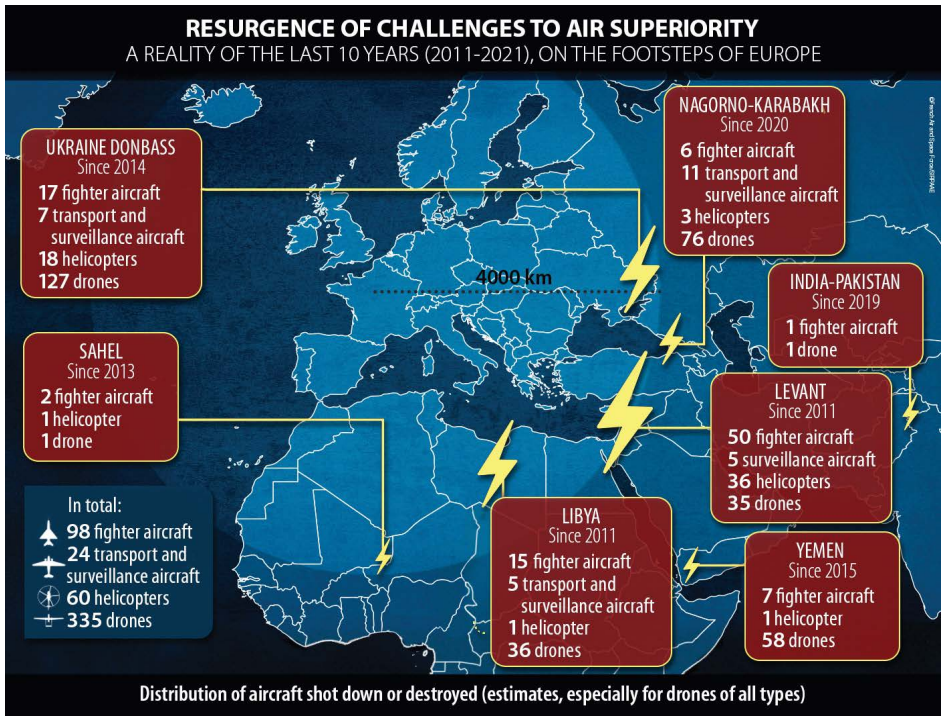

Figure 2. Resurgence graphic

This upward trend could rapidly extend into the space domain.

4. Syria and Iraq, Libya, Ukraine (Donbas), and Nagorno-Karabakh.

Threats Are Spreading into Space

Aviators face numerous challenges to our freedom of action in the sky and in space. Every day, the possibility of space becoming a battlefield is more credible.

Space has become a fertile ground for strategic confrontation with an estimated 34,000 objects larger than 10 cm and another 900,000 larger than 1 cm in orbit. There is also an increasing number of launches and tens of thousands of satellite constellations in development.

This trend, complicated by the ambiguous purpose of dual-use capabilities, has led several countries to strengthen their capacities to act across the whole spectrum of competition, contestation, and confrontation, even in space:

- Competition: by preempting certain scarce resources (orbital positions, frequencies, etc.);
- Contestation: through cyber activities, by maneuvering satellites to positions for the purposes of intelligence gathering, interception of signals or jamming, blinding observation satellites, etc.;
- Confrontation: by developing capabilities to destroy orbiting satellites with directed-energy weapons, armed satellites, or more spectacularly by launching ASAT weapons either from the ground or the air.

In an increasingly uncertain world and with the growing number of military threats close to our national territory or to our deployed forces, we are facing the risk of falling into military paralysis and strategic decline.

The Air and Space Force Chief of Staff's Intentions

In an uncertain strategic environment where high-intensity conflict is once again becoming a possibility and a challenge to air and space superiority, I demand an Air and Space Force that is:

- Audacious, by drawing on our aviator spirit of challenge and innovation in order to accelerate its modernization;
- Agile, open-minded, and connected, transforming our society's core evolutions into opportunities and operational advantages;
- Focused on the training and combat-readiness of today's force, while also committed to the training of the next generation.

This will guarantee the current nuclear deterrence posture and the safety of our airspace (soon to be air and space) while generating decisive effects from the 3rd dimension in order to Deter–Defend–Defeat.

We will deter a competitor or a potential adversary from weakening France's positions, threatening its interests, or hindering its freedom of action by conducting intelligence-gathering missions in order to anticipate crises and undertaking rapid

actions to counter fait accompli policies. We will carry out visible but reversible actions to show our determination and send a clear political message to our challengers.

We will defend and protect our citizens and deployed forces wherever they may be, always ready to rapidly launch noncombatant evacuation operations or to provide assistance during crises or natural disasters.

We will defeat any enemy's attempt to forcefully impose their will upon us, including in a high-intensity conflict, by guaranteeing the commitment of our aviators and air and space forces in a major conflict, through joint efforts, within alliances or coalitions.

Accelerate the Modernization of the Air and Space Force

Finding the right balance between quality and quantity:

In the Air and Space Force, the versatility of our equipment and personnel enabled us to compensate in part for the downsizing of our capabilities over the last decades. Given the evolution of the strategic context and of the evolving threats, our requirements, in particular those of our fighter force, defined by the operational ambition, have now reached a minimum level that should be redressed as a priority. Without modifying our operational ambition, our Rafale Force must reach the levels set in the current Military Planning Act as soon as possible.[5] The risk of attrition is now a reality.

This logic of finding the right balance has to be applied to all our capabilities such as air-to-air refueling, strategic and tactical airlift, ground-to-air defence systems, ammunition stocks, mission-essential equipment and pre-deployment stores packs. In relation to space, redundancy must be considered, including the use of constellations or reactive launches. The fragile balance must enable us to possess sufficient mass in order to be efficient in the context of constant competition, to be resilient during contestation, and to have the ability to succeed in times of confrontation.

Learning Lessons from Recent Engagements

Drones

The increasing use of drones, from nano to strategic and including low-cost options, highlights the need to protect sensitive sites but also to integrate the capabilities into a centralized aerospace management system. With 15 years of experience deploying drones in operational theatres combined with specific responsibilities in the field of airspace coordination, the Air and Space Force must strengthen its capabilities to detect, classify, identify and manage all types of drone activity both on operations and at home. The upcoming 2024 Olympic Games forces us to accelerate the changes required.

5. Loi de programmation militaire.

Using and Protecting Ourselves from the Power of Communication

As early as the conception phase of an exercise, deployment, or operation, aviators must develop the communication strategy specific to their mission. The aim is to maximize the impact of activities taking place in the 3rd dimension. From the earliest stages of planning for an activity, it is important to "know how" we can exploit our aviator's "know-how" which is maintained to the highest standard!

Likewise, information is increasingly being manipulated. Our aviators' professionalism and the success of our operations are being manipulated. Before engaging the Air and Space Force on operations, a thorough analysis will need to take this new trend into account systematically, before proposing different courses of action to the Joint Commander.

"Learn from our recent engagements in order to guarantee the operational efficiency of the Air and Space Force both offensively and defensively."

SEAD (Suppression of Enemy Air Defence)

Air superiority relies on two fundamental and complementary pillars: dominance in air combat superiority and the neutralization of enemy ground-to-air defence systems. SEAD capabilities are essential once more in order to ensure the coherence and freedom of our action in a contested environment. An in-depth knowledge of adversary capabilities and functioning is required as soon as "competition" begins. Once fighting begins, we require the ability to neutralize these systems (through jamming or destruction).

Monitoring and Intervening in Space

Owing to the numerous stakeholders in space and the congestion of orbits, the competition for access to this environment is likely to be arduous. Understanding what is happening in space is essential, therefore being able to protect and defend our space capabilities is also essential. This requires the implementation of command and control means for the space domain which, as a matter of priority, will require strong links with air and joint C2 organizations.

Necessary Incremental Technologies

- Collaborative combat will harvest our ability to retain air superiority, a key prerequisite to military operations in the face of current and future threats. Resorting to the *connectivity* of all combat systems brings the challenge of balancing *interoperability*, the use of artificial intelligence within defence systems, and the ability to control and exploit *mass data* effectively.
- Hypervelocity is a technological breakthrough with both tactical and strategic consequences. Expected to be operational in 2035, the implementation of the ASN4G missile within the French Air and Space Force will enable us to join the very restricted circle of great powers who master this technology. This industrial

and operational achievement, in addition to consolidating the credibility of the airborne nuclear component, will benefit our conventional capabilities.

- Exploiting mass data will play a central role in our operations as well as in our daily lives. There is a requirement to structure, store, share, and process the data generated by all sensors in order to facilitate decision making. The importance of data will force us to adapt our internal organization as well as the training of aviators. These changes will result from experimentation and an iterative process promoting in particular the use of synthetics and artificial intelligence. In addition to its tactical applications, digitization will affect the fields of space, force development, management, and human resources in particular.
- Finally, it will be imperative for the Space domain to fully exploit the opportunities offered by disruptive or dual technologies, some of which are already available: constellations, quantum technologies, etc. The twenty-first century will be "spatial."

Be Open-minded, Agile, Connected, and in Symbiosis with the Nation

These transformations must be the answer to our aviators' expectations by positioning them at the forefront of a responsible Air and Space Force where digitization, modernization, and sustainable development work hand-in-hand toward a common goal: operational effectiveness.

Open to Joint Cooperation

More effort is required to digitize operations and connect our equipment and command structures. The agility and federating capabilities of Air C2 will enable the Chief of the Defence Staff (or nominated representative) to make swift decisions, thereby increasing the enemy's tactical dilemmas. The mastery of these factors will lead to greater initiative and decisive advantage. This is at the heart of integrated Multidomain operations.

Driving Inter-Ministerial Cooperation

State-sponsored air missions are ever increasing; the proliferation of stakeholders in the 3rd dimension brings many challenges in terms of threats and air traffic management. It is essential to respond to these new challenges and maintain the highest level of airspace security without waiting for the high visibility events planned for 2023 and 2024. The Air and Space Force will share its ability to federate the dynamic environments of air and space to further improve the efficiency of State actions in the air environment.

Stronger with Our Allies

Over and above the ability to carry out national operations, the Air and Space Force will continue to operate within coalitions or indeed to lead them, integrating allies and partners. Specifically, the *interoperability* of our equipment and processes continues to be a constant challenge, exemplified by the arrival of the F35 in Europe. In fact, the Air and Space Force actively cooperates widely with an international network; a key support for the execution of potential worldwide action.

Committed to a Sustainable Approach

All modernization effort must consider our sustainability impact. The Air and Space Force is committed to the Ministerial energy strategy, which aims for our consumption to be optimized, reduced, and secured, while ensuring that the energy is a tool to ensure operational superiority.

Concerning the environment, air bases provide real estate that is conducive to biodiversity; they will be mobilized for a significant reduction of their carbon footprint by 2030.

Likewise, initiatives in terms of youth, inclusion, occupational and social integration, as well as equal opportunities will be considered in an ambitious plan. Specific initiatives implemented by our aviators will be scaled up to all our air bases.

Preparing Today's Fighter and Envisioning Tomorrow's Aviator

Preparing Aviators for High-Intensity Conflicts

Adequate organization, preparation, and team spirit enable seamless transitions from training to operations. Given that an aviator's daily life, as a combat tool of the Air and Space Force, takes place on an air base, local commanders play close attention to their physical, technical and mental preparation. The functioning of air bases and the maintaining of quick reaction postures also relies on the commitment of the air reserve component. With a decrease of 15,000 aviators over the last 15 years, the Air and Space Force relies more than ever on its reserve component which contributes to our nation's resilience through its engagement.

Making decisions in times of crises requires strong commitment and deep thinking regarding mission objectives and relies on a well-reasoned use of force. Ethics, the first pillar of leadership, guides aviators' actions.

Training More Efficiently

In order to motivate an aviator with the operational need in mind, there is a requirement to ensure training is modernized, optimized, shortened, and improved. Coherence and continuity between phases of training is essential. Indeed, it is imperative to monitor technological evolutions and adapt training accordingly. Current

training programs must be reviewed, taking the relevant status and rules into consideration in order to ensure that training can be flexible and more easily adaptable.

Envisioning Tomorrow's Aviator

Our aviators' spirit and moral fortitude are at the heart of the Air and Space Force's efficiency. The *commitment* of aviation pioneers whose footsteps we follow continues to be a source of inspiration. *Audacity* and *passion* have characterized aviators since the birth of aeronautics. Strengthened by this legacy, aviators continue to look as far and as high as possible. They anticipate the evolution of their missions, they envisage the new skills they'll require, and they adapt their know-how. The rise of disruptive technology opens the door to *exciting prospects*, jobs, and ways to operate. Aviators must be ready to step up to the challenge.

In order to successfully implement the rise of defence in space, all aviators require an acclimatization to space concerns. The implementation of a "space" career path and associated specific training will strengthen the next generation with lasting expertise in space operations—a specific environment demanding specific skills. **Æ**

MILITARY NECESSITY
POLICY-CAPABILITY TENSIONS

Thomas R. Burks

The requirement to conduct cyberspace operations outside of armed conflict but consistent with law-of-armed-conflict principles limits US Cyber Command to a best-tool or whole-of-government approach to national security, creating tension between the command's capabilities and what policy allows it to do. Reframing conflict as strategic competition resolves this tension by restoring military necessity's flexibility, which, in turn, expands what may be considered a military advantage or benefit.

On the eve of the 2018 US midterm elections, US Cyber Command (USCYBERCOM) personnel infiltrated and disrupted networks at the Internet Research Agency (IRA), a civilian corporation headquartered in St. Petersburg, Russia.[1] The operation's apparent purpose was to prevent the IRA from using online resources to interfere with the elections, an objective USCYBERCOM achieved by cutting off the IRA's internet access.

That the United States undertook such a cyberspace operation is unsurprising given Russia's alleged use of the IRA to influence elections in 2016 and the likelihood of a repeat performance.[2] Nor is it surprising the United States would use a military unit this way. The 2017 *National Security Strategy of the United States of America* and 2018 *National Cyber Strategy of the United States of America* contemplate a whole-of-government approach to national security that suggests any number of executive branch organizations might have been chosen as the best tool for the job. The Department of Defense (DoD) is often called upon to conduct activities outside its traditional mission set.[3]

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1. Ellen Nakashima, "U.S. Cyber Command Operation Disrupted Internet Access of Russian Troll Factory on Day of 2018 Midterms," *Washington Post,* February 27, 2019, https://www.washingtonpost.com/.

2. Council on Foreign Relations (CFR), "Targeting of Internet Research Agency," Cyber Operations Tracker, February 2019, https://www.cfr.org/cyber-operations/.

3. Rosa Brooks, *How Everything Became War and the Military Became Everything: Tales from the Pentagon* (New York: Simon & Schuster, 2016); and Mackenzie Eaglen, "Just Say No: The Pentagon Needs to Drop the Distractions and Move Great Power Competition beyond Lip Service," War on the Rocks, October 28, 2019, https://warontherocks.com/.

Still, it is curious that USCYBERCOM was a viable option given the contents of the DoD law of war policy in effect at that time. The law of war is a body of international law divided into two broad categories: (1) jus ad bellum, which governs whether armed force may be employed, and (2) jus in bello, which regulates the conduct of belligerents once a conflict has begun.[4]

The second category, jus in bello, is generally known as the law of armed conflict (LOAC). As the term LOAC implies, this body of law is applicable only during an armed conflict. But the DoD law of war policy in effect in 2018 required adherence to the law of war in all military operations, even when those operations occurred outside an area of armed conflict.[5] Adherence to the LOAC was required as a matter of policy even when it was not required as a matter of law.

The USCYBERCOM operation would thus have had to comply with LOAC principles, such as the principle of military necessity, even though Russia and the United States were not at war. Applying the principle of military necessity to less-than-war cyberspace operations and meeting its requirements is easier said than done. The reason for this difficulty is that the definition of military necessity presumes the existence of an armed conflict, and the armed conflict itself shapes what is militarily necessary for achieving its ends.

Though the principle is inherently flexible, in the absence of an armed conflict, military necessity must be determined in a vacuum where the military component of the term takes center stage. Focusing on the military component means an operation must include a military benefit or advantage before it may be considered a military necessity.

The USCYBERCOM operation falls short of this standard because it targeted the IRA, a civilian company with no apparent connection to the Russian military, to defend the American electoral process against malicious cyber actors—a worthy national security objective but certainly not a military one. The operation thus included no military benefit or advantage and was not a military necessity.

The Department of Defense might agree with this assessment because in the years following the IRA operation, it changed its policy to require consistency with the law of war rather than strict adherence to the law of war.[6] While this change made the policy more flexible, it did not resolve the issue, since the primary shaper of military necessity (the armed conflict) was still missing. The principle of military necessity as policy must therefore still be judged in a military-focused vacuum, which means USCYBERCOM's operation against the IRA would fail the military necessity test even under today's more relaxed policy standard.

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4. International Committee of the Red Cross (ICRC), *International Humanitarian Law: Answers to Your Questions* (Geneva: ICRC, 2014), 8, https://www.icrc.org/.

5. General Counsel of the Department of Defense (GC DoD), *DoD Law of War Program*, Department of Defense Directive (DoDD) 2311.01E, Incorporating Change 1, November 15, 2010, certified current as of February 22, (Washington, DC: GC DoD, February 22, 2011), 2, https://www.esd.whs.mil/.

6. GC DoD, *DoD Law of War Program*, DoDD 2311.01 (Washington, DC: GC DoD, July 2, 2020), https://www.esd.whs.mil/.

Requiring military operations to comply or be consistent with the principle of military necessity thus creates tension between what the military is capable of and what the DoD law of war policy permits. Fortunately, relieving this tension does not demand revisions to law or policy. All that is required is adjusting how one views the context in which less-than-war cyberspace operations are employed and, in turn, changing how these operations are analyzed for policy compliance.

Stated simply, if the lack of a conflict created the policy-capability tension, a conflict must be added to the analysis. This is not to say that armed conflict should be pursued in the interest of policy clarity, but that conflict must be reframed in a manner that reflects the circumstances where these operations occur, namely, in strategic competition. With conflict thus reframed, the historical flexibility of the principle is restored, and the military necessity of USCYBERCOM operations may be judged by what is necessary to achieve the strategic competition objectives given to the command. Reframing conflict resolves the tension between DoD law of war policy and less-than-war cyberspace operations, which enables the use of the Department of Defense and USCYBERCOM in a best-tool approach to national security.

Principle of Military Necessity

The law of armed conflict is fundamentally a balance between the "necessities of war" that typically require death and destruction and the "requirements of humanity," which require saving lives and reducing human suffering to the extent possible.[7] This balance is achieved by permitting the use of any amount of force in an armed conflict that is militarily necessary, as long as it does not violate the other LOAC components.[8]

Military necessity is thus the starting point for judging the LOAC compliance of belligerent activities in war. Without it, the analysis never proceeds to rules such as distinction, which permits militarily necessary attacks on military objectives but not civilian ones, and proportionality, which prohibits otherwise lawful activities if the incidental loss of civilian life, injury to civilians, or damage to civilian objects is "excessive in relation to the concrete and direct military advantage anticipated."[9] This lynchpin status begs the question, exactly what is military necessity?

The principle of military necessity has its roots in the code of conduct President Abraham Lincoln issued to the US Army during the Civil War.[10] Article 14 of this code, generally referred to as the "Lieber Code," defines military necessity as "those

7. Yoram Dinstein, *War, Aggression, and Self-Defence,* 4th ed. (Cambridge, UK: Cambridge University Press, 2005), 101; and ICRC, *Answers to Your Questions*, 6.

8. Dinstein, *Self-Defence*, 19.

9. Secretariat of the United Nations, "No. 17512, Protocol 1, part 4, sec. 1, chap. 2, art. 51," in *Treaties and International Agreements Registered or Filed with the Secretariat of the United Nations*, vol. 1125 (New York: UN, January 23, 1979), https://treaties.un.org/.

10. Abraham Lincoln, *General Orders No. 100: Instructions for the Government of Armies of the United States in the Field* (Washington, DC: Adjutant General's Office, April 24, 1863), https://avalon.law.yale.edu/.

measures which are indispensable for securing the ends of the war."[11] A key lesson derived from the principle's application during the Civil War is that the principle of military necessity is inherently flexible and shaped by armed conflict. For example, the Lieber Code's definition of military necessity was used to justify the burning of raw cotton to prevent the funds generated by its export from being used to arm and provision the Confederate Army.[12]

Foiling the logistical capabilities of an adversary is an oft-used war measure, but it is noteworthy that military necessity also justifies actions that do not involve force or meet typical military objectives. For example, the "civil chaos" that erupted in reconquered Southern territory made it increasingly difficult to conduct military operations effectively and eventually resulted in the creation of military provost courts to handle civil disputes.[13] This is not a function the US military normally performs, but it was a military necessity in the context of that armed conflict.

Additionally, in freeing the slaves in the areas of rebellion, the 1863 Emancipation Proclamation was justified as a measure for reducing the South's labor force and the Confederacy's ability to provision and equip its armed forces. The Emancipation Proclamation was thus a "fit and necessary war measure" by which President Lincoln could "suppress [the] rebellion."[14] This made Lincoln's edict a military necessity even though it did not involve traditional military force and met a national security objective (preserving the Union) rather than a tactical or operational one.

As applied in the Civil War, the principle of military necessity was inherently flexible and expansive enough to include measures necessary for achieving the aims of that conflict, even if those measures were atypically military or nationally focused. After the Civil War, the principle of military necessity and the humanitarian limitations also found in the Lieber Code quickly gained international recognition and over time became a part of the LOAC.[15]

Today, the Department of Defense defines military necessity as the "principle that justifies the use of all measures needed to defeat the enemy as quickly and efficiently as possible that are not prohibited by the law of war."[16] The DoD definition is consistent with that used by the American Tribunal at Nuremberg, which found that military necessity "permits a belligerent, subject to the laws of war, to apply any amount

11. Lincoln, *General Orders*, art. 14.

12. Burrus M. Carnahan, "Lincoln, Lieber and the Laws of War: The Origins and Limits of the Principle of Military Necessity," *American Journal of International Law* 92, no. 2 (April 1998): 226, https://blogs.loc.gov/.

13. Carnahan, "Lincoln, Lieber," 224.

14. Abraham Lincoln, Emancipation Proclamation, January 1, 1863, presidential proclamations, 1791-1991; record group 11; general records of the United States Government; National Archives, https://www.archives.gov/.

15. Lincoln, *General Orders*, arts. 14, 16; and Gary D. Solis, *The Law of Armed Conflict: International Humanitarian Law in War* (Cambridge, UK: Cambridge University Press, 2010), 259–60.

16. GC DoD, *DoD Law of War Manual*, (Washington, DC: GC DoD, December 2016), 52, https://www.hsdl.org/.

and kind of force to compel the complete submission of the enemy with the least possible expenditure of time, life, and money."[17]

These modern definitions of military necessity retain the core aspects of the original, which suggests the principle and its key characteristics—flexibility and shaped by armed conflict—remain unchanged even though the LOAC humanitarian components that restrain military necessity have changed considerably.

Limitations of Military Necessity as Policy

Applying the principle of military necessity in an armed conflict is often not simple or easy, but after decades of experience, the Department of Defense is accustomed to its requirements and the other LOAC principles that accompany it. When military necessity is applied as a matter of policy outside the context of armed conflict, that application can become problematic. The USCYBERCOM operation against the Internet Research Agency ably demonstrates this point.

Operation against the IRA

In 2014, Russian nationals working for the IRA embarked on a two-year disinformation campaign aimed at influencing US elections. As detailed in a subsequent federal indictment, the IRA adopted the personas of real and fake American persons and used these personas to spread various messages. Some messages were designed to favor one candidate or disadvantage another, while other messages sought to suppress some voting blocs and to influence the votes of others.[18] The evidence suggests these were not the activities of independent actors but rather the actions of a Russian Federation proxy and thus the actions of the Russian Federation. This was certainly Congress's conclusion.[19]

Exactly how well the IRA's campaign worked is impossible to tell. What can be said is that a Russian government proxy influenced the 2016 election to some degree and cast doubt on the veracity of the American electoral process and its results. Not to be outmaneuvered again, the United States took a more proactive approach for the 2018 midterm election. Part of this effort reportedly involved USCYBERCOM personnel accessing IRA systems and shutting them down shortly before Election Day, thereby removing the so-called trolls from the internet and their access to American voters.[20]

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17. United States v. Wilhelm List et al., United States Military Tribunal at Nuremberg, Germany, 1948, 11 *NMT* 1230, 1253.

18. United States v. Internet Research Agency LLC, et al., Case 1:18-cr-00032-DLF (Washington, DC, February 16, 2018), 3–4, https://www.justice.gov/.

19. S. Rep. No. 116-290 vol. 2 at 4-5 (2020), https://www.congress.gov/.

20. Nakashima, "Cyber Command Disrupted;" and Zachary Fryer-Biggs, "The Pentagon Has Prepared a Cyber Attack against Russia," The Center for Public Integrity (website), November 2, 2018, https://publicintegrity.org/.

The involvement of USCYBERCOM was officially acknowledged in 2020 when then-President Donald Trump confirmed he had ordered the operation.[21] As the "sole organ of the federal government in . . . international relations" and in their role as the ultimate military commander, US presidents have substantial constitutional authority to determine which elements of the executive branch are employed to achieve national security objectives.[22]

Congress also has foreign policy responsibilities and in exercising its constitutional authority has long indicated approval of the use of USCYBERCOM for this type of clandestine operation.[23] From an international law perspective, the operation against the IRA was not a use of force, does not appear to have violated the principle of nonintervention, and because it occurred outside of an armed conflict and did not constitute an attack, LOAC rules did not apply as a matter of law.[24]

Accordingly, from international and domestic law perspectives, the cyberspace operation against the IRA appears to have been completely legal, and Trump was well within his authority to choose USCYBERCOM for its execution. (Incidentally, cyberspace operations must also comply with domestic statutes such as the Wiretap Act, Computer Fraud and Abuse Act, and the Hatch Act. Compliance is assumed for this article's purposes.)

Compliance with Policy

Legality notwithstanding, the question remains whether the IRA operation was consistent with DoD policy, which at the time required all military operations to comply with the LOAC.[25] Judging the LOAC compliance of the IRA operation must begin with the principle of military necessity, which again permits "the use of all measures needed to defeat the enemy as quickly and efficiently as possible that are not prohibited by the law of war."[26]

The available information indicates the IRA operation did not meet this standard for two reasons. First, the cyberspace operation was conducted outside of an armed conflict, which means no objectives or end state existed to define what winning the conflict looked like. Consequently, there was no way to determine whether the operation was necessary for achieving those ends.

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21. Nakashima, "Cyber Command Disrupted;" and Marc Thiessen, "Trump Confirms, in an Interview, a U.S. Cyberattack on Russia," *Washington Post,* July 10, 2020, https://www.washingtonpost.com/.

22. US Const., art. II, §§ 1, 2; and United States v. Curtiss-Wright Corp, 299 U.S. 304, 320 (1936).

23. National Defense Authorization Act for Fiscal Year 2012, Pub. L. No. 112-81, § 954 (2011); and Authorities Concerning Military Cyber Operations, 10 USC § 394(a), amended Pub. L. 115–232, div. A, title XVI, §§ 1631(a), 1632, 132 Stat. 2123 (2018).

24. Charter of the United Nations, Articles 2(4), 2(7), https://legal.un.org/, and https://legal.un.org/; Military and Paramilitary Activities in and Against Nicaragua (Nicar. v. U.S.), Merits, Judgment International Court of Justice. Reps. 1986, 14, ¶ 205, https://www.icj-cij.org/; and Secretariat of the United Nations, Protocol 1, art. 49.

25. GC DoD, DoDD 2311.01E, 2.

26. GC DoD, *Law of War Manual*, 52.

Second, in the absence of an armed conflict that might expand military necessity, one must look to the military aspect of the principle to determine whether its requirements have been met. In a military-focused analysis, the IRA operation would have to have offered a military benefit or advantage, criteria that an operation targeting a civilian corporation staffed by civilians and owned by a civilian oligarch did not meet.[27]

Additionally, the operation did not target Russian military capability but the broader Russian Federation's ability to influence US elections. Consequently, while USCYBERCOM's protection of US elections helped achieve a national security objective and may even have foiled a component of Russian grand strategy, its operation achieved no military benefit or advantage and was not a military necessity.

There are counterarguments to this assessment. It could be argued, for example, that the IRA operation was a military necessity because it was ordered by the commander-in-chief and executed by a military unit under the orders of the secretary of defense. Actions necessary for meeting the task's objectives are therefore a military necessity. This line of reasoning is attractive because it is easy to apply and permits the broad use of USCYBERCOM.

But this argument is flawed for two reasons. First, it only applies to subordinate forces; personnel at the highest levels of government that determine whether a proposed order meets legal and policy requirements must determine whether military necessity exists before the order is ever issued. Second, the act of issuing military orders does not itself create legal and policy compliance. The opposite is true, meaning compliance with law and policy must be established before the order may be carried out. This is why military personnel have an affirmative duty to disobey unlawful orders.[28] Therefore, the existence of military necessity is a conditional precedent for order issuance, not its result.

It could also be argued that even if this assessment was once correct, it is now irrelevant because DoD policy was revised, and it no longer requires adherence to the law of war but rather only consistency with its principles. Under this more flexible regime, a purely military advantage or benefit may not be required for policy compliance.

Still, before concluding the new policy's flexibility has freed military necessity of its military-centric focus, one should consider how closely related components of the LOAC inform the meaning of military necessity. The rule of distinction requires distinguishing between civilians and military personnel and between military objects and civilian objects to ensure civilians and their objects are not targeted. Under the law of armed conflict, an object is considered a military object if its "nature, location, purpose, or use make[s] an effective contribution to military action and whose total

27. United States v. Internet Research Agency, 2; Maxim Trudolyubov, "Vladimir Putin's Parallel State," The Russia File (blog), February 21, 2018, https://www.wilsoncenter.org/; and Zack Beauchamp, "Meet the Shady Putin Crony Funding Russia's Troll Farm and Mercenary Army," Vox, February 26, 2018, https://www.vox.com/.

28. GC DoD, DoDD 2311.01, 3, 12; Uniform Code of Military Justice, 10 U.S.C. §§ 890, 892 (2019); and Joint Service Committee on Military Justice (JSCMJ), *Manual for Courts-Martial*, "Article 90," 16.c.(2)(a) (Washington, DC: JSCMJ, 2019), https://jsc.defense.gov/.

or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage."[29]

This definition clearly contemplates a military advantage before an object can be targeted. The USCYBERCOM operation against the IRA fares just as poorly under the rule of proportionality, which prohibits damage to civilian objects when the damage is "excessive in relation to the concrete and direct military advantage anticipated."[30] Given that distinction and proportionality are derived from and predicated on military necessity, it follows that the existence of a military benefit or advantage is still necessary even under the revised policy.

The increased flexibility of the Department's current law of war policy thus did not resolve the problems of its predecessor. This means that unless "military" is read out of that principle, a draconian step not contemplated by either version of the DoD policy, the principle of military necessity remains predicated on achieving a military advantage or benefit.

But as the Lieber Code's application in the Civil War demonstrates, even operations that do not involve force or traditional military objectives can meet the requirements of military necessity as long as the operation is necessary for achieving the ends of the conflict in which it is employed. Therefore, it is the lack of a conflict, not per se the military focus of military necessity, that locks the principle into a military-focused vacuum. The key to unlocking military necessity's inherent flexibility, and thus expanding the types of operations that can meet its requirements, lies in having a conflict against which the military necessity of less-than-war cyberspace operations may be judged.

Reframing the Conflict

Strategic Competition

Unless an actual war is to be pursued in the interest of easier analysis, something not suggested or advisable, giving these operations a conflict means reframing conflict as something other than armed conflict. The current state of international affairs—the state in which it has existed for most of the last few centuries—suggests strategic competition is the leading candidate. Such reframing is not possible in the case of an actual armed conflict, which is a status defined by international law.[31]

But flexibility in terms and in their application is permissible in policy spaces that seek to occupy areas the law does not. There is no set definition for strategic competi-

29. Secretariat of the United Nations, Protocol 1, art. 52.2; National Defense Authorization Act for Fiscal Year 2010, 10 U.S.C. § 950p(a)(1).

30. Secretariat of the United Nations, Protocol 1, art. 51 (emphasis added).

31. "Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field," arts. 2–3, August 12, 1949, 6 UST 3114; and 75 UNTS 31, https://treaties.un.org/.

tion, and the United States has not chosen a unified approach.[32] For this discussion, it is enough to observe its foundational principles and understand how they can be used to formulate a new way of looking at conflict.

The modern state, born in seventeenth-century Europe, was founded on two key principles: (1) states are abstract and enduring entities that exist in their own right; and (2) states have national interests that each state has a sovereign right to pursue.[33] Of course, activities that further one state's interests do not necessarily promote the interests of others and can be at cross-purposes with those of other states. These actions inevitably lead to friction and rivalry as states seek to further their interests and provide themselves a comparative advantage in the pursuit of "nationalist ambitions [and] passions."[34]

The competitive pursuit of national interests is often referred to as great power or strategic competition.[35] This article will use the term strategic competition since not all states against which the United States competes can rightly be considered a great power. In centuries past, strategic competition frequently resulted in the use of war as a means of furthering state interests.[36] But the adoption of the UN Charter and its prohibition on the "threat or use of force" except under narrow circumstances greatly limited the ease with which states could choose armed force to achieve state interests.[37]

The removal of force as an option did not eliminate armed conflict, but it made force less easily resorted to and consequently made the less-than-war tools of international relations even more important than they already were. Modern strategic competition is characterized by states preparing for military conflict as a deterrent to armed force while using less-than-war options, including diplomacy, economic policy, sanctions, espionage, cyberspace operations, and influencing through information, to pursue their national interests. This strategic competition is the battle in which the United States is presently engaged, making it the conflict relevant to the reframing discussion.

Pros and Cons

Reframing the conflict as strategic competition has three key benefits. One, it adopts a conflict in which the United States is already engaged and for which it has

32. Alexander Boroff, "What is Strategic Competition Anyway?," Modern War Institute, April 4, 2020, https://mwi.usma.edu/; and Ali Wynn, "The Need to Think More Clearly About Great-Power Competition," RAND Corporation, February 11, 2019, https://www.rand.org/.

33. Henry Kissinger, *World Order* (New York: Penguin Books, 2014), 22.

34. Robert Kagan, *The Return of History and the End of Dreams* (New York: Vintage Books, 2008), 3.

35. Donald J. Trump, *National Security Strategy of the United States of America* (Washington, DC: White House, December 2017), 27, https://trumpwhitehouse.archives.gov/; and James N. Mattis, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Office of the Secretary of Defense, January 2018), 1, https://dod.defense.gov/.

36. Dinstein, *Self-Defence*, 176; and James Turner Johnson, *Ethics and the Use of Force: Just War in Historical Perspective* (Farnham, England: Ashgate Publishing Limited, 2011), 39.

37. UN Charter, art. 2(4), 44, 51.

identified national interests and objectives. There is thus no new ground to be broken to enable the reframing. Two, reframing the conflict as strategic competition has the potential to expand what type of less-than-war operations can be considered a military necessity. Indeed, once military necessity is freed from its military-centric focus, the Department of Defense and USCYBERCOM may be used for operations (within legal limits) that meet broad national security objectives without regard to an operation's purely military benefit or advantage.

Three, reframing conflict as strategic competition provides the Department of Defense with a policy framework to which it is accustomed and through which LOAC-as-policy seamlessly transitions into LOAC-as-law should an armed conflict break out. Reframing the conflict thus enables a best tool or whole-of-government approach to national security that familiarly cuts across the full spectrum of military operations.[38]

It must be acknowledged, however, that reframing conflict may have its detractors. For instance, one could argue that if military necessity is broadened to include more than military-centric objectives, there will be no practical limitation on what USCYBERCOM can undertake. But the legal limits of international and domestic law still exist in a reframed conflict, as does the rigorously interagency nature of the US national security apparatus. It is only the DoD law of war policy that becomes more flexible and able to adapt to the state of strategic competition in which it is employed.

Furthermore, it must be remembered that military necessity is only the first step in the policy analysis; cyberspace operations must still be "consistent with" the other LOAC rules.[39] Accordingly, there are ample legal and policy checks on USCYBERCOM's actions.

It could also be argued that strategic competition is not an appropriate candidate for a reframed conflict because it is not possible to win interstate relations. This point is well taken, as strategic competition is what might be called an "infinite game," meaning a state of competition that never actually ends.[40]

Still, while it may not be feasible to win strategic competition, it is possible to identify national interests and the adversaries that threaten them and set discrete national security objectives designed to further those interests. Accordingly, while the game may never be truly won, it is possible to determine what is militarily necessary for achieving national security objectives and furthering the comparative advantage of the United States.

Practical Application

Reframing conflict as strategic competition is useful only if it can be practically applied. While details about the USCYBERCOM operation remain classified, using publicly

38. Donald J. Trump, *National Cyber Strategy of the United States of America* (Washington, DC: The White House, September 2018), 20.

39. GC DoD, DoDD 2311.01, 3.

40. Simon Sinek, *The Infinite Game* (New York: Portfolio/Penguin, 2019), 259–60.

available information regarding USCYBERCOM's operation against the IRA as a case study sufficiently demonstrates the viability of this proposed reframing.

The first step of the analysis is to determine US national interests and the threats to those interests during the 2018 midterm elections. The 2017 *US National Security Strategy*, for instance, asserts four broad national interests, one of which is "protect[ing] the American people, the homeland, and the American way of life."[41]

When elaborating on this national interest, the Strategy identified cyberspace operations as a threat to American political interests and marked foreign governments for "swift and costly consequences" should those governments engage in malicious cyber activities against the United States. The 2018 *US National Cyber Strategy* identifies the Russian government as an adversary using cyberspace to undermine American democracy and "sow discord" in democratic processes and further explains that countering, disrupting, degrading, and deterring such activities is a national security objective.[42]

With objectives and the adversary defined, Trump would have been well within his constitutional authority to choose the Department of Defense and USCYBERCOM as the instrument of national security best positioned to "protect the American . . . way of life" by foiling Russian attempts to influence the midterm elections. Once the task was given to the Department of Defense and USCYBERCOM, those organizations could use the same objectives and adversary to identify actions necessary to meet those objectives, such as shutting down the systems of a Russian government proxy being used to influence and undermine the American democratic process. Reframing the conflict as strategic competition would thus have made USCYBERCOM's operation against the IRA a military necessity.

While the national security policy landscape has changed somewhat under the Biden administration, reframing conflict as strategic competition would likely produce the same result as in 2018. In March 2021, the Biden administration issued interim national security guidance that identifies Russia as a chief rival. Further, this guidance articulates defending democracy against cyberattacks and disinformation and imposing "real costs" on those who "interfer[e] with our democratic processes" as key national security initiatives.[43]

The adversary is the same, and the stated objectives are essentially so. The objectives suggest that had the interim guidance been in place in 2018, the Department of Defense and USCYBERCOM could still have been the best tools for election defense, and the administration could have used them to determine which actions were necessary to meet its national security objectives. Reframing conflict as strategic competition is thus more than a one-off instance of policy compliance; it is a viable model for continued use and application to less-than-war cyberspace operations.

41. Trump, *National Security Strategy*, 4.

42. Trump, *National Cyber Strategy*, 2–3, 20.

43. Joseph R. Biden, *Interim National Security Strategic Guidance* (Washington, DC: The White House, March 2021), 6, 8, 19–20.

Conclusion

Before 2016, USCYBERCOM and the Department of Defense were reportedly focused on issues other than election defense but have since broadened the scope of their concerns to include issues affecting the greater national security of the United States.[44] This shift is consistent with the whole-of-government and best-tool approach contemplated in US strategic documents. The national security strategy is being revised at the time of this writing; however, the Biden administration's interim guidance indicates defending American democratic institutions from various threats, including actors in cyberspace, remains a key US national interest.[45]

Further, holding cyberspace actors accountable for their malicious activities by "imposing substantial costs" remains an option for pursing such interests.[46] These factors suggest the whole-of-government approach to national security, including DoD and USCYBERCOM involvement in such measures, is here to stay.

In the interest of maturing how USCYBERCOM is used and ensuring a consistent analysis of its operations, it is necessary to address the difficulty of applying the DoD law of war policy, and particularly the principle of military necessity, to less-than-war cyberspace operations. One option is to eliminate the portions of the policy applicable outside of armed conflict or perhaps to exempt less-than-war cyberspace operations from the policy's reach permanently. But as discussed, the Department's familiarity with LOAC as law suggests applying LOAC as policy to these operations has its advantages.

The second and better option is to relieve the tension between what the Department of Defense can do and what its policy permits by reframing conflict as strategic competition, thereby giving less-than-war cyberspace operations the conflict qualification needed for military necessity analysis. Reframing conflict in this way expands what is militarily necessary to meet the reframed conflict's objectives, thus enabling rather than stymying the use of the Department of Defense and USCYBERCOM as instruments of national security. **Æ**

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44. Todd Lopez, "For 2020 Election, Threat is Bigger than Russia," Department of Defense News, August 8, 2020, https://www.defense.gov/.

45. Biden, *Strategic Guidance*, 9.

46. Biden, 18.

PERSIAN GULF WAR
A TYPE I APPROACH TO CONFLICTS

David J. Lorenzo

A case study of the George H. W. Bush administration's actions in the lead up to the Persian Gulf War reveals it pursued a particular type of approach that contributed significantly to a quick turn to military force as the outcome of the conflict. This approach, one of several different types employed by US presidential administrations in response to conflicts, included offering coercive alternatives, refusing to negotiate or facilitate a compromise, and identifying a favorable resolution of the conflict as a matter of urgency. This approach will be a factor when an administration prioritizes similar foreign policy objectives.

Less than six months after Iraq's invasion of Kuwait in 1990, the George H. W. Bush administration employed military force to roll back Iraq's conquest. This article is a case study of the Bush administration's actions prior to using military force. It explores connections between those actions and the Persian Gulf War. An analysis of data from policy documents, speeches, and the memoirs of central administration officials addresses the following questions: What approach did the Bush administration take to this conflict with Iraq? Where did that approach originate? How did that approach contribute to the outcome of the conflict?[1]

Theoretical Foundations

Rather than rooting itself solely in realism or geopolitics, economic analysis, bureaucratic politics, or rational actor theory, this study analyzes the actions the Bush administration took to this conflict through the concept of "approach." That is, it asks which alternatives to the use of major military force the administration pursued to resolve the conflict it perceived with Iraq. This article examines how the administration viewed compromises and inducements, analyzes the administration's reasons for

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1. James Mann, *The Rise of the Vulcans: The History of Bush's War Cabinet* (New York: Penguin, 2004); Lauren Holland, "The U.S. Decision to Launch Operation Desert Storm: A Bureaucratic Politics Analysis," *Armed Forces & Society* 25, no. 2 (Winter 1999), https://www.jstor.org/; H. W. Brands, "George Bush and the Gulf War of 1991," *Presidential Studies Quarterly* 34, no. 1 (March 2004), https://www.jstor.org/; and Atif A. Kubursi and Salim Mansur, "Oil and the Gulf War: An 'American Century' or A 'New World Order,' " *Arab Studies Quarterly* 15, no. 4 (Fall 1993), https://www.jstor.org/.

employing specific alternatives, and outlines the administration's patience when pursuing these alternatives.

Understanding conflicts through this concept is importantly responsive to the literature that addresses the cultural roots of US foreign policy.[2] This study postulates US policymakers are constrained by political traditions when they seek congressional and public support for the use of major military force. The most important cultural artifact relevant to how an administration constructs an approach I refer to as the Necessity Standard.[3] The Necessity Standard provides the generally accepted criteria pertaining to engagement in war. It holds that major military force must be used, and can only be used, if and when alternatives to the use of such force are incapable of protecting any vital American interest or discharging any US duty that is implicated in a conflict.

Thus, this study understands that for political and policy reasons as well as those of rational calculation, an administration must create a systematic method to test whether alternatives to the use of large-scale military force, such as the imposition of economic sanctions, bargaining, or military threats, are viable means of attaining a defined bottom line if it ascertains that US vital interests and/or duties are at stake in a conflict.[4]

This work draws upon presidential studies to embrace the position that members of presidential administrations are the key foreign policy actors in the US system. Presidents and their top advisors create policies that protect vital US interests and allow the United States to discharge its duties. Further, it is through these policies that presidential administrations confront conflicts.[5]

But it is also responsive to the scholarship that describes a pluralist American institutional and political landscape.[6] That literature locates the officials who influence military-force decisions in two formal political institutions whose members are sometimes deeply divided. In this frame, executive branch policymakers responsible for deciding questions involving war and peace cannot implement substantial martial undertakings without support from Congress. To gain that support, they must

2. Walter Russell Mead, *Special Providence: American Foreign Policy and How It Changed the World* (New York: Routledge, 2013).

3. David J. Lorenzo, *War and American Foreign Policy: Justifications of Major Military Actions in the US* (New York: Palgrave Macmillan, 2021).

4. Lorenzo, *American Foreign Policy*.

5. Christopher Hemmer, *American Pendulum: Recurring Debates in U.S. Grand Strategy* (Ithaca, NY: Cornell University Press, 2015); and Richard A. Melanson, *American Foreign Policy since the Vietnam War: The Search for Consensus from Nixon to Clinton* (New York: Routledge, 2015).

6. Peter Hays Gries, *The Politics of American Foreign Policy: How Ideology Divides Liberals and Conservatives over Foreign Affairs* (Stanford, CA: Stanford University Press, 2014); and Ole R. Holsti and James N. Rosenau, "The Structure of Foreign Policy Attitudes among American Leaders," *Journal of Politics* 52, no. 1 (1990), https://www.jstor.org/.

persuade their fellow elites to accept their decisions with evidence they have applied the Necessity Standard.[7]

In exploring how an administration's approach affects the outcome of a conflict, this study draws from the literature on conflict studies and bargaining to frame an analysis of how conflicts play out. That literature starts with primary questions that assess the chances of an agreement or escalation: Is there a hurting stalemate? Is there a possibility of reaching a deal before the fighting of a war that would closely resemble the terms of an agreement that would be reached following a war? Do the parties have an incentive to escalate? Arriving at those answers entails first understanding each party's approach to the conflict to identify the room for possible agreement, and second, understanding the orientation of each party to the status quo and escalation.[8]

Partial Typology of Historical Approaches to Conflicts

Understanding approaches to conflicts begins with understanding types of approaches. All US administrations construe interactions with other states through their perception of US vital interests and duties. While all US administrations historically have adhered to the Necessity Standard, they may differ when determining whether a conflict exists. Further, all administrations in some form test the viability of alternatives in the context of a conflict. And while these approaches may differ, they can nonetheless be categorized by type. Types of approaches are distinguished by an administration's sense of patience or urgency, willingness to display flexibility, and choice of coercive or noncoercive alternatives. The following describes a sample of approaches that employ limited flexibility and patience:

Type 0 approach: An administration responds to a conflict with an ultimatum that seeks instant compliance from the other party. This approach incorporates no patience or flexibility in its pursuit of alternatives. Absent immediate compliance or capitulation, the administration moves (within days) to the use of major military force. A historical example is the Truman administration's response to North Korea's invasion of South Korea in the spring of 1950.

Type 1 approach: An administration presents a set of demands and applies coercive measures and military threats. This approach employs limited patience and no flexibility. If the other party does not comply within a limited timeframe (a matter of weeks or months), the administration creates an endgame that will generate a war absent capitulation. A historical example is the Kennedy administration's actions during the Cuban Missile Crisis in October 1962.

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7. Miriam Fendius Elman, "Unpacking Democracy: Presidentialism, Parliamentarism, and Theories of Democratic Peace," *Security Studies* 9, no. 4, (2000), https://www.tandfonline.com/; and Steve Chan and William Safran, "Public Opinion as a Constraint against War: Democracies' Responses to Operation Iraqi Freedom," *Foreign Policy Analysis* 2, no. 2 (2006), https://edisciplinas.usp.br/.

8. Fen Osler Hampson, Chester A. Crocker, and Pamela R. Aall, "Negotiation and International Conflict," in *Handbook of Peace and Conflict Studies*, ed. Charles Webel and Johan Galtung (New York: Routledge, 2007), http://www.uop.edu.pk/.

Type 2 approach: An administration demands another state to consent to an agreement or actions favorable to the United States. This approach entails limited patience, makes use of coercion and possibly military threats, and could offer some concessions or inducements. If no agreement or action is forthcoming within a limited timeframe (measured in months), the administration creates an endgame that will result in war if the other party does not comply. A historical example is the Polk administration and the conflict with Mexico in the mid-1840s.

Type 3 approach: An administration makes demands of another state, and it pushes those demands through elements of coercion and possibly low-level military actions or deterrence. This approach exhibits little flexibility and substantial patience. Without an event or radical change in conditions, the administration does not create an endgame. Successive administrations adopted this approach to Cuba in the aftermath of the Cuban Missile Crisis.[9]

Type 4 approach: An administration makes demands. It employs political pressure and possibly low-level coercive measures but is also willing to provide limited concessions or inducements. This approach entails significant patience and flexibility. The administration does not want to use military force in the medium term except for a major change in conditions and is willing to pursue this approach for a considerable length of time. A historical example is the Grant administration's approach when it confronted Spain over its military operations in Cuba in the early 1870s.

This study argues the George H. W. Bush administration took a **Type 1** approach to Iraq in the early 1990s, and its subsequent inflexibility and sense of urgency led it to a relatively quick resort to major military force.

Iraq and the Bush Administration

The Bush administration perceived a conflict with Iraq because it identified Iraq's invasion of Kuwait as implicating vital US interests and duties. The administration identified the invasion as a threat to a vital interest in maintaining global order and stability. It identified a vital interest in the stability of the Middle East and the security of important regional allies, both of which Iraq appeared to threaten.

Per the Carter Doctrine and associated policies, it identified vital interests in ensuring no state dominated the region, guaranteeing US access to oil in the region, stable oil prices, and preventing any state from controlling the world oil market.[10] The Bush administration also identified as a vital interest eliminating Iraq's weapons of mass destruction (WMD), given the threat they posed to regional friends and allies. Finally,

9. Lars Schoultz, *That Infernal Little Cuban Republic: The United States and the Cuban Revolution* (Chapel Hill, NC: University of North Carolina Press, 2011).

10. Jimmy Carter, State of the Union Address 1980, transcript, January 23, 1980, The Jimmy Carter Presidential Library and Museum (website), https://www.jimmycarterlibrary.gov/; and Michael T. Klare, "Oil, Iraq, and American Foreign Policy: the Continuing Salience of the Carter Doctrine," *International Journal* 62, no. 1 (Winter 2006–2007), https://www.jstor.org/.

it identified duties to protect the citizens of Kuwait from abuse and US citizens from Iraqi interference and violence.[11]

The administration subsequently measured the viability of alternatives to large-scale military action by referencing these identified interests and duties. An alternative or set of alternatives needed to completely remove the Iraqi occupation of Kuwait, reinstate the legitimate Kuwaiti government, and ensure that Iraq recognized Kuwait's sovereignty. It also needed to protect American and Kuwaiti citizens, compel Iraq's government to obey all relevant United Nations Security Council (UNSC) resolutions, and deter Iraq from embarking on similar military adventures in the future.

The Bush administration responded by employing coercive alternatives, refusing to negotiate or facilitate a compromise and identifying a favorable resolution of the conflict as a matter of urgency. Thus, upon receiving word of the invasion on August 2, 1990, administration officials froze Iraqi and Kuwaiti assets in the United States and embargoed Iraqi oil shipments.[12] The administration then proposed and implemented a series of UNSC resolutions imposing strict multilateral economic sanctions on Iraq under Chapter VII of the UN Charter.

The UNSC approved the first of these (Resolution 661) on August 6. After the administration began using military units to enforce a blockade of Kuwait, it sought to broaden that enforcement effort by soliciting UN backing. Resolution 665, approved on August 25, authorized member states to take "all necessary measures" to enforce an embargo against Iraq.[13] The administration continued to employ these coercive measures throughout the conflict and insisted they would not be lifted until Iraq left Kuwait and abided by all relevant UNSC resolutions.

At the same time, the administration was willing to give only limited time to Arab League efforts to negotiate a complete and unconditional Iraqi withdrawal and publicly worried that the League's proposals would fall short of those goals.[14] Its policy dictated that US agents have minimal contact with the Iraqis because it associated substantive diplomacy with undesirable acts of compromise and appeasement.[15]

At no time did the administration propose or facilitate other negotiations, offer its good offices, or suggest a willingness to play the role of mediator or arbitrator to settle the problem between Iraq and Kuwait. Nor did it support any proposal for any party

11. George H. W. Bush, January 16, 1991: Address to the Nation on the Invasion of Iraq, transcript, Presidential Speeches, University of Virginia Miller Center (website), January 16, 1991, https://millercenter.org/.

12. George H. W. Bush and Brent Scowcroft, *A World Transformed* (New York: Alfred A. Knopf, 1998), 304; and Exec. Order No. 12,722, 3 C.F.R. (1990) Comp., 294–95, https://www.hsdl.org/.

13. UN Security Council (UNSC), Resolution 665 (1990)/adopted by the Security Council at its 2938th meeting, on 25 August 1990, UNS(01)/R3, May 25, 1990, https://digitallibrary.un.org/.

14. Bush and Scowcroft, *A World Transformed*, 310–14, 319; George H. W. Bush, remarks to reporters, meeting with Prime Minister Margaret Thatcher, Aspen, Colorado, August 2, 1990; and Bush, telephone conversation with King Hussein of Jordan and President Mubarak of Egypt, August 2, 1990, 12:17–31 p.m. EST aboard Air Force One en route to Aspen, Colorado, https://bush41library.tamu.edu/.

15. Bush, January 16, 1991: Address to the Nation.

other than the Arab League to play such a role. It instead supported Kuwait's immediate submission of the matter to the UNSC.

Diplomacy with Iraq meant making demands and insisting Iraq accept those demands. Consequently, the text of National Security Directive 45, which officially set US policy on the conflict, mentions neither substantive negotiations, mediation, arbitration, nor bargaining with the Iraqis in its discussion of diplomatic efforts to resolve the conflict.[16] US Secretary of State James Baker's September 1990 testimony to members of the House of Representatives was likewise silent regarding these tools.[17]

Administration officials set out this position as early as August 3.[18] National Security Advisor Brent Scowcroft insisted at that day's UNSC meeting "the stakes in this are such that to accommodate Iraq should not be a policy option."[19] In his August 8 national address, Bush argued that compromises and side payments equal appeasement and argued that "Iraq cannot be allowed to benefit from its invasion of Kuwait."[20]

The administration thereafter held that it would not compromise on its initial aims or those contained in successive UNSC resolutions. It also refused to connect those aims with other issues or pursue them by offering Iraq anything in return for quitting Kuwait. Bush reiterated this view at a White House meeting with members of Congress on August 28, arguing that the administration's policy was to make clear to Iraq that "it cannot benefit from this illegal occupation."[21]

Any dialogue with Iraqi officials the administration did initiate consisted of attempts to convey demands and ultimatums. Thus, while the administration had Deputy Chief of Mission Joseph C. Wilson available as a channel of communication, the only reference to him merely reports that on August 5, Wilson "relayed our demand that Iraq withdraw from Kuwait."[22]

While Hussein tried to pass messages to the administration for the next several months and attempted to arrange meetings with administration officials through third parties, the administration steadfastly refused to engage in direct dialogue.[23] The administration reached out to the Iraqis only after the Security Council passed

16. George H. W. Bush, National Security Directive (NSD) 45: *U.S. Policy in Response to the Iraqi Invasion of Kuwait* (Washington, DC: The White House, August 20, 1990), https://irp.fas.org/.

17. *Hearing to Report on the Persian Gulf Situation, House Foreign Affairs Committee*, 101st Cong. (September 4, 1990)(statement of Secretary of State James Baker), https://israeled.org/.

18. Bob Woodward, *The Commanders* (New York: Simon & Schuster, 1991), 237.

19. Bush and Scowcroft, *A World Transformed*, 323.

20. George H. W. Bush, Address to the Nation Announcing the Deployment of United States Armed Forces to Saudi Arabia, transcript, August 8, 1990, The American Presidency Project (website), https://www.presidency.ucsb.edu/.

21. George H. W. Bush, Remarks at a White House Briefing for Members of Congress on the Persian Gulf Crisis, transcript, August 28, 1990, The American Presidency Project (website), https://www.presidency.ucsb.edu/; and Bush and Scowcroft, *A World Transformed*, 348.

22. Bush and Scowcroft, *A World Transformed*, 337.

23. Bush and Scowcroft, *A World Transformed*, 310–14, 319; and Bush, Thatcher; and Bush, memorandum of telephone conversation with King Fahd of Saudi Arabia, August 2, 1990, 6:43–7:21 p.m. EST, Oval Office, https://bush41library.tamu.edu/.

Resolution 678, which set a deadline of January 15, 1991, for Iraq to comply with all UNSC resolutions.

Bush then decided a direct meeting between high-level US and Iraqi officials would demonstrate that alternatives had been truly exhausted. But the administration only came to an agreement to meet the Iraqis in January. This resulted in the January 9, 1991, encounter in Geneva between Baker and Iraq's Foreign Minister Tariq Aziz, which consisted of an exchange of views in which Baker conveyed demands reiterating the UN ultimatum rather than undertaking substantive discussions.[24]

The administration directed the bulk of its diplomatic activities at parties other than Iraq and pursued the creation of the largest possible coalition to support and enforce UNSC resolutions.[25] It was also dedicated to keeping states supportive of the US stance that compromises were unacceptable, and only strict and total compliance with UNSC resolutions would be sufficient to raise the UN sanctions and later to head off military action. The administration used its Allies and friends to (1) apply pressure comprehensively; (2) coordinate, enforce, and legitimize sanctions; (3) solicit material and moral support for possible military action; and (4) demonstrate to the Iraqis that they were bereft of sympathy, support, and allies during the conflict.[26]

The Bush administration similarly construed the role of the UN as a source of coordination and legitimation for its policy of coercing and pressuring Iraq rather than as a body that could supply good offices, mediation, arbitration, or adjudication. The administration immediately identified the UN as a vehicle for obtaining international support for and participation in its response to Iraq's actions, particularly from the People's Republic of China and the Soviet Union.[27]

By the end of August, the Bush administration formalized its strategy as follows: the administration would use the UN to confront the Iraqis, impose and enforce sanctions, "keep Iraq isolated," and "build up support for the possibility of using force."[28] These efforts to work through the UN culminated in the approval of an ultimatum to Iraq by authorizing members to use "all necessary means" to enforce previous UN resolutions addressing Iraq's actions relative to Kuwait and set the January 15, 1991 deadline for Iraq to comply with those resolutions.

The administration's policy was also marked by considerable urgency. Administration officials insisted Iraq must promptly leave Kuwait, and it would judge alternatives on their capacity to meet that sense of urgency. It established this position in Bush's initial public remarks on Iraq's invasion, wherein he called for the "immediate . . . withdrawal of all Iraqi forces from Kuwait."[29] After that, the administration repeatedly

24. Bush and Scowcroft, *A World Transformed*, 441–42.
25. Baker, *Persian Gulf Situation*.
26. Woodward, *The Commanders*, 226, 237.
27. Bush and Scowcroft, *A World Transformed*, 326, 363–68, 408–9.
28. Bush and Scowcroft, *A World Transformed*, 303, 355–56.
29. Bush, August 8, 1990: Address to the Nation.

invoked this formula.[30] At the end of September, Bush announced that "Kuwait was running out of time. It certainly wasn't going to be around as a country if they waited for sanctions to work."[31] The administration's position that it had duties to protect human rights also marked a policy of urgency.[32]

These data indicate the administration's approach would not allow alternatives more than a few months to prove their viability. Then-Chairman of the Joint Chiefs of Staff General Colin Powell mentioned the possibility of converting the defensive option of defending Saudi Arabia into an offensive option for removing Iraqi forces from Kuwait as early as August 3.[33]

Bush confirmed that by the end of August, he was approaching the conclusion that military action would be necessary to evict Iraqi forces from Kuwait. He further records discussions in October involving the search for provocations that would serve as an excuse to initiate military operations. Scowcroft holds that by this time, Bush had become convinced that given the commitment to doing "whatever is necessary to liberate Kuwait," "the reality was that that meant using force."[34] Subsequently, the administration began an endgame in November with the dispatch of an offensive military force to Saudi Arabia and the approval of UNSC Resolution 678, which gave the Iraqi government 45 days to comply with UN demands.

Origin of the Administration's Approach

The administration's broader foreign policy serves as the origin of its approach to Iraq, specifically its embrace of the concept of a "new world order." Some scholars assert this order was founded on opposition to armed aggression, engagement in collective action, and encouragement of great power cooperation.[35] Another account draws its boundaries more expansively as a return to the post-World War II world order the United States created.[36]

Under the terms of this broader order, states respect their neighbors' sovereignty and territorial integrity and refrain from revisionist aggression. States resolve conflicts through international law and international organizations. The UN coordinates collective

30. George H. W. Bush, October 1, 1990: Address to the United Nations, transcript, Presidential Speeches, Miller Center (website), https://millercenter.org/.

31. Bush and Scowcroft, *A World Transformed*, 374–75, 399–400, 427, 434; and Woodward, *The Commanders*, 282, 297, 343.

32. Dan Quayle, "American Objectives in the Persian Gulf" (speech, Seton Hall University, South Orange, New Jersey, November 29, 1990), transcript, http://www.vicepresidentdanquayle.com/.

33. Woodward, *The Commanders*, 248–50.

34. Bush and Scowcroft, *A World Transformed*, 353, 380–83.

35. Eric A. Miller and Steve A. Yetiv, "The New World Order in Theory and Practice: the Bush Administration's Worldview in Transition," *Presidential Studies Quarterly* 31, no. 1 (March 2001), https://www.jstor.org/.

36. Jeffrey Engel, "A Better World . . . but Don't Get Carried Away: The Foreign Policy of George HW Bush Twenty Years On," *Diplomatic History* 34, no. 1 (January 2010): 27, https://www.jstor.org/.

security responses to acts of aggression, with the large states taking the lead in imitation of the Concert of Europe. The emphasis is on regional and global stability.[37]

These priorities are evident in the administration's policy objectives relating to the Middle East and in relevant guidance that addressed Iraq.[38] As Bush stated in his address to Congress in September 1990, the role of the United Nations as an international institution that coordinated the response to what Bush termed Iraq's aggression meant that "we're now in sight of a United Nations that performs as envisioned by its founders."[39]

The connection between this larger foreign policy vision and the administration's approach to the conflict with Iraq can be traced to the beginning of the administration. Upon the assumption of office, administration officials began backing away from the previous administration's policy of balancing Iran and Iraq by aiding Iraq. Instead, they began implementing an approach that emphasized stability; opposed the spread of nuclear, biological, and chemical weapons; supported human rights; and was dedicated to deterring and reversing instances of aggressive revisionism.[40]

Official documents outline a policy of controlling Iraq by dangling a modest set of economic carrots for good behavior while threatening sanctions if Iraq engaged in any "illegal use of chemical and/or biological weapons" or any "breach of IAEA safeguards in its nuclear program."[41] The administration became increasingly concerned with Hussein's ambitions and his WMD programs and reacted sharply to his speech on April 1, 1990, in which he threatened Israel with WMD.[42]

The administration reacted forcibly to Iraq's invasion of Kuwait foremost because its members perceived the invasion as a fundamental challenge to the administration's commitment to the post-1945 global order that was meant to prevent another world war. The president's line of analysis was founded on the Cold War dictum that failure to quickly oppose aggressive revisionism encourages further adventurism and increases the possibilities of a large future war.

As Bush noted in his initial address on the invasion, "The acquisition of territory by force is unacceptable" and later, that Iraq's action "threatens to turn the dream of a new international order into a grim nightmare of anarchy in which the law of the jungle

37. Christopher Maynard, *Out of the Shadow: George H. W. Bush and the End of the Cold War* (College Station, TX: Texas A&M University Press, 2009), 17–18; and Joshua R. Itzkowitz Shifrinson, "George HW Bush: Conservative Realist as President," *Orbis* 62, no. 1 (2018), https://www.sciencedirect.com/.

38. George H. W. Bush, NSD 26: *US Policy Toward the Persian Gulf* (Washington, DC: The White House, October 2, 1989), https://bush41library.tamu.edu/.

39. George H. W. Bush, September 11, 1990: Address Before a Joint Session of Congress," Presidential Speeches, The Miller Center (website), video, https://millercenter.org/.

40. George H. W. Bush, National Security Review 10: *US Policy Toward the Persian Gulf* (Washington, DC: The White House, February 22, 1989), https://irp.fas.org/.

41. Bush, NSD 26.

42. Bush and Scowcroft, *A World Transformed*, 307; Patrick E. Tyler, "Iraqi Warns of Using Poison Gas," *Washington Post*, April 3, 1990, https://www.washingtonpost.com/; and Bush and Scowcroft, *A World Transformed*, 305–6.

supplants the law of nations."[43] Iraq's actions were akin to Germany's maneuvers in the 1930s and were "the first test of the post-Cold War system."[44] Bush explicitly notes, "I saw a direct analogy between what was occurring in Kuwait and what the Nazis had done."[45]

Looking back, Bush held that his speech of August 8, 1990 accurately reflected "the similarity I saw between the Persian Gulf and the situation in the Rhineland in the 1930s when Hitler simply defied the Treaty of Versailles and marched in. This time I wanted no appeasement."[46] Officials asserted any compromise would severely damage US credibility and its leadership in the world.[47] These references engrained these understandings into the administration's policy approach while constituting costly acts that made it impossible for the administration to return to a balancing formula or to embrace flexibility.[48]

A similarly aggressive application of the administration's larger policies is evident in the administration's selection of alternatives. The net effects of its selection of coercive alternatives and its quick resort to military force weakened Iraq in relative and absolute terms such that it would be less capable of engaging in destabilizing moves. The administration implemented sanctions and a military blockade that eroded Iraqi military and economic power. It rejected compromises and payoffs to Iraq that would have strengthened Hussein's regime.[49]

Administration officials argued that compromise and side payments would also constitute appeasement and that Hussein must not be rewarded for his aggression.[50] If he were, the administration held, he and others would be tempted to repeat his revisionist actions to reap more payoffs. A vindicated and empowered Hussein would continue acting as a deeply destabilizing force in the Middle East, undermine international laws and rules, and help generate "new dangers, new disorders, and a far less peaceful future."[51] The administration consequently did not allow Iraq to permanently

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43. Bush, August 8, 1990: Address to the Nation; and Bush, October 1, 1990: Address to the United Nations.

44. Bush, August 8, 1990: Address to the Nation; UNSC, Provisional Verbatim Record of the Two Thousand Nine Hundredth and Thirty-Fourth Meeting, S/PV.2934 (August 9, 1990)(Statement of Mr. Pickering on Resolution 662), 7, https://undocs.org/; Bush and Scowcroft, *A World Transformed*, 323; and Baker, *Persian Gulf Situation*.

45. Bush and Scowcroft, *A World Transformed*, 375.

46. Bush and Scowcroft, *A World Transformed*, 340; and Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965* (Princeton, NJ: Princeton University Press, 1992).

47. Bush and Scowcroft, *A World Transformed*, 418, 440; and Bertram Spector, "Negotiating with Villains Revisited—A Research Note," *International Negotiations* 8, no. 3 (2003), https://brill.com/view/.

48. George H. W. Bush, August 8, 1990: Address on Iraq's Invasion of Kuwait, Presidential Speeches, The Miller Center (website), https://millercenter.org/; and George H. W. Bush, March 6, 1991: Address before a Joint Session of Congress on the End of the Gulf War, Presidential Speeches, The Miller Center (website), https://millercenter.org/.

49. Bush and Scowcroft, *A World Transformed*, 448,

50. Woodward, *The Commanders*, 317; and James Baker (lecture, Los Angeles World Affairs Council, Los Angeles, October 29, 1990).

51. Bush and Scowcroft, *A World Transformed*, 422, 323; and Baker, lecture.

benefit from its invasion of Kuwait while it simultaneously degraded Iraq's military and reduced Iraq's ability to project power.

The administration's decision to treat the conflict with a sense of urgency also actualized an aggressive application of its larger policies. That decision assumed the longer Iraq was allowed to flout the norms of this new post-Cold War order and resist its enforcement mechanisms by occupying and wrecking Kuwait, the weaker that order would appear and the stronger the appeal of aggression to revisionists.

Conversely, that decision was also informed by the judgment that the more quickly the United States and the world community eliminated that challenge, the stronger and more stable the new world order, the more credible the United States and its allies' deterrent against disorder, and the weaker the appeal of aggressive revisionism.[52]

Related factors also pushed the administration toward urgency. It concluded Iraq's addition of Kuwait's oil reserves to its own placed Iraq in a highly advantageous position vis-à-vis the world oil market, allowing Iraqi leaders to threaten and punish whomever they wished. Iraq would possess a "stranglehold over the oil supplies of the industrialized democracies."[53] Iraq could use that power while it destabilized the Middle East and threatened American interests.[54]

In sum, the administration's approach to the conflict operationalized the judgment that minimizing exposure to the threats and costs associated with its preferred world order overrode all other considerations, including resolving the conflict peacefully.[55] Administration officials returned to this judgment continually over the next several months. Because sanctions had not succeeded in forcing Iraq from Kuwait and did not promise to do so in the near future, it was necessary that those measures be abandoned in favor of military action.[56]

Abandoning Alternatives

While the administration kept to the terms of the Necessity Standard, its approach pushed it quickly towards the Standard's imperative side. The administration's construal of US vital interests and duties in the context of a specific world order constructed the conflict as a zero-sum affair that invited the use of force. The administration's insistence on inflexibility and use of coercive alternatives left no room for negotiations.

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52. Bush and Scowcroft, *A World Transformed*, 370, 400; and Robert M. Gates, *Exercise of Power: America's Failures, Successes, and a New Path Forward in the Post-Cold War World* (New York: Alfred A. Knopf, 2020), 201.

53. Bush and Scowcroft, *A World Transformed*, 399.

54. Bush and Scowcroft, *A World Transformed*, 399–400; Woodward, *The Commanders*, 226; and *Crisis in the Persian Gulf Region: U.S. Policy Options and Implications: Hearings before the United States Senate Committee on Armed Services*, 101st Cong. (December 3, 1990)(statement of Secretary of Defense Richard B. Cheney).

55. Bush and Scowcroft, *A World Transformed*, 353.

56. Bush, January 16, 1991: Address to the Nation.

Bush was publicly committed to making Iraq submit, US credibility was on the line, and the administration would not settle the conflict on any but its own grounds.[57]

This inflexible approach ultimately led the administration to label alternatives that included sustained patience as compromise and the acceptance of an intolerable new status quo. The administration believed waiting for alternatives to work beyond the time necessary to position offensive military forces and gain support for military action was to (1) acquiesce to Iraq's demands, (2) devalue the harm Iraq inflicted on Kuwait, (3) allow Iraq to destabilize the region, and (4) erode US credibility and the credibility of the world order it supported.

Enlarging on their views in their joint memoir, Scowcroft and Bush described designating sanctions and trade embargoes as "an essential first step" that could lead to harsher actions rather than the main means by which they hoped to force Iraq to comply with US demands.[58] This skepticism resulted in the early decision to set an endgame in motion. This sense of urgency is consistent with a **Type 1** approach that demands quick results from alternatives and comes to swift conclusions when judging their viability.

The administration also made moves as a result of its inflexibility and sense of urgency that informed its decision to conclude its endgame early (in January 1991) rather than later because those moves generated significant costs that the administration was unwilling to bear. The military force sent to Saudi Arabia to deter Iraq from invading that country while sanctions operated cost hundreds of millions of dollars to dispatch and more to maintain. The costs of maintaining the additional US military force that the administration sent as part of the endgame to apply supplementary military pressure were even larger.[59]

Other costs of patience included an erosion of US credibility and threats to coalition unity once the administration had issued its own military threats and had pressured the Security Council to set a deadline for Iraq's compliance with a resolution.[60] The administration's acceptance of and continued references to Kuwaiti claims that Iraqi forces were engaged in large-scale destruction, looting, and human rights violations attached additional costs.[61]

The administration's immediate turn to sanctions against Iraq as the main alternative also created many of the costs it referenced in mid-January 1991 to bolster its contention that the current situation was intolerable and military force should be used immediately.

Front-line states lost considerable revenues in foregoing trade with Iraq, while other states were severely affected by the rising price of oil driven by the conflict and

57. Dan Reiter, "Exploring the Bargaining Model of War," *Perspectives on Politics* 1, no. 1 (March 2003), https://www.jstor.org/.

58. Bush and Scowcroft, *A World Transformed*, 331–33.

59. Bush and Scowcroft, *A World Transformed*, 384–85.

60. Bush and Scowcroft, *A World Transformed*, 440; and Jeffrey Record, *Hollow Victory: A Contrary View of the Gulf War* (Lincoln, NE: Potomac Books, 1993), 40.

61. Bush, January 16, 1991: Address to the Nation; and Bush and Scowcroft, *A World Transformed*, 392.

embargo. Their economic travails forced the coalition to collect funds to compensate them and created internal and external pressures to end the conflict quickly. The longer the conflict endured, the more likely these states would succumb to internal pressure and defect from the coalition, surreptitiously trade with Iraq, or openly call for a compromise solution.[62]

Finally, the administration's approach significantly narrowed the space available to resolve the conflict peacefully. Because Hussein was offered nothing for agreeing to US demands, he believed he should resist the United States and remain in Kuwait. Scholars point to the economic resources Hussein would have lost if he left Kuwait. They highlight evidence that Hussein believed he would lose credibility and deterrence power in the region if he backed down without a payoff, and thus would have been subject to outside attack and internal uprisings, whereas continuing to resist or even lose a military encounter with the United States would allow him to retain a necessary reputation for aggressively defending his interests.[63]

To summarize, the Bush administration's approach deemed the status quo unacceptable. The administration ruled out compromise as a way of returning to the status quo ante. It deemed waiting any longer for an Iraqi surrender after it had military forces in place too costly and the use of military force a desirable way of escaping those costs, enforcing important norms, and discouraging future aggressive revisionism.

In contrast, Hussein found the status quo the most desirable outcome. He calculated that a continued impasse with the United States over that status quo was acceptable even given sanctions. He deemed a voluntary return to the status quo ante without a significant payoff excessively dangerous and believed that escalating to a war could end in victory and, even if he lost, would contribute to Iraqi deterrence and reputation.[64] He would accept a payoff to leave Kuwait, but none was on offer.

In the parlance of conflict management, neither side experienced the kind of hurting stalemate that would motivate them to end the conflict on mutually acceptable terms.[65] While the Bush administration was under greater pressure to end the stalemate, it had ruled out a compromise. Both sides saw escalation as a way to win or at least not to lose.

The Bush administration's **Type 1** approach to the conflict helped create and reinforce this setting. Scholars have emphasized the effects of the administration's rigid refusal to offer inducements and its reliance on coercive alternatives. Hussein did not acquiesce to US demands and attempts at coercion, partly because he feared that should he do so without inducements, the United States would make additional

62. Bush and Scowcroft, *A World Transformed*, 322, 401, 404–5; and Woodward, *The Commanders*, 319.

63. Record, *Hollow Victory*, 35.

64. Stephen T. Hosmer, *Why the Iraqi Resistance to the Coalition Invasion Was So Weak* (Washington, DC: RAND Corporation, 2007), https://www.rand.org/.

65. I. William Zartman, "Ripeness: The Hurting Stalemate and Beyond," *International Conflict Resolution after the Cold War*, ed. Paul C. Stern and Daniel Druckman (Washington, DC: National Academies Press, 2000), https://nap.nationalacademies.org/.

demands on Iraq in the future with the confidence that it could obtain compliance without cost.[66]

Without compensation that signaled recognition that Iraq had interests to protect and that buying off Iraq was cheaper than fighting a war, Iraqi leaders believed they had to establish a reputation for resistance to replace the perception that Iraq could be easily intimidated.[67] A similar perception held on the other side of the conflict. The Bush administration perceived Iraq was powerful enough to engage in similar regional military ventures in the future, and would likely do so if it was rewarded for its actions. Hussein must be deterred by being coerced into withdrawing from Kuwait. Using military force would have the added benefit of militarily weakening him.

Conclusion

The approach the Bush administration took to this conflict with Iraq is likely to recur given comparable circumstances. The Bush administration's embrace of a **Type 1** approach is rooted in reasons that are not idiosyncratic but are deeply embedded in post-Cold War security policy.

Future administrations will likely identify vital interests and duties in regional stability, the protection of important markets and American allies, and the maintenance, protection, and credibility of a world order whose constituent norms protect sovereignty and outlaw aggressive revisionism. If a future administration finds itself in a crisis that involves a combination of those perceived vital interests and duties, it will also likely hold similar perceptions of how those interests are to be protected and duties discharged. The crisis must be resolved quickly, alternatives must be limited, and no payoffs may be made. If the resulting menu of coercive alternatives does not deliver quickly, the immediate use of major military force will be deemed necessary.

Still, an administration may take another approach given a different set of fundamental foreign policies. The Reagan administration would have determined Iraq's invasion of Kuwait was undesirable. But given its different foreign policy priorities, the administration would have been open to various ways of achieving its preferred outcome—to prevent Iraq from becoming a hegemonic power but not weaken it so that it could no longer balance Iran. It probably would have favored a **Type 4** approach, facilitated a negotiated settlement, and attained Iraq's withdrawal from Kuwait while preserving Iraq as a counterweight to Iran. Different foreign policy priorities shape different approaches to conflicts and help shape different outcomes. **Æ**

66. Todd S. Sechser, "Goliath's Curse: Coercive Threats and Asymmetric Power," *International Organization* 64, no. 4 (2010), https://www.jstor.org/.

67. Sechser, "Goliath's Curse.

THE NATIONAL SECURITY STRATEGY AS A GENRE

DYNAMIC AND ADAPTABLE OR CONSTRAINING CREATIVITY?

Philip Hayek

This article provides a framework for analysis of the national security strategy as a genre. Employing theories from rhetorical genre studies, complex system theories, and post-humanist studies, the analysis finds that while each iteration of the strategy reflects the individual worldview and priorities of its presidential author, as a genre, the national security strategy is directly responsive to and constructive of our recurring national security situation.

Scholars in rhetorical genre studies (RGS) accept that genres are profoundly ideological; they are responsive to and constructive of social situations. Likewise, the US national security strategy (NSS) is accepted as a political statement representative of the current administration; the document constructs a shared global security environment while also responding to that environment. This study analyzes the unique recurrent situation of composing and publishing the NSS broadly from the ecological perspective and specifically through the lens of rhetorical genre studies. This approach sheds light on the epistemological features and functions of the NSS.

In support of building a "unique body of knowledge" for the discipline of strategic communications, this article positions the national security strategy of the United States as a specific research object to be studied from the research perspective of ecologies of composition.[1] The NSS, produced by the executive branch, is the foundation for the national defense strategy and the national military strategy. This hierarchy represents an ecology of composition and a system of genres. These documents, taken together as a constellation of genres, represent the US approach to security and defense. They embody the shared goals of the security establishment while enabling users, participants, or members of the discourse community to take action congruent with those shared goals.

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1. Ansgar Zerfass et al., "Strategic Communication: Defining the Field and Its Contribution to Research and Practice," *International Journal of Strategic Communication* 12, no. 4 (2018): 487, https://www.tandfonline.com/.

Background

Recent updates to the process of formulating the NSS were mandated by Congress in 2017.[2] Section 603 of the Goldwater-Nichols Department of Defense Reorganization Act of 1986 mandated the annual publication of the US national security strategy, although previous documents were created for similar purposes, notably the National Security Council paper NSC-68: *United States Objectives and Programs for National Security*.[3] NSC-68 was a classified top-secret document in 1950 and characterized the Soviet threat and how the United States should respond.

The issue of classification was taken up in the 2017 changes to the NSS, which amended US code by changing the requirement of a classified and unclassified version of the document to one that is classified "but may include an unclassified summary."[4]

As mandated by Congress, the overall purpose of the NSS is the communication of the president's vision of national security to Congress.

> The NSS provides discussion on proposed uses of all facets of US power needed to achieve the nation's security goals. The report is obligated to include a discussion of the United States' international interests, commitments, objectives, and policies, along with defense capabilities necessary to deter threats and implement US security plans."[5]

The NSS as a genre precipitates the national military strategy and other genres such as the quadrennial defense review, which was replaced by the national defense strategy in 2017 (although the first national defense strategy was issued in 2005). Both the national military strategy and the national defense strategy respond directly to the NSS and provide a framework for how the armed forces will be used to accomplish the goals articulated in the NSS. In theory, the strategy flows from the president through the secretary of defense to the military services.

Rhetorical Ecology

Analyzing the NSS among the constellation of strategy documents requires a broad perspective of the rhetorical ecology. (Of note, rhetorical ecology refers to a model of writing as a socially situated and constructed task within a larger system of customs and cultures.) Several interconnected fields, including rhetorical genre studies, complex systems theory, and posthumanist scholarship encompass this ecology.

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2. Mark F. Cancian, *Formulating National Security Strategy: Past Experience and Future Choices* (Washington, DC: Center for Strategic and International Studies (CSIS), October 6, 2017), x, https://www.csis.org/.

3. US National Security Council (NSC), NSC 68: *United States Objectives and Programs for National Security* (Washington DC: NSC, April 7, 1950), https://irp.fas.org/; and Goldwater-Nichols Department of Defense Reorganization Act of 1986, Pub. L. No. 99-433, 100 Stat. 992 (1986), https://www.congress.gov/.

4. National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, 130 Stat. 2371 (2016), https://www.congress.gov/.

5. "National Security Strategy," Office of the Secretary of Defense, Historical Office (website), n.d., accessed July 19, 2022, https://history.defense.gov/.

Theories of complex systems as they apply to language use include the principles of dynamic activity, random interaction, information exchange with feedback, reinforcement of behaviors, and the emergence of stable patterns without central control.[6] The result is communication as a complex system, a rhetorical ecology full of dynamic activity and distributed agency. Posthumanist scholarship in the area of technical communication also takes up the concept of distributed agency in complex rhetorical situations.[7]

Rhetorical genre studies offer much in support of this research, connecting kinds of texts to kinds of social actions while trying to understand how genres help users reproduce and navigate recurrent situations. More than viewing genre as simply a classificatory tool that helps sort and organize kinds of texts, RGS scholars explore the epistemological functions of genre and how genres can actively shape meaning and action. Genres are both sites of action and ways of acting. A stable genre must accommodate both stability and change; it must respond to variation within the recurrent situation.[8] Rhetorical genre studies enable studying how the NSS has developed and responded to varied, yet recurrent, situations.

Posthumanism is an undercurrent of all this scholarship and has been embraced by technical communicators to understand how agency and cognition are distributed in rhetorical situations rather than individually held constructs. Distributed agency is a theme throughout these three fields—complex systems theory, RGS, and posthumanist scholarship—as all attempt to understand the interplay of text, individual, and environment or context. Analyzing the national security strategy from this perspective, as a noun—the NSS as a site, an inhabitable textual space—and as a verb—a way of acting in congruence with the established genre—allows researchers to analyze the epistemological power of the genre itself.

National Security Strategy as Genre

In October 2017, the Center for Strategic and International Studies (CSIS) published its congressionally mandated report on the national security strategy, citing "lack of clear priorities; lowest-common-denominator recommendations; slowness in responding to changes in the national security environment," among other concerns.[9] In response, the Fiscal Year 2017 National Defense Authorization Act made substantial changes to the genre conventions and expectations of the document that focused on unification, simplification, and classification. "Unification means developing strategy with a single voice rather than being the consensus product of a committee.

6. William A. Kretzschmar, *Language and Complex Systems* (London: Cambridge University Press, 2015).

7. Jason Barrett-Fox and Geoffrey Clegg, "Beyond Hearts and Minds: Posthumanism, *Kairos*, and Technical Communication in US Army Field Manual 3-24, Counterinsurgency," in *Posthuman Praxis in Technical Communication*, ed. Kristen R. Moore and Daniel P. Richards (New York: Routledge, 2018), 237.

8. Anis S. Bawarshi and Mary Jo Reiff, *Genre: An Introduction to History, Theory, Research, and Pedagogy* (Indiana: Parlor Press, 2010), 4.

9. Cancian, *National Security Strategy*, 20.

Simplification means focusing guidance on the big issues and away from details about specific topics. Classification allows more candid discussion about tradeoffs and priorities without risking public backlash from affected groups and interests."[10]

The report cautions, however, that there is no perfect process for creating the NSS. Rather, the process must be dynamic and adaptable to perturbations that arise in the ecology of composition. In addition to being adaptable to unique but recurrent situations, the NSS, as a genre, carries authority across different administrations, no matter the individual signatory. Rhetorically, it represents the executive branch of the government and the civilian control of the military.

Irrespective of the sitting president, the document itself carries weight because it is an established genre. The document couples the authority of the office of the president and 70 years of history and precedent—context—to create and respond to a recurring situation that is profoundly ideological. As a genre, the NSS is responsive to and constructive of the situation of our national security, in concert with other strategy documents.

Moreover, the NSS as a genre exists in an ecology of other genres, including the national defense strategy and national military strategy. From this perspective, the genre is more than simply a classificatory tool. For RGS scholars, genre is inextricably tied to situation and in the situation of the NSS, genre knowledge means "knowledge of what and whose purposes genres serves; how to negotiate one's intentions in relation to genres' social expectations and motives; when and why and where to use genre; what reader/writer relationships genres maintain; and how genres relate to other genres in the coordination of social life."[11]

In short, genres are both sites of action and ways of acting—habitations and habits. From this perspective, the NSS can be defined as a way of recognizing, responding to, acting meaningfully and consequentially within, and helping to reproduce recurrent situations.[12] Furthermore, we can connect this kind of text to kinds of social actions.

Genres themselves are epistemological and play a critical role in meaning making. Genre is obviously a classificatory tool, but it is also active, shaping meaning and action. In the case of the NSS, habitual rhetorical forms and strategies influence and shape the perception of the current reality of the United States from a security standpoint.

The national security strategy creates the situation, or context, in which it responds. The genre establishes the rhetorical situation that calls for response, delimits the rhetorical responses available in that situation, and enacts that response. It is both enabling and constraining, and the forms established in the genre of the NSS mediate how a presidential administration perceives and responds to this recurrent situation.

Moreover, the NSS as a genre mediates the relations between government entities (the president, the secretary of defense, Congress), the enactment of these roles, and the context or social reality in which all of this takes place. In other words, "these forms come to mediate how individuals perceive and respond to recurrent

10. Cancian, *National Security Strategy*, 20.
11. Bawarshi and Reiff, *Genre*, 4.
12. Bawarshi and Reiff, 4.

situations."[13] The NSS is how the United States defines and acts within a situation, creating a shared definition and interpretation of that situation. The NSS, the genre, functions as a shared, recognizable exigence, and objectifies our shared values, motives, and intentions as a nation.

This is a description of the intention of the process in which the secretary of defense and the Department of Defense invest their trust, which is necessary to coordinate defense and military strategies with the NSS. In practice the genre reaches a global audience as an explicit articulation of "a country's public, authoritative declarations about the manner in which it intends to achieve its security objectives within the international security environment."[14]

Richard Doyle, writing in 2007, posed this question: "Should a country's official, published strategy be congruent with what experts say about the defense policies and practices actually carried out by that country?"[15] This is essentially a question of theory versus practice, or intention versus implementation. He argues official strategy documents like the NSS "tell the world what a government intends to do, strategically. Whether it consistently acts on these principles is another matter."[16]

The NSS is what is made available to civilian and military decisionmakers, and in theory guides their actions. Doyle and the authors of the Center for Strategic and International Studies review discuss the burst of national strategy documents attempting to guide decisionmakers—a "strategy stew" of institutionalized documents, or genres, that add to the complexity of the constellation of genres.[17] Though the influx of strategy documents can dilute the epistemological force of any one genre, there is consensus that in the hierarchy of strategy documents, the NSS is the strategic touchstone. The other documents should be logically related to it, if not derived from it.

Doyle warns that though "the assumption is that [these strategic documents] reflect a common strategic template. . . . Given the scope of the problems they address, the processes used to produce them, and the agencies involved in the production, that may be a heroic assumption."[18] Ten years after Doyle's essay, CSIS came to similar conclusions about the seemingly impossible intentions of the genre, acknowledging the complicated nature of the process, and responding to Doyle's lament that "there is scant information on the precise manner in which the federal government produces the NSS."[19] But, as Doyle also noted, we do know why it is produced and where. In other words, we can analyze the context and genre conventions of the NSS, in spite of the process being what the CSIS characterized as a "sprawling affair."

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13. Bawarshi and Reiff, *Genre*, 70.
14. Richard B Doyle, "The US National Security Strategy: Policy, Process, Problems," *Public Administration Review* 67, no. 4 (July/August 2007): 624, https://onlinelibrary.wiley.com/.
15. Doyle, "National Security Strategy," 623.
16. Doyle, 624.
17. Doyle, 625.
18. Doyle, 625.
19. Doyle, 625.

The genre conventions of the NSS do some heavy lifting. The strategic ends of the document remain constant, but the strategic ways undergo revisions from administration to administration. There is constant variation and adjustment. Some strategies have been foreign policy failures, such as Johnson's Vietnam strategy, while others, such as the strategy of containment during the Cold War, have been successful. But the genre is both stable and dynamic, creating a recurring, yet unique, rhetorical exigence. (In rhetoric, exigence is defined as "an issue, problem, or situation that causes or prompts someone to write or speak.")[20]

The Strategy and Exigence

While the "US strategic process has been criticized for being slow and unable to adequately respond to a changing global environment," the genre provides all participants with a guide to its creation, including "marching orders" for users of the document such as the Departments of Defense, State, and Homeland Security.[21] As a genre, the NSS itself comes to mediate how the individuals involved in the process of creating it and its intended audience perceive and respond to the recurrent situation. Genre scholars note, "variation is an inherent part of recurrence, and so genres must be able to accommodate that variation."[22] The national security strategy must accommodate stability and change as a site of social and ideological action.

Carolyn Miller defined genre as social action. "Exigence is a form of social knowledge–a mutual construing of objects, events, and interests and purposes that not only links them but makes them what they are: an objectified social need."[23] An exigence does not exist as an ontological fact, rather, "how we define and act within a situation depends on how we recognize the exigence it offers, and this process of recognition is socially learned and maintained."[24]

What we perceive as an exigence requiring a certain response is predicated on how we have learned to construe it as such. Within the recurrent situation of producing the NSS, it is the genre that maintains social motives for acting and provides those who produce it with typified rhetorical strategies for doing so. For example, the usual first rhetorical move in the national security strategy is for the president to identify key threats and then provide strategies which serve as guides for prominent government leaders.

Another genre convention is how the NSS works to leverage our value similarities through diplomacy; the NSS attempts to get other nations to identify with our values,

20. Richard Nordquist, "Exigence in Rhetoric," ThoughtCo., updated July 16, 2019, https://www.thoughtco.com/.

21. Cancian, *National Security Strategy*, 10.

22. Bawarshi and Reiff, *Genre*, 79.

23. Carolyn R. Miller, "Genre as Social Action," *Quarterly Journal of Speech* 70, no. 2 (1984): 157, https://www.tandfonline.com/.

24. Bawarshi and Reiff, *Genre*, 80.

too.[25] In this way, the NSS embodies the American government's ways of knowing, being, and acting in the world and cannot be severed from its context. Part of what defines a genre system is "the actions that these genres, working in dynamic interaction with each other, enable individuals to perform over time, within different contexts of activity."[26] The NSS arguably enables the United States to exist in a global environment and defines the social roles, social relationships, and power dynamics of our country in the context of geopolitics.

The Power and Limitations of Recurrence

As previously mentioned, genres are inherently ideological, and the NSS is inherently political. One scholar notes "the US has turned to Strategic Communication and Public Diplomacy to engage key audiences in ways that advance US interests and to win the political-ideological contest for domestic and international legitimacy."[27] Logically these efforts in strategic communication and public diplomacy should be informed by the national security strategy. They should support the NSS, as all are part of the war of ideas. "If public diplomacy is essentially about creating common definitions of international problems as a pretext to finding common solutions, strategic narratives can be a central toolset for establishing consensus."[28]

Through the lens of RGS, genres such as the NSS orient us toward a shared mentally constructed space that contributes to our sense making and decision making. These genres tell us how to think and act and recognize the situation in a particular way. The range of rhetorical responses are constrained by the nature of the situation, and a genre, or typified way of responding, emerges as the situation recurs. One RGS scholar notes the power of recurrence:

> From day to day, year to year, comparable situations occur, prompting comparable responses; hence rhetorical forms are born and a special vocabulary, grammar, and style are established. This is true also for the situation which invites the inaugural address of a President. The situation recurs and, because we experience situations and the rhetorical responses to them, a form of discourse is not only established *but comes to have a power of its own*–the tradition itself tends to function as a constraint upon any new response in the form. (emphasis added)[29]

The aforementioned flaws in the process and product of the NSS are the result of the genre predisposing future audience expectations. The genre limits the socially available rhetorical forms that subsequent authors can use to define and experience the recurrent situation.

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25. John M. Weaver, "The 2017 National Security Strategy of the United States," *Journal of Strategic Security* 11, no. 1 (2018), https://doi.org/.

26. Bawarshi and Reiff, *Genre*, 87.

27. Michael H. Creswell, "Wasted Words? The Limitations of US Strategic Communication and Public Diplomacy," *Studies in Conflict and Terrorism* 42, no. 5 (2019): 464, https://doi.org/.

28. Creswell, "Wasted Words?," 466.

29. Bawarshi and Reiff, *Genre*, 64.

Michael Creswell points out how difficult it would be to change how the United States approaches the genre of the NSS or any other strategic communication or public diplomacy effort, requiring "fundamentally changing the political system of the US, the way in which news is collected and disseminated, and the way in which the US armed forces operate."[30] He argues the primary reason for the executive branch's inability to control the message stems from the pluralistic political structure of the United States. To this we can add the limiting factors of the NSS as an institutionalized genre with limited appropriate ways of responding to a recurrent situation.

Genres rely on our "stocks of knowledge," which are "socially derived and confirmed rules, maxims, strategies, and recipes for behaving and acting in typical situations."[31] These are socially derived strategies and forms for recognizing and acting within familiar situations. The national security strategy is a typified reaction to a recurrent situation, but what are its epistemological limitations to accurately identify and participate in the construction of the situation to which it responds? Is the instrument of the NSS unsuited to the task given to it? Does it successfully mediate the relationship between the situation and the response?

One aspect of this mediation is that it is "our shared interpretation of a situation, through available typifications such as genres, that makes it recognizable as recurrent and that gives it meaning and value."[32] In this respect, the NSS is successful in and of itself. While agreeing with Creswell's argument that the executive branch never has a monopoly over the message that this country communicates, nor can it always count on receiving significant domestic or international support for a policy no matter how eloquently that policy is presented, the NSS succeeds in providing "a mutual construing of objects, events, interests and purposes that not only links them but makes them what they are: an objectified social need."[33]

This mutual construing of exigence is how we come to shared agreement on what situations require, what they mean, and how to act within them. The genre becomes an objectified need to respond to the situation, and in this way is epistemological, creating our need to respond and becoming the response itself. The NSS enacts its own motives onto administrations and the participants responsible for its creation.

These "social motives" tell us that "at the level of genre, motive becomes a conventionalized social purpose, or exigence, within the recurrent situation."[34] Individual national security strategy documents articulate the motives of individual presidents; the NSS as a genre reveals our culturally shared definition of our country's social purpose, or motives, across a timeline of varied yet recurrent situations.

Indeed, RGS scholars agree variation is an inherent part of recurrence, and successful genres must be able to accommodate that variation. This includes being responsive

30. Creswell, "Wasted Words?," 476.
31. Bawarshi and Reiff, *Genre*, 67.
32. Bawarshi and Reiff, 70.
33. Bawarshi and Reiff, 70.
34. Miller, "Social Action," 162.

to the genre's authors' "individually formed inclinations and dispositions–balancing individuals' own uniquely formed knowledge of the world with socially induced perceptions of commonality."[35]

Conclusion

The NSS has accommodated both stability and change quite successfully over time as a "stabilized-enough" site of social and ideological action.[36] The "stabilized-for-now" or "stabilized-enough" characterization applies to the NSS as a dynamic and adaptive genre over time, constantly mediating relations between a constellation of genres—different strategy documents and different contexts. As a typified way of acting within recurrent situations, the NSS is a site of study that can tell us more than the motives of the current sitting president. It reveals how the nation perceives the national security situation and ways of acting and responding in that context.

Some RGS scholars offer the notion that "genres dynamically embody a community's ways of knowing, being, and acting," while serving to "stabilize experience and give it coherence and meaning."[37] The genre conventions of the NSS enable the members of the community who produce it to participate in the activity in fairly predictable, familiar ways in order to create it.

At the same time however, scholarship warns genres must change along with their conditions of use, such as changes in community membership, technology, or values, or risk becoming obsolete.[38] In the case of the NSS, it has faced charges of not being agile enough to respond to a dynamic security environment and of constraining creativity and innovation. These charges led to Congress making substantial changes to the genre, one of which includes the transmittal of the NSS to Congress in both a classified and an unclassified form.

This change presumably will have an effect on the authors' motives—they may hope the classified version will be more strategic and also avoid the pitfalls of trying to please everyone—the problem of consensus can dilute the content. Nevertheless, the national security strategy remains a cultural artifact that embodies our shared perspective of the world and the United States' position in it, and enacts our agreed-upon response to that context. **Æ**

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35. Bawarshi and Reiff, *Genre*, 79.

36. Catherine Schryer, "The Lab vs. the Clinic: Sites of Competing Genres," in *Genre and the New Rhetoric*, ed. Aviva Freedman and Peter Medway (London: Taylor and Francis, 1994), 108.

37. Carol Berkenkotter and Thomas N. Huckin, "Rethinking Genre from a Sociocognitive Perspective," *Written Communication* 10, no. 4 (1993): 479, https://journals.sagepub.com/.

38. Charles Bazerman, *Shaping Written Knowledge: The Genre and Activity of the Experimental Article in Science* (Madison: University of Wisconsin Press, 1988), 61.

STUDYING AIRPOWER

EIGHT ESSENTIAL THEMES FOR PRACTITIONERS

HEATHER P. VENABLE

Eight integral themes are essential to the study of airpower. These include the history and efficacy of strategic bombardment, a more nuanced model for airpower, balancing direct and indirect airpower, enabling airpower for the future fight, analyzing continuity and change in the history of airpower, civil-military relations, and the role of airpower in the context of other domains of warfare. A strong intellectual grounding in these areas will prepare future Air Force leaders for strategic and operational success.

Most airpower students can relate to the endlessly increasing stack of books in the "to-read" pile on one's desk or bedside table.[1] What is worth pursuing and what offers less value? An analysis of classics in the field of airpower studies yields eight integral themes ranging from civil-military relations to the challenge of balancing the study of kinetic airpower with the study of nonkinetic airpower. Acquiring a solid foundation in these eight areas will help Airmen stay grounded in firm intellectual territory when preparing for airpower's future employment. Importantly, these themes span the entirety of airpower history, because history provides enduring lessons from the strategic and operational levels of war, as opposed to the tactical where change occurs more frequently.

Theme One: The Rise and Fall of Strategic Bombardment Theory

What is the most effective use of airpower? Today, the answer to that question is a resounding "it depends," given a conflict's particular context. But those who attended British and American staff colleges in the interwar period between World War I and World War II had a different answer: strategic bombardment.

The notion or theory of strategic bombardment—using airpower to target factories and even factory workers, among other targets, in contrast to concentrating airpower on an enemy's fielded forces—took root even before those aforementioned staff colleges were established for Airmen. The battle for the skies began over cities in the pages of science fiction. H. G. Wells' *War in the Air*, written four years after the

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1. Thank you to the anonymous peer reviewers for their helpful feedback, which I greatly appreciate.

Wright Brothers first flew, epitomizes this type of fiction, especially viewed from the hindsight of 100 years of airpower history.

Wells depicted a massive fleet of airships flying from Germany to New York City where a panicked and terrified mayor quickly surrendered. But what came next in the plot proved equally prescient: angered citizens armed themselves and took to the streets. Strategic bombardment did not offer the shortcut to victory the fictional German leaders envisioned. One could destroy a city, yet the city could remain "too strong to be occupied."[2]

Reality partially echoed fiction in World War I. The kind of air warfare Wells had imagined did occur, although it had a relatively limited material effect on London considering the scale of that war. Still, it elicited an outsized psychological reaction: the British hoped to launch a vast fleet of bombers against German cities in 1919.

Even at the end of the war, bombers made up less than 10 percent of every nation's air force except those of France and Britain, whose fleets consisted of 15 and 22 percent respectively.[3] Moreover, many of those aircraft were day bombers used over the Western Front, with purpose-built, long-range bombers a rarity even in Britain. This reality explains why British bombers dropped 6,402 tons of bombs on the Western Front compared to the Royal Air Force's short-lived Independent Force dropping a mere 537 tons on Germany.[4]

Dropping bombs is one thing; measuring their effect is another. Germany's bombing efforts, for example, cost the British about three million pounds in property damage. But, as Robin Higham acerbically noted, to place that number in perspective, hungry rats caused about 70 million dollars in property damage each year.[5] Similarly, the British admitted their efforts had little material effect on Germany, preferring instead to celebrate the more questionable morale effect British bombing had on German civilians.[6] Theory outran capability thus keeping the alluring promise of strategic bombardment alive.

The aircraft responsible for far greater strategic effect during the war were those that provided intelligence, spotted for artillery, and fought to achieve air superiority. The powerful theory of strategic bombardment therefore remained untested. Thus arose a conundrum early in airpower's history regarding the best way to employ it. Some Airmen in leadership positions in the United States and Great Britain were

2. H. G. Wells, *The War in the Air* (London: *Pall Mall Magazine*, 1908; reprint, independently published, 2012), 147.

3. John H. Morrow Jr., *The Great War in the Air: Military Aviation from 1909 to 1921* (Washington, DC: Smithsonian Institute Press, 1993), 346.

4. Richard J. Overy, "Strategic Bombing before 1939: Doctrine, Planning, and Operations," in *Case Studies in Strategic Bombardment*, ed. R. Cargill Hall (Washington, DC: Air Force Historical Studies Office, 1998), 24.

5. Robin Higham, *Air Power: A Concise History* (New York: St. Martin's Press, 1972), 57.

6. Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombardment, 1914–1945* (Princeton, NJ: Princeton University Press, 2009), 57.

deeply enamoured with the theory of strategic bombardment, even if most airmen believed airpower had provided its most important contributions on the battlefield.

Practical concerns amplified this tempting theory. Not only did leaders seek to avoid the human costs of the World War I battlefield, but the theory of strategic bombardment helped justify retaining the new independent status of the Royal Air Force, keeping it in existence at a time of extreme budgetary challenges.

This period in history holds key implications for today's theoretical arguments in the space and cyber domains. The same kind of tension between tactical and strategic airpower is echoed between those who advocate for focusing more on developing space capabilities that support warfare occurring on Earth—brown-water spacepower—as opposed to those who argue for more independent spacepower capabilities—blue-water spacepower.[7]

Blue-water advocates contend the key lesson from airpower's early trajectory is that the Air Force today treats the Space Force much like the World War I-era US Army treated the future US Air Force. The more pertinent lesson may be that the Space Force must balance a range of missions far better than the newly independent Air Force did. One of the key challenges is determining what the right pursuit of blue- and brown-water capabilities in the near, mid- and far term looks like.[8]

Theme Two: Strategic Bombing Can Work

Airpower students should appreciate how dogmatically many Airmen have embraced the notion of strategic bombardment. They should also recognize that strategic bombardment can work and that it has helped nations achieve their pursuit of political objectives, albeit rarely as decisively or independently as some airpower zealots have argued.

This assertion challenges Robert Pape's classic *Bombing to Win: Air Power and Coercion in War*. This intriguing, important book deserves to be read. Problematically, however, Pape built his work on a straw man by asserting that the US Air Force of 1996 thought very similarly to the Army Air Corps of 1930 or even the US Air Force of 1965.[9] In other words, Pape insisted strategic bombardment—which he conflated with punishment bombing or the deliberate targeting of civilians in hopes of affecting leaders' decision-making calculus—dominated Air Force thinking even after the Vietnam War.

Despite the existence of a small and vocal contingent of advocates, including John Warden and his acolytes, strategic bombardment did not dominate Air Force thinking after the Vietnam War.[10] The institution's 1984 version of its *Basic Doctrine*, for

7. Malcolm Davis, "Towards a Blue-Water Space Force?," Australian Strategic Policy Institute, May 19, 2020, https://www.aspistrategist.org.au/.

8. Davis, "Blue-Water Space Force?"; and Michael Horowitz, "War by Timeframe: Responding to China's Pacing Challenge," War on the Rocks, November 19, 2021, https://warontherocks.com/.

9. Robert Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996).

10. John A. Warden III, "Strategy and Airpower," *Air & Space Power Journal* 25, no. 1 (Spring 2011).

example, recognized strategic attack could be important. Even then, though, it suggested its use in conjunction with a host of other missions, noting that "[m]odern warfare has demonstrated the potential importance of strategic attacks against targets in an enemy's heartland."[11] In the 1992 version of the doctrine, in a section on "force application," an example of close air support immediately followed an example of strategic attack, showing a range of emphasis on kinetic attack.[12]

The doctrine further enjoined commanders to consider other political and military factors in deciding whether to pursue strategic attack. This measured recommendation marked a significant departure from the far more single-minded and independent approaches of previous generations of pilots to employ strategic bombardment.[13] The Air Force of 1992 better understood the need to be prepared for a wide range of airpower employment across the spectrum as part of an "interdependent team of land, naval, and aerospace forces."[14]

Despite the existence of this doctrine, Pape conflated Air Force support for strategic attack with punishment or the direct targeting of civilians. His three other categories of coercive airpower strategy included (1) risk or slowly increasing amounts of punishment; (2) decapitation or seeking to remove a leader or paralyzing a government from acting; and (3) denial, consisting of attacks on an opponent's fielded forces, seeking to undermine an opponent's military strategy.[15]

Based on historical evidence, it is difficult to challenge his conclusion that denial offers the best approach to coercive airpower strategy provided the enemy wages a conventional war of movement. But Air Force doctrine already encouraged this approach rather than advocating for punishing civilians. The 1984 Basic Doctrine, for example, explained that the "basic objective" of aerospace forces centered on securing air superiority and targeting an opponent's "warfighting capacity."[16]

Airpower advocates went too far for much of airpower history in claiming that airpower could win wars on its own. Pape goes too far in the other direction by saying strategic bombing does not work, thus potentially forestalling the employment of important airpower capabilities. One important critique of Pape is Mark Conversino's "The Changed Nature of Strategic Air Attack."[17] Moreover, if one reads Pape, one

11. US Department of the Air Force (DAF), Air Force Manual (AFM) 1-1, vol. 1, *United States Air Force Basic Doctrine* (Washington, DC: DAF, 1984), 2-12, https://aul.primo.exlibrisgroup.com/.

12. DAF, AFM 1-1, vol. 1, *Basic Aerospace Doctrine of the United States Air Force* (Washington, DC: Headquarters, DAF, March 1, 1992), 6, https://apps.dtic.mil/.

13. Phil Haun, *Lectures of the Air Corps Tactical Corps and American Strategic Bombing in World War II* (Lawrence: University Press of Kansas, 2019).

14. DAF, *Basic Aerospace Doctrine*, 1-3.

15. Pape, *Bombing to Win*, 58.

16. DAF, *Basic Aerospace Doctrine*, 1-3.

17. Mark J. Conversino, "The Changed Nature of Strategic Air Attack," *Parameters* 27, no. 4 (1997), https://press.armywarcollege.edu/.

should also read a revisionist work such as Phillip O'Brien's *How the War was Won*.[18] O'Brien argues the Allies' waging of war on a vast air-sea super-battlefield—in which long-range bombing played a crucial role—led to victory against Germany and Japan.

Not only did it work as theoretically intended, but it also had the additional benefit of disrupting the German fielded forces' ability to maneuver. More so than landpower, airpower and seapower both "multiplied exponentially the physical space and conceptual possibilities of the area of battle."[19] O'Brien does not argue airpower works best independently or that airpower works best in a support role for the Army. Instead, he reflects how an airpower strategy may work with or without other Joint capabilities to support larger political objectives.

In this vein, one of the best cases for successful strategic bombardment occurred in Operation Allied Force in 1999. Yet this operation required more than airpower. First, NATO benefited from a proxy force on the ground in Kosovo even if the two engaged in little coordination. Second, both the US Navy and the US Army participated to varying extents. Finally, NATO has maintained peacekeepers on the ground since 1999.[20]

Theme 3: A More Nuanced Model for Airpower

Historically, airpower has been dumped into two buckets: tactical and strategic. Tactical airpower generally refers to the way airpower can be used either directly on or near the battlefield. The desired effect is to make the opposing army less likely to succeed. By contrast, a strategic attack rests on the idea that one does not need to defeat an enemy's army but can go directly to the targets that an opponent values most, whether that be a nation's capital city, its key war-supporting factories, or other nonmilitary targets.

This delineation led to some aircraft being identified as strategic, primarily long-range bombers. By contrast, most airmen understood fighters or attack aircraft as tactical. Occasionally the buckets became so full that water spilled out, such as in cases of strategic bombers supporting soldiers on the battlefield.

Although it remains tempting to refer to strategic and tactical airpower for the sake of convenience, airpower education seeks to avoid this dichotomy for good reason. First, strategic is a loaded word that suggests its use has greater value than tactical airpower. As mentioned already, airpower effectiveness depends on context, and there is no single solution for the best way to employ it.

An A-10 attack aircraft destroying an armored personnel carrier that unknowingly held an important leader, for example, might have just as much strategic effect as anything a bomber might do intentionally against an opposing nation's capital. Colin

18. Adam Tooze, *The Wages of Destruction: The Making and Breaking of the Nazi Economy* (New York: Allen Lane, 2006).

19. Phillips Payson O'Brien, *How the War Was Won* (New York: Cambridge University Press, 2015), 5.

20. Anthony M. Schinella, *Bombs without Boots: The Limits of Airpower* (Washington, DC: Brookings Institution Press, 2019), 43–96.

Gray insists, in fact, that everything is tactical in the doing.[21] Strategic (long-range) bombers should simply be referred to as bombers. Indeed, long-range bombers have provided direct support to soldiers on the ground from World War II to Afghanistan. The label of strategic bomber, however, has confused commentators about the nature of the effect being sought.

Second, only one's opponent can determine an action's strategic effect.[22] This is not to say that battle-damage assessment cannot occur; instead, the point is that the enemy decides the extent to which an opponent's action affects its will and, as a result, its decision-making. In short, there is no such thing as a strategic bomber; a bomber may have a strategic effect like any other aircraft, including a cargo plane.

Mark Clodfelter posits one alternative model for organizing airpower. Like Pape, he provides four categories of airpower, although his model ultimately incorporates a broader range of missions beyond the kinetic. Clodfelter divides airpower into two different categories: direct and indirect. By direct, he means using airpower with the intent to have a kinetic effect—dispensing ordnance. By indirect, he refers to how airpower can have a nonkinetic effect ranging from providing intelligence to refueling other aircraft to jamming, along with a host of other missions.

Also, these aircraft may be used in an auxiliary fashion or independently. Auxiliary aircraft can be thought of as supporting landpower or seapower on a battlefield (broadly defined). In contrast, independent airpower often supports objectives that do not aim at an enemy's military forces on a specific battlefield. Operation Nickel Grass provides one exception. This mobility campaign provided key capabilities for the Israeli military to use in the 1973 Yom Kippur War.[23]

These four categories can be explained with mostly World War I examples (fig. 1). Direct auxiliary airpower consists of airplanes dropping bombs on tanks or troops on the battlefield. By contrast, indirect auxiliary airpower supports land and sea forces or even other types of aircraft, for example an aircraft relaying an artillery unit's location to another aircraft or fighting unit, enabling that second aircraft or fighting unit to use force against the artillery unit.

Like direct auxiliary airpower, the third category—direct independent airpower—relies on the employment of kinetic weapons, as seen in the case of German zeppelins dropping bombs on London. The last category, indirect independent airpower, does not have a kinetic effect. The Berlin Airlift, in which cargo planes provided crucial supplies to Berlin residents, resulting in the Soviets choosing to reopen roads to Berlin without a single weapon being used, provides one of the most compelling examples of indirect independent airpower. Indeed, it probably qualifies as one of history's most

21. Colin Gray, *Airpower for Strategic Effect* (Maxwell AFB, AL: Air University Press, 2012), 39.
22. Gray, *Strategic Effect*, 288.
23. Mark Clodfelter, *The Limits of Airpower* (Lincoln, NE: Bison Books, 1989), 213–15.

strategically effective uses of airpower because it sent a clear message to the Soviet Union that the United States would support its friends.[24]

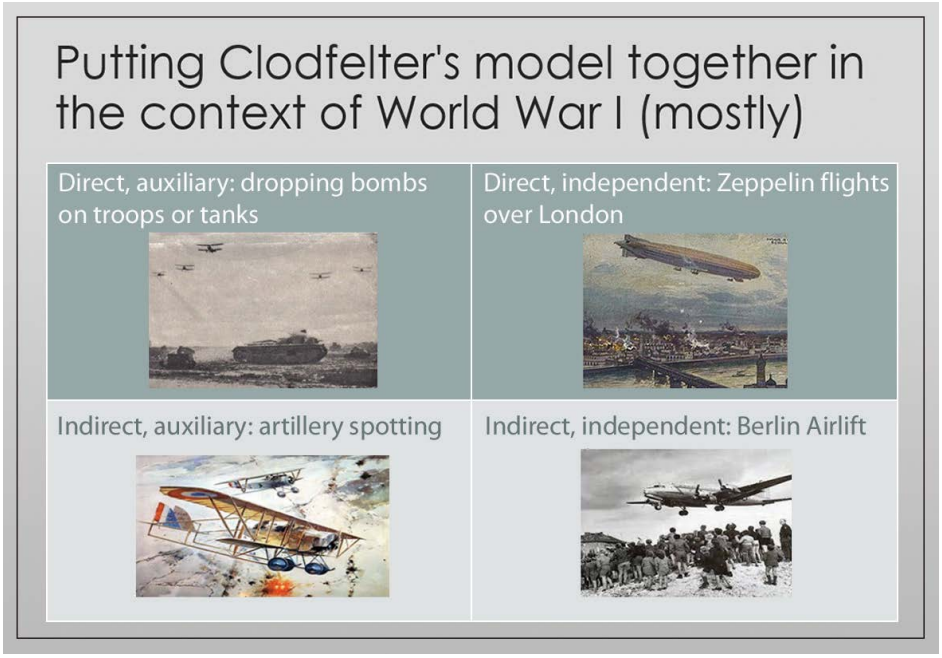

Figure 1. Clodfelter's model applied to World War 1

Even this model has some limitations, of course. Looking at the case of the indirect auxiliary aircraft in the bottom left corner, the observation plane is clearly coming under fire. But it is also armed with a weapon. In this case, the aircraft can potentially have a direct effect on an opponent's aircraft and an indirect effect in its original purpose of artillery spotting. Thus, Clodfelter's model offers more complexity than Pape's, moving airpower students past the strategic versus tactical dichotomy while introducing an additional distinction between kinetic and nonkinetic airpower.

Theme 4: Balancing Direct and Indirect Airpower

If Clodfelter's model did nothing more than add the notion of direct versus indirect airpower, it would still provide an invaluable service because of the extent to which kinetic airpower dominates the historiography. Perhaps the best work for appreciating indirect airpower is James Corum and Wray Johnson's *Airpower in Small Wars: Fighting Insurgents and Terrorists*.

24. John G. Terino Jr., "The Berlin Airlift," (lecture, Air Command and Staff College, Maxwell AFB, AL, November 19, 2018).

This work intriguingly argues that in unconventional or small wars, airpower's greatest effectiveness comes from its indirect effects or what it enables others to do.[25] The authors identify intelligence, surveillance, and reconnaissance and mobility as particularly crucial indirect airpower capabilities. The work also provides an introduction to the ways other less well known air forces, such as some in Latin America, employ airpower, as well as a wide chronological sweep of airpower history from its inception to just prior to the US-led global war on terrorism.

Ignoring mobility goes hand-in-hand with ignoring logistics, another critical enabler of airpower. Derek Salmi's *Behind the Light Switch: Toward a Theory of Air Mobility* is a recent important contribution to airpower thinking. Salmi provides a theory based primarily on the operational level of war in that his examples highlight how mobility enables campaigns as a whole. They also enable the employment of mass. The Berlin Airlift, for example, required 308 aircraft to meet the needs of Berlin's population; today, 17 C-5 Galaxies could ferry the equivalent amount of supplies.[26]

Salmi identifies five factors that facilitate the effective use of a range of air mobility capabilities—freedom of movement, command and control, integrated logistics, technology, and training. Incidentally, one may now arrive at the conclusion that airpower thinking has moved beyond Clausewitz's trinity, given the tendency of these authors to offer more categories..

Salmi also notes Clausewitz clearly demonstrated how logistics affect the strategic level of war as well, observing that "nothing is more common than to find considerations of supply affecting the strategic lines of a campaign and a war."[27] Clear cases of strategic effect have occurred in the history of air mobility. As argued already, the Berlin Airlift convinced European nations that the United States could be counted on. Likewise, Operation Nickel Grass, referenced above, similarly demonstrates how mobility significantly enables the fulfillment of political objectives.

Yet air mobility and superiority often function more as enablers than as leading directly to meeting those political objectives. Perhaps air superiority receives more attention—to use Clodfelter's four categories—because it is more of a direct capability than mobility's more indirect nature. Yet as some have argued, air mobility underwrites the "American way of war" rather than just serving as a "logistical adjunct to trucks, trains, and ships."[28]

There is also a symbiotic relationship between air superiority and air mobility. In some ways, air mobility relies on air superiority—or what Salmi labels freedom of movement—before it can be brought to bear.[29] It is difficult to imagine, for example, the influx of C-17s into Afghanistan without a significant degree of air superiority. On

25. James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Terrorists and Insurgents* (Lawrence: University Press of Kansas, 2003), 8.

26. Derek Salmi, *Behind the Light Switch: Toward a Theory of Air Mobility* (Maxwell AFB, AL: Air University Press, 2021), 75.

27. Salmi, *Light Switch*, xv.

28. Salmi, xiii.

29. Salmi, 8.

the other hand, air superiority and air mobility have become interdependent since the Vietnam War. To achieve air superiority, today's short-legged fighters must rely on antiquated KC-135s, KC-10s, and their replacements, KC-46s.

Theme 5: Balancing Airpower for the Future Fight

In addition to comparing nonkinetic and kinetic capabilities, one must constantly prepare for an unknown future. Especially important is how a major air force best balances preparation for conventional wars versus insurgencies. A variation of this question is how do air forces best balance preparation for existential crises—or those wars that must be won but are less likely—versus those less critical to national security but much more likely to occur.

Two approaches to balancing airpower for the future fight show the degree to which framing can shape one's answer, as seen in two airpower publications focusing on contrasting aspects of the Vietnam War. It is well accepted that the Vietnam War can be understood as multiple wars, although historians differ on the exact number. Some focus on the war in the south, while others focus on the war over the skies of North Vietnam. Other approaches examine how the war expanded, looking at the Vietnam War in the context of Laos or Cambodia.

The authors' choice of which war(s) they use to frame their study of airpower critically shapes the arguments and the lessons they learn from it. To use Clodfelter's model, Brian Laslie's *The Air Force Way of War* epitomizes a direct independent approach to one Vietnam war: the air war over North Vietnam. Laslie argues the Air Force transformed itself in paradigm-shifting ways after Vietnam by relearning the importance of achieving air superiority over highly contested areas. Over time, he contends, these reforms led to a more operational approach to airpower employment in which Red Flag and related reforms helped in "systematically building and executing a workable air campaign."[30]

Regardless of those reforms, Laslie highlights the most conventional of the many Vietnam Wars: the air war against North Vietnam. For those Airmen advocating air superiority as the key lesson to be learned in Vietnam (i.e., learning the lessons of the Vietnam War against North Vietnam rather than South Vietnam), the Yom Kippur War of 1973 only further validated the need to focus on achieving air superiority in a conventional fight as the United States reoriented itself to prepare for war against the Soviet Union. The same debates occur today as military professionals argue about whether the United States is more likely to face large-scale conventional conflict or small wars (or a combination of the two).

By contrast, Laslie's proposition can be set against Corum and Johnson. They ground their work in challenging the Air Force's historically dogmatic approach to employing airpower. The authors cite as evidence the Air Force's determination to end

30. Brian D. Laslie, *The Air Force Way of War: U.S. Tactics and Training after Vietnam* (Lawrence: University Press of Kansas, 2015), 72.

the war in the south by defeating North Vietnam with strategic bombardment. This strategy was a problematic approach given the high will to fight in the North, in addition to the fact that North Vietnam did not rely on industrial warfare, with the notable exception of that nation's conventional invasion of South Vietnam in the spring of 1972.

Air Force leaders sought to turn the Vietnam War into one that suited them rather than acknowledging the war's character was determined by other key actors. Given the Air Force's historical preference for fighting direct, independent wars, one can ask a counterfactual of Laslie: would effective training for achieving air superiority over North Vietnam have changed the conflict's outcome in terms of meeting political objectives? Writing a decade before Laslie, Corum and Johnson likely would argue that such training would be irrelevant to the war's outcome. The war needed to be won in South Vietnam, which could not occur when a corrupt and unpopular government remained in power.

Air forces, like land and sea forces, must balance the question of how to prepare for state-on-state-conflict, counterinsurgencies, and a host of other conflicts. The Vietnam War required balancing the first two, but the question for the student of airpower is how well the Air Force prepared before the Vietnam War and how well it learned its lessons after that war. Understandably, the US Air Force has tended to ensure it prepares for state-on-state conflicts, making do with highly expensive equipment for counterinsurgency when required.

Whether it can more effectively balance in the future remains a key question. After Vietnam, military institutions chose to prepare for a conventional conflict with the Soviet Union. Whether they chose correctly must be considered carefully without the benefit of hindsight, as we only know now that a conventional state-on-state conflict did not break out. Today, the United States finds itself in a similar place after the US-led war on terrorism, the global campaign launched following the terror attacks of 9/11 and ending with the withdrawal of most troops from Iraq and Afghanistan by the end of the Obama administration. The US Army, for example, is torn between advocates insisting on preparation for large-scale ground combat while others argue vehemently for finally learning the lessons of counterinsurgency and proxy wars.[31]

Theme 6: Balancing Continuity and Change in Airpower History

According to one historian, World War I saw the maturation of aircraft through five generations, evolving dramatically from aircraft that simply struggled to fly over the channel from England to France.[32] Yet by contrast, today in 2022 the US Air Force

31. Nathan Jennings, Amos Fox, and Adam Taliaferro, "The US Army is Wrong on Future War," Modern War Institute, December 2018, https://mwi.usma.edu/.

32. Richard Hallion, *Taking Flight: Inventing the Aerial Age from Antiquity through the First World War* (New York: Oxford University Press, 2003), 353.

awaits its fifth-generation aircraft to enter the fleet in greater numbers and, on the horizon, sixth-generation aircraft are planned to replace the F-22 in particular. The point of this comparison is not to highlight competing narratives of fifth-generation aircraft but to stress the tendency to overemphasize change in airpower history, particularly regarding technology, at the expense of the tremendous continuity in airpower history at the strategic and operational levels.

In this vein, when studying airpower, it is easy to get sucked into the incredible pace of change in technology beginning with World War I. How one views the contributions of technology to airpower's greatest successes and failures greatly shapes one's perspective on specific campaigns. Regarding Operation Iraqi Freedom, for example, a technology-centric advantage may lead one to characterize this campaign as defined by shock and awe due to technological advantages like stealth and precision.[33]

By contrast, Williamson Murray begins his case study about that conflict by explaining that it was a "throwback to the earliest days of airpower."[34] It may be even more correct, however, to replace the word throwback with that of continuum. The use of airpower since World War I highlights key areas of continuity regarding airpower employment. Importantly, for example, aircraft in World War I attempted the same key missions that airpower continues to perform today.[35]

This emphasis on continuity serves the further purpose of grounding air forces' tendency to be overly fixated on technology at the expense of strategy.[36] German World War II ace Johannes Steinhoff once opined, "the war in the air is a technological war which cannot be won by a technologically inferior fighting force," but his statement deserves unpacking.[37]

To what extent did the Germans lose in World War II because of a technologically inferior fighting force? Were they even technologically inferior? After all, they operationalized jet aircraft first. Such advantages, though, mattered little in the skies for any number of reasons, such as the failure to get jets operational in large enough numbers fast enough. Additionally, other reasons—such as flawed strategy—offer more causal explanations for German defeat, with strategic limitations emerging as early as the Battle of Britain.[38] For today's air forces, adequately preparing for warfare requires serious deliberation that goes far beyond acquiring the latest and greatest technology.

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33. Harlan Ullman, "Slogan or Strategy?: Shock and Awe Reassessed," *National Interest*, no. 84 (2006); http://www.jstor.org/.

34. Williamson Murray, "Operation Iraqi Freedom, 2003," in *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 279.

35. Derek Salmi, *Slim Chance: The Pivotal Role of* Air *Mobility in the Burma Campaign*, Drew Paper no. 15 (Maxwell AFB, AL: Air University Press, 2014), 5–6.

36. Gray, *Strategic Effect*, 298.

37. Johannes Steinhoff, *Messerschmitts Over Sicily: Diary of a Luftwaffe Fighter Commander* (Mechanicsburg, PA: Stackpole Books, 2004).

38. M. P. Barley, "Contributing to its Own Defeat: The Luftwaffe and the Battle of Britain," *Defence Studies* 4, no. 3 (2004).

To wit, one British officer has recently argued, "the current struggle for the intellectual soul of militaries is . . . between those who are guided by history and those guided by science fiction."[39] But this helpful commentary leaves one unsure as to how to balance these two very different approaches. If Carl H. Builder was correct, the Air Force has fallen too much into the trap of a technologically deterministic and futuristic approach.[40]

General Hap Arnold's vision for an unmanned Air Force shortly after World War II helps illustrate this problem, given the potential gap between the vision of the future and the reality that followed, in other words, between what can be imagined and what is realistically possible. In his defense, however, we can only see this gap in hindsight. Institutions must dream big while simultaneously tempering those visions with the realization that one cannot predict when technology will become operational.

Resources must also be devoted to training, personnel, and other investments beyond technology. In July 1944, for example, Arnold confidently stated, "We have won this war, and I am no longer interested in it." Now he sought to turn his interest to the future of airpower, including meeting his vision for an unmanned Air Force, which still has not been fully realized."[41]

This story of technological vision outpacing capability is an old one. But Murray's interpretation of Operation Iraqi Freedom as a "throwback" holds equal importance in reminding militaries to try to contextualize those futuristic visions in history and theory. While some futurists argue we can "see the outline" of change underway, other scholars contend futurists have a poor record for accurately predicating the future.[42]

Regardless of which approach is more correct, institutions must prepare for an uncertain future, ensuring they are ready for conflict at an unknown time. Such a challenge is not for the weak-hearted. Moreover, the rapid rate of technological change adds an additional layer of complication. There is an intelligence problem relevant to this discussion as well. Precision weapons rely on precise intelligence, making this capability the "21st century turn-key to successful airpower employment," just as these capabilities crucially enabled artillery spotting on the Western Front in World War I.[43]

Thus, while acknowledging nuclear weapons as a notable outlier, the ideas that underpin theory and strategy tend to remain more steady and constant than not. As naval theorist Alfred Thayer Mahan argued amid a great period of transition from steamships to battleships, occasionally, the "superstructure of tactics has to be altered or wholly torn down; but the old foundations of strategy so far remain, as though laid

39. Paul Barnes, "Learning the Wrong Lessons," Modern War Institute, February 4, 2022, https://mwi.usma.edu/.

40. Carl H. Builder, *The Masks of War: American Military Styles in Strategy and Analysis* (Baltimore: Johns Hopkins University Press, 1993), 21.

41. "Von-Karman's Own Story," *Airman Magazine*, November 1967, 113.

42. P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (New York: Penguin Books, 2009), 10; and Lawrence Freedman, *The Future: A History* (Washington, DC: PublicAffairs, 2017).

43. Murray, "Operation Iraqi Freedom," 281.

upon a rock."[44] This point aligns with Gray's insistence that airpower practitioners must be strongly grounded in airpower history because it allows the "structural perspective of a longue durée," which helps inoculate practitioners against falling prey to unsound ideas.[45]

Theme 7: Civil-Military Relations and the Wars of Frustration

Even almost a half century after the Vietnam War, another unsound idea continues to circulate: the powerful myth of civilian leaders handcuffing airpower and other capabilities, which purportedly caused the United States to lose the war.[46] Unfortunately, this myth remains alive and well, although it is understandable because many current Airmen have experienced their own frustrations with civilian authorities imposing limitations on airpower employment.

Clodfelter's *The Limits of Airpower: The American Bombing of North Vietnam*—the same work that provided the quadrivium model of direct or indirect and/or independent or auxiliary airpower—may be the best candidate for puncturing that myth. Clodfelter compellingly challenges Strategic Air Commander General Curtis E. LeMay's contention that the United States could have won the Vietnam War as early as 1965 by bombing less than 100 targets—supporters of LeMay's argument point to President Richard Nixon's seemingly successful unleashing of airpower against Hanoi during Linebacker II.[47]

But Clodfelter's analysis reveals the flawed nature of the contention that the United States could have won quickly and easily. Most importantly, changing US political objectives and the character of the war, such as reduced support for North Vietnam from the Soviet Union and China, made a kind of victory far more achievable in the early 1970s than it would have been in 1965.

In Clausewitzian fashion, Clodfelter also argues that positive objectives—or those that require the use of force—must be correctly balanced with negative objectives, in which one must eschew or limit the use of force to achieve them.[48] To achieve victory, Clodfelter insists negative objectives matter as much as positive objectives. In other words, rules of engagement and other limitations imposed on airpower are not just unpleasant inconveniences. Instead, they are essential to achieving political objectives. With its goal of peace with honor (a euphemism for American withdrawal), the Nixon

44. Colin Gray, "The Changing Nature of Warfare?," *Naval War College Review* 49, no. 2 (Spring 1996), https://digital-commons.usnwc.edu/; and Gray, *Strategic Effect*, 267.

45. Gray, *Strategic Effect*, 276.

46. Mark Clodfelter, *The Limits of Airpower: The American Bombing of North Vietnam* (New York: Simon & Schuster, 1989).

47. Phillip S. Michael, "The Strategic Significance of Linebacker II: Political, Military, and Beyond" (thesis, Army War College, 2003), https://apps.dtic.mil/.

48. Clodfelter, *Limits of Airpower,* 216.

administration had implemented limited and achievable objectives by 1972 in a way that the Johnson administration could not.

Given the rising importance of precision weapons in the West over the last few decades, it is unlikely civilian leaders would remove highly restrictive airpower rules of engagement except in the case of the most existential wars. But as early as World War I, Airmen resisted restrictions imposed from above.[49] Clodfelter's work provides historical and even theoretical context to why imposing limits on war can work toward achieving one's political objectives—the achievement of which is necessary to victory—rather than just making it more difficult to wage war.

The term *victor*y is also a problematic one; alternative concepts like an enduring peace are more accurate. But the restriction of force can enable both visions. There is some evidence that the Soviet Union began sending aircraft into North Korea in the first place in response to the repeated tendency of US Airmen to cross the Yalu River, creating an ongoing battle for air superiority that lasted the rest of the engagement.[50] Civilian leaders also worried rightfully about the possible risks of escalation, a strategic consideration sometimes difficult for Airmen at the tactical level to appreciate.[51]

Theme 8: Studying Airpower in the Context of Other Domains

Another source of frustration for airpower practitioners and scholars can be the wide disconnect between airpower and landpower. Read a history of the Korean War written by a landpower author, for example, and airpower serves as a small adjunct to the war, primarily worth mentioning solely for its provision of close air support.

Naval officer J. C. Wylie offers a helpful explanation for that distinction: air and land strategies can differ fundamentally, as seen in the differences between sequential and cumulative strategies. Generally, a sequential strategy approach helps characterize the land domain, especially in conventional warfare. This approach revolves around a sense of geographical progression as the primary means of assessing progress, or as Wylie describes it, a "series of actions growing naturally out of, and dependent on, the one that preceded it," such as the two drives across the Pacific during World War II.[52]

Some may rightly observe that a linear focus can be problematic in unconventional or low-intensity conflict. This critique is fair, although one may point out that such operations are nothing new.

Airpower, by contrast, is more diffuse. In some ways of course, airpower supports a sequential strategy. But it is more complex than that. For this reason, Wylie introduces a cu-

49. Andrew Barros, "Strategic Bombing and Restraint in 'Total War,' 1915–1918," *The Historical Journal* 52, no. 2 (2009): 422.

50. Conrad Crane, *American Airpower Strategy in Korea* (Lawrence: University Press of Kansas, 2000), 49.

51. Heather Venable, "Turning "Small" Wars into 'Big' Wars: How Tacticians Endanger Us All," Divergent Options, August 26, 2019, https://divergentoptions.org/.

52. J. C. Wylie, *Military Strategy: A General Theory of Power Control* (Annapolis, MD: Naval Institute Press, 2014), 22–23.

mulative strategy that can be understood as more attritional. Submarine warfare in World War I and II, for example, exemplified a cumulative strategy whereby the "entire pattern is made up of a collection of lessor actions" that are "not sequentially interdependent."[53]

Notably, Wylie believes cumulative warfare cannot be decisive in its own right; instead, its success determines the "difference between success or failure of the sequential."[54] Thus, he seeks to convince strategists to consider how to "balance our sequential and cumulative efforts toward the most effective and least costly attainment of our goals."[55]

A cumulative strategy can be useful in thinking about air superiority in the air domain. Air superiority can be obtained in many ways, including in a localized and temporary manner. This attainment of air superiority may occur far away from the land domain's location in a way that allows airpower to achieve independent or joint objectives that fulfill overarching political objectives.

The campaign to achieve air superiority against Germany during World War II is a particularly useful example of this diffuse concept. This campaign both enabled a sequential strategy—the joint operation beginning with the amphibious landing at Normandy in June 1944, to the Army's progress into Germany until May 1945—and had cumulative objectives of its own outside of achieving air superiority, with the Army Air Forces seeking a decisive effect on the German government by destroying key sectors of its economic and transportation nodes.

Viewing World War II solely through a sequential strategy—the Army's movement from France into Germany—misses the broader truth. That is, the previous air war over the German homeland, which targeted the German air force, factories, and the transportation network, played a critical role in enabling the subsequent and desired sequential strategy. The Army Air Forces may have desired to achieve victory through its cumulative strategy independently, thereby making the Normandy landing and subsequent operations unnecessary, but that did not occur.[56]

Given the extent to which some Army officers envision air capabilities primarily serving to support their objectives directly over the battlefield, it is useful to consider how Wylie and others help explain why air strategy can be formulated in a way that offers more than just air superiority or close air support.

Conclusion

The most obvious approach to studying airpower would be chronological, beginning with airpower in World War I and continuing through to the present, filling in holes as

53. Wylie, *Military* Strategy, 23.

54. Wylie, *Military* Strategy, 25.

55. Wylie, *Military* Strategy, 25–26.

56. Heather Venable, "Working Backwards from Berlin to the Bocage: Coalescing Airpower Application in the European Theater of Operations in 1944," Strategy Bridge, October 7, 2019, https://thestrategybridge.org/.

needed. For those already engaged in the study of airpower, however, this article seeks to offer some key themes to consider studying airpower more holistically and conceptually.

Airpower practitioners and theorists stunted the study of airpower practically from its infancy with their dogmatic investment in strategic bombardment. In many ways, they did not begin to mature in that study until after the Vietnam War. That maturation process continues today, with the aforementioned themes offering strategically important considerations for airpower's best use. The goal is to assure that an individual is well prepared to answer that age-old airpower question: what are the most effective ways to employ airpower in a particular context and why? **Æ**

CLAUSEWITZ IN SPACE

FRICTION IN SPACE STRATEGY AND OPERATIONS

Randall E. Carlson

Ron Gurantz

One of Clausewitz's most well-known contributions is the notion of friction, which refers to obstacles to the application of military power other than enemy action. While friction has been recognized as an enduring feature of warfare, the concept has not been explicitly applied to military space strategy or operations. The military must account for four potential sources of space friction when making decisions about strategy and operations: the space environment, spacecraft-maneuvering limitations, space intelligence, and the reliance on complex technological solutions. The military can alleviate friction with the right policies, but it must realize that many of its efforts will involve frictional tradeoffs that trade one form of friction for another.

Prussian military strategist Carl von Clausewitz once wrote, "Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction."[1] In his classic *On War*, Clausewitz uses the term friction to refer to the various difficulties in war that are not caused by enemy action. Just as friction slows an object's momentum for Sir Isaac Newton, friction slows the momentum of military power for Clausewitz. Despite technological advances promising to reduce it, friction remains a reality in modern warfare and one of Clausewitz's most enduring contributions to the theory of war.

The US military should consider friction while developing spacepower strategy, tactics, and culture. The US Space Force and US Space Command (USSPACECOM) were established to manage and lead military space forces and develop strategies and operational concepts for their use. As they do this work, they must recognize that the application of military space power will be subject to the same difficulties and uncertainties that military power faces in other domains. Not all problems can be anticipated, but identifying potential sources of difficulty is the first step toward managing them.

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1. Carl von Clausewitz, *On War*, trans. Peter Paret and Michael Howard (Princeton, NJ: Princeton University Press, 1984), 119. (Special thanks to Vanya Bellinger, Carl Bottolfson, Antulio Echevarria, Brian Fry, Benjamin Ogden, and two anonymous reviewers for their comments. All errors are the sole responsibility of the authors.)

This article identifies and analyzes four sources of friction that will create challenges in the use of military spacepower: (1) the space environment, (2) spacecraft-maneuvering limitations, (3) space intelligence, and (4) reliance on complex technological solutions. This article also identifies potential and ongoing efforts to mitigate these sources of friction. While military space forces can address these challenges through technology and training, attempts to reduce friction often just trade one form of friction for another. These are best described as frictional tradeoffs.

Military Space Operations and Clausewitzian Friction

In 2019, the United States established the US Space Force and reestablished USSPACECOM to manage and lead US military operations in space. Like the other military services, the mission of US Space Force is to organize, train, and equip military space forces. Space Command's mission is to employ these forces and others across the military and government to conduct operations "in, from, and to space," deliver "space combat power" to the rest of the US military, and "defend vital US interests" in space.[2] Along with these organizational changes, there has been a shift in attitude. Top DoD officials began describing space as a war-fighting domain even before the establishment of the Space Force.[3]

These changes were driven partly by new security challenges in space. US military operations rely on satellites for communication; positioning, navigation, and timing; intelligence, surveillance, and reconnaissance; and missile warning. Potential adversaries, whose operations also depend on satellites, have developed ways to damage or destroy US and ally military, civil, and commercial satellites; disrupt signals; and otherwise interfere with operations.[4] Consequently, the United States is now preparing for a future war that could extend into space, including developing defensive and offensive measures and anticipating the possibility of fighting without the benefit of space-based assets.

Wartime Space Operations

Military space operations have been described as any operation that delivers effects "to, from, or through space."[5] At its most fundamental level, this means launching, operating, and maneuvering satellites so they can provide services to forces on the

2. "United States Space Command (USSPACECOM) Organizational Fact Sheet," United States Space Command (website), June 18, 2020, https://www.spacecom.mil/.

3. Marcia Smith, "Top Air Force Official: Space Is Now a Warfighting Domain," SpacePolicyOnline, May 18, 2017, https://spacepolicyonline.com/; and James N. Mattis, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Office of the Secretary of Defense, February 2018), 6, https://dod.defense.gov/.

4. Brian Weeden and Victoria Samson, eds., *Global Counterspace Capabilities: An Open Source Assessment* (Washington, DC: Secure World Foundation, April 2021), 3-28–3-35, xix, https://swfound.org/.

5. Todd Harrison, Kaitlyn Johnson, and Makena Young, *Defense Against the Dark Arts in Space* (Washington, DC: Center for Strategic and International Studies, February 25, 2021), 3, https://www.csis.org/.

ground. It can also mean space control operations like jamming satellite signals, cyber-attacks, or an array of physical attacks using lasers, missiles, and satellites armed with weapons like chemical sprays and grappling arms.[6] These attacks can come from the ground, sea, or air, or from space itself. Defensive actions can also include maneuvering and reconstitution.

In the developing field of space operations, the United States and others have explored space-based missile defenses and space-to-ground bombardment concepts. Though development along these lines seems unlikely anytime soon, China recently tested what some have called a fractional orbital bombardment system.[7] Operations in the near term will likely remain unmanned, but future operations may involve manned stations or the protection of human space travel. Operations will also likely be confined to Earth orbits, but states or private entities may soon develop a presence with military components on other celestial bodies.

Clausewitzian Friction

As the United States develops strategies and operational concepts for the military use of space, it will benefit from applying classical war-fighting concepts to understand its challenges. One of these concepts is Clausewitz's notion of friction. Some refer to space as a "frictionless environment."[8] The almost total absence of gasses in the vacuum of deep space means objects there experience almost no drag. While this of course refers to Newtonian friction, Space Force members cannot ignore Clausewitzian friction.

The insights of an eighteenth-century theorist may not seem relevant for futuristic warfare, but his concept of friction has survived to the present day because it has been an enduring feature of warfare. Clausewitz dedicated a whole chapter in *On War* to describing and analyzing friction. He depicted friction as anything other than enemy action that causes unexpected difficulties. Before a war starts, "everything looks simple; the knowledge required does not look remarkable, the strategic options are so obvious."[9]

Once war commences, however, frictional elements appear and can impede operations and strategy execution. Militaries endure "the thousand little breakages, delays, and misunderstandings that impede and bedevil all activities."[10] The complexity of military organizations and operations ensures that unexpected dilemmas and challenges

6. National Air and Space Intelligence Center (NASIC) Public Affairs, *Competing in Space* (Wright-Patterson AFB, OH: NASIC Public Affairs Office, December 2018), https://www.nasic.af.mil/,

7. David E. Sanger and William J. Broad, "China's Weapon Tests Close to a 'Sputnik Moment,' U.S. General Says," *New York Times*, November 3, 2021, https://www.nytimes.com/.

8. Marc Rayman, "Dr. Marc Rayman's Mission Log: Voyage of Deep Space 1," Jet Propulsion Laboratory, National Aeronautics and Space Administration (NASA) (website), August 8, 2000, https://www.jpl.nasa.gov/.

9. Clausewitz, *On War*, 119.

10. Philip S. Meilinger, "Busting the Icon: Restoring Balance to the Influence of Clausewitz," *Strategic Studies Quarterly* 1, no. 1 (Fall 2007): 117, https://www.airuniversity.af.edu/.

will surface that interrupt the smooth execution of plans.[11] As "the difficulties accumulate," actual operations deviate further and further from plans and lose effectiveness. Enough friction can disrupt an entire war plan.

Clausewitz warned friction is unavoidable. Particularly in the era of mass armies, those armies' leaders cannot perfect the conduct of war through planning and training. Instead, they must expect and tolerate friction. A general needs to understand friction in order that she or he "not expect a standard of achievement in his operations that this very friction makes impossible."[12] Clausewitz believed much of the ability to overcome friction would come from instinct and experience rather than study, as friction is the one thing that "distinguish[es] real war from war on paper."[13] He also warned no one could ever predict all friction forms.

Still, Clausewitz tried to provide some insight into the causes of friction to help leaders prepare for it, which recent scholarship usefully divides into two categories.[14] The first category involves physical difficulties such as equipment breakdown, accidents, physical exhaustion, and poor weather, which can interfere with moving and fighting. The second category includes mental difficulties such as stress, fatigue, miscommunication, and incomplete intelligence, which can cause confusion and lead to poor decisions.

Clearly, Clausewitz believed friction to be unavoidable for mass armies. The US Space Force, however, is a small, technologically sophisticated, and highly professional force. Still, the force has and will continue to experience friction. Many view the Persian Gulf War as the gold standard for the professional, technologically advanced, and efficient delivery of military power. But even that war saw friction including equipment malfunctions, lapses in intelligence, coordination problems, and poor weather.[15] Indeed, some argue the amount of friction in the Gulf War was relatively similar to the friction troops faced in World War II.[16]

Even in space, where all actions are precisely calculated, things may not always go according to plan. Space activities outside of war have shown themselves to be imperfect, unpredictable, and dangerous. Well-known examples of catastrophe in manned US spaceflight exist, such as the *Challenger* and *Columbia* space shuttle disasters. The Russian space program has had its share of tragedies too, such as the deaths of the first cosmonauts to dock with the space station Salyut and a deadly rocket explosion in the

11. Alan Beyerchen, "Clausewitz, Nonlinearity, and the Unpredictability of War," *International Security* 17, no. 3 (Winter 1992–93): 77, https://www.jstor.org/.

12. Clausewitz, *On War*, 120.

13. Clausewitz, *On War*, 119–20, 122.

14. Eugenia C. Kiesling, "On War: Without the Fog," *Military Review* 81, no. 5 (September–October 2001), 86–87.

15. Barry D. Watts, "Clausewitzian Friction and Future War," McNair Paper 68 (Washington, DC: Institute for National Strategic Studies, October 2004), 24, https://apps.dtic.mil/.

16. Watts, "Future War."

early Mars program.[17] The Apollo 13 mission, which aborted its lunar landing after an onboard explosion but ended in the safe return of the astronauts, demonstrated the value of improvising following disaster in space.

There are also many less-well-known failures in unmanned space flight, including failures to launch or orbit, malfunctions, collisions, and breakups.[18] In early 1963, radiation from an American high-altitude nuclear test disabled the first private satellite, the communications satellite Telstar.[19] In 2009, an American and a defunct Russian communication satellite collided, generating thousands of pieces of debris that will continue to orbit the Earth for decades.[20] Most recently, SpaceX lost 40 small satellites from its Starlink constellation due to a magnetic storm.[21]

In war, the unpredictability and danger involved in space operations can only be amplified, and the consequences may be more severe. This article attempts to identify some reasons military space operations may encounter friction in war. Accordingly, friction should be an important consideration in planning for and executing military space operations.

Following Clausewitz, *friction* is anything besides enemy action itself that unexpectedly impedes the planned application of military power. This article does not attempt to list all types of friction that can arise in space—an impossible task. Instead, it highlights four important sources: (1) the space environment, (2) spacecraft-maneuvering limitations, (3) space intelligence, and (4) the reliance on complex technological solutions. The article then explores the implications of friction in space for the US military.

Sources of Friction in Space

Space Environment

The first set of frictional challenges the US military faces is due to the space environment itself. Clausewitz wrote about terrestrial weather slowing down progress and preventing the friendly side from seeing the enemy in time.[22] Weather is often the first example cited when discussing the concept of friction and is recognized as a major

17. Walter A. McDougall, *The Heavens and the Earth: A Political History of the Space Age* (New York: Basic Books, 1985), 243–44, 430.

18. MacDougall, *Heavens and the Earth*, 183, 190; Joe Hanson, "The Forgotten Cold War Plan That Put a Ring of Copper around the Earth," *Wired*, August 13, 2013, https://www.wired.com/; and Anz-Meador, "Top Ten Satellite Breakups Reevaluated," *Orbital Debris Quarterly News* 20, no. 1–2, (April 2016), https://orbitaldebris.jsc.nasa.gov/.

19. McDougall, *Heavens and the Earth*, 358

20. Brian Weeden, "2009 Iridium-Cosmos Collision Fact Sheet," (Washington, DC: Secure World Foundation, November 10, 2010), https://swfound.org/.

21. Robin George Andrews, "Solar Storm Destroys 40 New SpaceX Satellites in Orbit," *New York Times*, February 9, 2022, https://www.nytimes.com/.

22. Clausewitz, *On War*, 120.

physical obstacle to operations. Terrestrial weather itself can impact space operations by delaying spacecraft launches or interfering with terrestrial observations of space. Similarly, space weather can slow down the progress of the intended use of military power.

Department of Defense Joint Publication 3-59 defines space weather as "the conditions and phenomena in space and specifically in the near-Earth environment that may affect space assets or space operations."[23] Space weather, which often consists of the bombardment of high-energy charged particles from the Sun and outside the solar system, can inhibit military action by degrading a spacecraft's efficiency and lifetime. In its Space Capstone Publication, the US Space Force describes space as "dynamic" and "hostile" due to "a constant barrage of radiation and charged particles capable of severely damaging a spacecraft's physical and electrical components."[24]

Additionally, according to the National Oceanic and Atmospheric Administration (NOAA) Space Weather Prediction Center, solar flares can reduce or block high-energy radio waves employed for radio communications that the military and others use.[25] Historically intense solar flares capable of disrupting satellite operations occurred in October 2003 during Operation Iraqi Freedom.[26]

Finally, the worst space weather events, coronal mass ejections (CMEs), can take out power grids, as was the case for six million Canadians in Quebec in 1989.[27] While unlikely, a record-setting CME, on the scale of the 1859 Carrington Event, a massive geomagnetic storm that caused telegraph systems worldwide to fail, "would be powerful enough to knock out electrical and communications systems across Earth for days, months, or even years—nixing power grids, satellites, global positioning system (GPS), the internet, telephones, transportation systems, banking, you name it."[28]

Like terrestrial weather, space weather can be difficult to predict. Still, its intensity is correlated with the 11-year activity cycle of the Sun. The Quebec event happened during the solar maximum, the period of greatest solar activity during this cycle. Therefore, future space war operations may be constrained by space weather, much like early British World War II bombing campaigns were by terrestrial weather.[29] At a

23. Chairman of the Joint Chiefs of Staff (CJCS), Joint Publication 3-59: *Meteorological and Oceanographic Operations* (Washington, DC: CJCS, January 10, 2018), GL-5, https://www.jcs.mil/.

24. John W. Raymond, *Spacepower: Doctrine for Space Forces*, Space Capstone Publication (Washington, DC: US Space Force, June 2020), iii, iv, 9, https://www.spaceforce.mil/.

25. "Space Weather Impacts," National Oceanic and Atmospheric Administration Space Weather Prediction Center (website), n.d., accessed May 9, 2021, https://www.swpc.noaa.gov/.

26. Robert B. Collom, "Remembering the Historic Storms of 2003," NASA History, NASA (website), last updated August 6, 2017, https://www.nasa.gov/; and Rebecca Grant, "Storms of War," *Air Force Magazine*, July 1, 2004, https://www.airforcemag.com/.

27. Sten Odenwald, "The Day the Sun Brought Darkness," NASA (website), last updated August 7, 2017, https://www.nasa.gov/.

28. Andrew May and Daisy Dobrijevic, The Carrington Event: History's Greatest Solar Storm," Spacecom, May 20, 2022, https://www.space.com/; and Peter Dockrill, "Scientists Are Preparing for a Solar Storm so Powerful They're Calling It the Big One," *Science Alert*, April 8, 2016, https://www.sciencealert.com/.

29. Richard Overy, *Why the Allies Won* (New York: W. W. Norton, 1995), 108.

minimum, "having the proper understanding of space weather is critical when planning and conducting military operations. It also helps contribute to good space domain awareness, which is crucial when air and ground operators experience interference and degradation to radio signals, satellite communications, GPS signals, or radar operations."[30]

Maneuvering Limitations

Spacecraft-maneuvering limitations can cause friction as well. Except for the occasional astronaut it temporarily lends to NASA, the US military does not have people in space. Eventually it likely will, and Clausewitz's human physical exhaustion will apply to people working in free-fall or reduced-gravity environments inside vulnerable space suits. Until then, the problem of physical exhaustion in space applies not to people but to Space Force spacecraft due to their limited fuel. Spacecraft may be unable to conduct necessary tasks if they have already depleted their fuel due to unexpected maneuvers.

The Space Capstone Publication calls the space environment "contested, congested, and competitive."[31] Space is "congested" due to the proliferation of active satellites and debris along the most desirable orbits, creating the potential for unexpected collisions. A handful of collisions and near-collisions in the space age have already occurred; independent of necessary maneuvering to avoid enemy action itself, most spacecraft, with increasing frequency, must move to avoid collisions with space debris. This adds to the "physical exertion" the spacecraft experience as they deplete their cherished propellant.

Currently, except for the International Space Station, which NASA regularly resupplies, very limited refueling options for spacecraft exist.[32] Therefore, most spacecraft have limited maneuverability. Small maneuvers, such as firing onboard thrusters parallel or antiparallel to the direction of motion to slow down or speed up to avoid space debris, cost little propellant. In contrast, larger maneuvers, such as changing orbital planes, expend large amounts of fuel. Ultimately, the lifetime of many military spacecraft, unless space weather kills them first, is constrained by fuel.

Maneuvering limitations can be a source of physical friction because spacecraft may not have the maneuverability desired when operators call upon them. Perhaps more importantly, they can be a cause of mental friction. Maneuvering limitations pose difficult operational problems: when faced with the decision to maneuver, commanders must consider the effects on immediate events and on the longevity of the spacecraft and the importance of future missions. The complexity of these decisions can induce paralysis. Imperfect knowledge of a situation can lead to wrong decisions

30. US Air Force, Air Force Doctrine Publication 3-59: *Weather Operations* (Maxwell AFB, AL: LeMay Center for Doctrine Development and Education, October 28, 2020), 6.

31. Raymond, *Spacepower*, 10.

32. Sandra Erwin, "Northrop Grumman to Launch New Satellite-Servicing Robot Aimed at Commercial and Government Market," *SpaceNews*, September 23, 2021, https://spacenews.com/.

and introduce a paralysis that will "undermine one's resolve to act at all."[33] The same can be said for decisions that may permanently affect a spacecraft's future.

Space Intelligence

Third, space intelligence can cause friction. Clausewitz called intelligence a major source of friction burdened with "contradictory," "false," and "uncertain" information.[34] The seriousness of this makes "things appear entirely different from what one had expected" and "can bring military action to a standstill."[35] Scholars debate whether intelligence can be decisive for victory or defeat, but no one sees it as unimportant.[36] Intelligence failures can result in surprise attacks, inadequate or unnecessary defense preparations, and poor adaptation to enemy strategy and tactics.[37] Inaccurate intelligence can lead to war if states wrongly perceive an imminent threat or a window of opportunity, and it can prolong war by giving belligerents overly optimistic assessments of their prospects.[38]

Space intelligence is one piece of space domain awareness (SDA), a function that involves a surveillance network of satellites and ground-based radars, telescopes, and other sensors, and related systems and procedures, for monitoring and analyzing objects in space for potential threats.[39] It is a sophisticated system that "must be deliberately planned and maintained to ensure the right information is delivered to the right decisionmaker at the right time."[40]

But the current system is subject to uncertainty in the measurements of a satellite's position and velocity and does not provide complete coverage of the space environment. For instance, the system has historically had little coverage from the Southern Hemisphere—it could not continually track objects in certain parts of their orbits, though that has improved in recent years.[41]

A major driver of friction concerning the SDA mission is the uncertainty of locations of friendly and adversarial satellites and other resident space objects. Typically, the higher in altitude an object orbits, the more uncertain the Space Force SDA network is regarding that object's precise location, especially if that object modifies its orbit with maneuvers. The Space Force tracks objects with tags or unique identification

33. Watts, "Friction and Future War," 18.

34. Clausewitz, *On War*, 117.

35. Clausewitz, *On War*, 84, 117–18.

36. Robert Angevine, "*Intelligence in War: Knowledge of the Enemy from Napoleon to Al-Qaeda*, by John Keegan and *Uncovering Ways of War: U.S. Intelligence and Foreign Military Innovation, 1918–1941*, by Thomas G. Mahnken," (review) *Technology and Culture* 45, no. 4 (October 2004), https://muse.jhu.edu/.

37. Richard Betts, "Analysis, War, and Decision: Why Intelligence Failures Are Inevitable," *World Politics* 31, no. 1 (October 1978): 65–68, https://www.jstor.org/.

38. Fred Ikle, *Every War Must End*, 2nd ed. (New York: Columbia University Press, 2005), 17–37.

39. Raymond, *Spacepower*, 38; and Brian Weeden, "Space Situational Awareness Factsheet," Secure World Foundation (website), May 2017, 1, https://swfound.org/.

40. Raymond, *Spacepower,* 39–40.

41. Weeden, "Situational Awareness," 8.

codes. Unfortunately, cross-tagging, or mixing up the correct satellite tags, is an issue and source of friction.[42]

The US military should continue prioritizing SDA, but it should never expect it to be perfect. The area to be monitored is vast, and spacecraft can be designed in ways that make them more difficult to track.[43] More importantly, the fidelity of intelligence is a challenge. Even when satellites can be located and tracked, their capabilities and purposes may remain hidden. In 2017 for example, the Air Force and US Intelligence Community observed a new Russian satellite and thought they had an adequate understanding of its purpose and design. To their surprise, two other subsatellites deployed from the original.[44] Although none of these satellites were hostile, Russia proved some new technology and was able to spoof initial US attempts at analysis.

Even with fidelity, SDA will face challenges in interpreting information and divining intent. Space faces a particular challenge due to dual-use technologies. For instance, US Space Command revealed last year that China has a satellite with a robotic arm. More recently, China used a satellite to "tug" one of its other satellites into another orbit.[45] While an operator could use these capabilities for repairs or debris removal, they could also use them as weapons against enemy satellites. Communications, positioning, navigation, and timing, and intelligence, surveillance, and reconnaissance satellites can all be used for both civilian and military purposes, often at the same time, which complicates the assessment of each satellite's military utility and an adversary's strategy.

Ironically, attempting to improve understanding of the space environment can introduce friction into intelligence. The United States and its allies collect large amounts of data through their sensor networks. This introduces the problem of data processing, also called "computational friction," which is the challenge of transforming large amounts of data into usable information.[46] The problem of too much information may have replaced the problem of too little.[47]

Beyond the computational problems, an unavoidable role exists for humans in the process that can introduce friction, referred to as "information friction," caused by the

42. Phan Dao, *Automated Algorithm to Detect Changes in Geostationary Satellite's Configuration and Cross-Tagging* (Kihei, HI: Advanced Maui Optical and Space Surveillance Technologies Conference, 2015), https://apps.dtic.mil/; and Daniel L. Oltogge and Sal Alfano, *Determination of Orbit Cross-Tag Events and Maneuvers with Orbit Detective*, publication 11-413 (Noordwijk, Netherlands: International Association for the Advancement of Space Safety, 2011), https://www.agi.com/.

43. Harrison, Johnson, and Young, *Dark Arts in Space*, 17.

44. Harrison, Johnson, and Young, 22.

45. Brian G. Chow and Brandon W. Kelly, "Peace in the Era of Weaponized Space," *SpaceNews*, July 2021, https://spacenews.com/; and Theresa Hitchens, "China SJ-21 'Tugs' Dead Satellite out of GEO Belt: Trackers," Breaking Defense, January 26, 2022, https://breakingdefense.com/.

46. Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (Cambridge, MA: Massachusetts Institute of Technology (MIT) Press, 2010), 84.

47. Nikolas Gardner, "Clausewitzian Friction and Autonomous Weapons Systems," *Comparative Strategy* 40, no. 1 (2021): 86–87.

"endless minor obstacles" to using information collected by advanced systems.[48] Bureaucratic processes and human biases can affect how data is collected, stored, and accessed.[49] Operators must still sift through noise, interpret information, and fill inevitable gaps.

Even artificial intelligence can introduce friction due to limits in its powers of recognition and judgment, making it susceptible to deception and introducing an element of unpredictability into its actions.[50] Operators can mitigate some of these frictional components by combining their own intuition and training with artificial intelligence. Still, this all means that the Space Force and the Joint Force should use caution when making strategic decisions based on SDA. While it can be improved, SDA will never be perfect.

Complex Technological Solutions

Finally, the Space Force faces potential frictional challenges due to an emphasis on complex technology as a solution to strategic problems. Although Clausewitz did not explicitly address this category as a source of friction, he alluded to it by mentioning that improvements in firearms had not changed the central idea of war.[51]

Of course, advanced technology will be part of everything that the Space Force does, being the first service primarily focused on the remote operation of unmanned vehicles. Even solutions that place less emphasis on technological development will require some innovation to implement. But the United States has a long history of adapting by developing the most innovative and advanced systems.[52] While advanced technology has served the nation well, it can also increase complexity and expense, lead to overconfidence in technological superiority if strategists misunderstand inherent limitations, and lead strategists to ignore other options.

The Space Force and the Joint Force must grapple with some strategic decisions about how much they want to emphasize advanced technology as the solution to military problems. While the answer to these questions will depend on technical feasibility, resource availability, and adversary capability, choosing the more technological route will also carry the danger of adding to friction.

Without question, new technologies employed correctly can help war efforts. But new technologies can also cause friction by complicating operations. During World War II, the Germans lost momentum as a result of having a "bewildering array of

48. Jon R. Lindsay, "Information Friction: Information Technology and Military Performance" (PhD dissertation, MIT, 2011), 86–87, https://dspace.mit.edu/.

49. Jon R. Lindsay, "Target Practice: Counterterrorism and the Amplification of Data Friction," *Science, Technology, and Human Values* 42, no. 6 (2017), https://journals.sagepub.com/.

50. Gardner, "Autonomous Weapons," 86–87.

51. Clausewitz, *On War*, 76.

52. Thomas G. Mahnken, *Technology and the American Way of War Since 1945* (New York: Columbia University Press, 2010).

different vehicles and engines" that complicated logistical and maintenance efforts.[53] By contrast, the Soviet Union and the United States overwhelmed Germany by mass producing a limited number of less sophisticated designs.

Complex technological solutions can increase friction in many ways. They can result in a greater susceptibility to equipment breakdown and difficulties in reconstituting. They can increase expense, the need for expertise, the demand for support and logistics, and the complexity of operations.[54] They also take time and experience to incorporate into operations, as the proper utilization of new systems is not always obvious on day one and can make integration with Allies and partners more difficult. [55] In all cases, technical solutions can make the United States overly reliant on the shiny option rather than the rugged option and can increase the difficulty of responding when friction inevitably arises.

Another source of friction associated with complex technological solutions is information classification and potential over-classification. Since the 1950s, the US military has classified most of its space technology. While the intent is obvious, classification can hinder space operations, as ground-station operators may not have identical access to program information. In a conflict situation, an operator may not have access to critical information, and this could inhibit decision-making. Current Space Force and Space Command leadership admit that over-classification with space capabilities is a problem for communication with Allies and partners and even for deterring potential adversaries, since the leaders cannot easily discuss holding capabilities at risk.[56]

A preference for advanced technological solutions can also lead strategists to disregard other options. Scholars have distinguished between three different approaches to passively defending space assets: architectural, technical, and operational.[57] Architectural and operational approaches often rely on developing simple and redundant satellite systems rather than trying to develop systems more technically advanced than those of the adversary. Of course, these also require technological innovations and may demand a more technologically advanced network, but the individual systems on orbit may have simpler technology. Solutions may also involve adjusting the entire Joint Force to be less reliant on satellites, whether by finding other systems to replace satellite services or learning to live without those services.[58]

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53. Overy, *Why the Allies Won*, 217, 225.

54. Jacob W. Kipp and Lester W. Grau, "The Fog and Friction of Technology," *Military Review* 81, no. 5 (September–October 2001): 3.

55. Kipp and Grau, "Fog and Friction," 5; and William J. Perry, "Technology and National Security: Risks and Responsibilities" (presentation, Conference on Risk and Responsibility in Contemporary Engineering and Science: French and U.S. Perspectives, France-Stanford Center for Interdisciplinary Studies, Stanford University, April 7–8, 2003).

56. Brian W. Everstine, "Space Force, SPACECOM Working on New Communication Strategy to Fight Overclassification," *Air Force Magazine*, May 3, 2021, https://www.airforcemag.com/.

57. Harrison, Johnson, and Young, *Dark Arts in Space*, 11–18.

58. Paul Scharre, "The US Military Should Not Be Doubling Down on Space," Defense One, August 1, 2018, https://www.defenseone.com/.

In short, friction will influence space operations, whether in providing services to the Joint Force or conducting counterspace or space control operations. Space friction will be one component of the larger friction that invariably affects any military operation and will induce physical and cognitive limitations that influence how military decisions are made.

Addressing Friction in Space

Most officers recognize uncertainty characterizes warfare, as reflected in popular military sayings like "fog and friction" and "no plan survives first contact." Still, all military members must also recognize that military space operations are subject to the same kinds of issues as operations in other domains, including friction, and military campaigns could suffer accordingly.

For the Joint Force, friction in space can have many of the same impacts as enemy action in space. The availability and quality of space services such as communications, positioning, navigation, and timing, and intelligence, surveillance, and reconnaissance might be impacted. Operations to protect our space assets or deny the enemy access to space might fail. The timing of space operations, and therefore the timing of other operations that rely on space, can be affected. All these frictional sources can hinder military campaigns, disadvantaging the United States in attritional warfare and endangering the objective of space control.

Quantifying the total frictional elements' impact on space operations is difficult, but some elements seem more likely to affect operations than others. Space weather and maneuvering limitations have impacted spacecraft operations but, to our knowledge, have not yet crippled military space operations. But intelligence shortcomings in space are frequent, and disastrous results from an overemphasis on complex technological solutions may occur any day, as expensive and sophisticated satellites serve as "large, big, fat, juicy targets."[59]

Fortunately, US Space Force seems to be moving toward distributed or proliferated constellations or at least acknowledging that a trade-off exists between expensive, complex satellites more resistant to space weather and cheaper, simpler satellites less susceptible to antisatellite attacks. The service has recognized all these problems and has dedicated major engineering efforts to mitigate them. Still, they are problems for the application of military force in space.

What can the Joint Force do to prepare for friction in space operations? To some extent, simply being aware of the problem is part of the solution. Clausewitz warned commanders about friction, so they would be flexible and prepared to respond. In the same way, planners and commanders must anticipate friction in space operations and the terrestrial operations that depend on them.

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59. Sandra Erwin, "STRATCOM Chief Hyten: 'I Will Not Support Buying Big Satellites That Make Juicy Targets,'" *SpaceNews*, November 19, 2017, https://spacenews.com/.

Beyond awareness, many of the Defense Department's preparations for protecting access to space, or operating after losing space capabilities to enemy action, also apply to overcoming friction. Space Force officers know space weather, maneuverability limitations, and shortcomings in space intelligence. Their planners and Air Force Research Laboratory's Space Laboratories are actively working to address these problems.[60] Still, Clausewitz tells us friction in military operations will always exist, a fact which leads to the notion of frictional tradeoffs.

Frictional Tradeoffs

Some argue friction in warfare has not been meaningfully reduced in centuries despite technological advances that greatly improve battlefield awareness and command and control.[61] Often, attempts to reduce friction result in trading one type of friction for another. Accordingly, the Department of Defense and US Space Force should not lose sight of frictional elements they might create as they work to eliminate others. Whatever the specific circumstances, decisions about the future of military space forces will inevitably involve frictional tradeoffs. These tradeoffs center around technology, operations, and culture.

Technology

Many of the problems discussed will require technological solutions. Advanced technology will be part of everything the Space Force does. For example, electric propulsion may be a solution to maneuvering limitations. It is more efficient but slower than chemical propulsion and can be a great substitute if the mission allows a later arrival to the destination. It has been used on some spacecraft and will be used for the Cislunar Highway Patrol Satellite that must maneuver often.

Another solution is a space tug. Like their naval counterparts, these little but powerful spacecraft can connect to other spacecraft and provide needed services like propulsion. Additionally, with the proper equipment on board, such as a 3D printer, space tugs could also perform spacecraft repair operations.[62] The United States recently released a national strategy for developing in-space servicing, assembly, and manufacturing capabilities.[63]

60. US Air Force Research Laboratory (AFRL), "Air Force Research Laboratory," US Air Force (website), last updated October 2021, https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104463/air-force research-laboratory/.

61. Watts, "Friction and Future War," 81.

62. Aaron Rogers et al., "SHERPA: A Flexible, Modular Spacecraft for Orbit Transfer and On-Orbit Operations" (presentation, 17th Annual American Institute of Aeronautics and Astronautics, Utah State University Conference on Small Satellites, Logan, UT, August 2003), https://digitalcommons.usu.edu/.

63. In-Space Servicing, Assembly, and Manufacturing Interagency Working Group of the National Science and Technology Council, *In-Space Servicing, Assembly, and Manufacturing National Strategy* (Washington, DC: The White House, April 4, 2022), https://www.whitehouse.gov/.

Moreover, technical and design solutions can be used to adapt to friction. For example, the Space Force can develop reconfigurable satellites that can modify missions in orbit and plug-and-play satellites that can simplify design processes and manufacturing.[64] The service can shift from utilizing single, large spacecraft for specific mission objectives to a constellation of smaller, redundant ones capable of flexing objectives.

When friction like space weather degrades one system, the various missions can continue. Space intelligence problems can be relieved with an improved architecture incorporating new capabilities for identifying and characterizing space objects and integrating allied and commercial information. The Department of Defense is also seeking technological solutions to conducting war without space. For example, the Defense Department is exploring a meshed communication network called the Joint Aerial Layer Network (JALN) that is less reliant on satellite communications. Instead, the nodes of that network could come from airborne or ground-based platforms.[65]

Still, technological solutions introduce their sources of friction. The Space Force and Joint Force must implement solutions that consider the dangers of adding complexity to operations, logistics, and interoperability. In particular, adding more information does not necessarily improve understanding, even with artificial intelligence and machine learning methods for processing the information. Machines cannot remove the human decision-maker from the loop and may introduce other sources of friction.[66]

Operations

The Department of Defense's preparations to operate when enemy action degrades space capabilities could also help overcome friction. During certain wargames, with limited success, participants have attempted to overcome and prevail despite losing GPS. The US Marine Corps consistently conducts parts of its large-scale training exercises with degraded GPS and communications.[67] Similarly, in 2016, the US Naval Academy brought back celestial navigation to its curriculum after a hiatus that lasted almost 20 years.[68] Space aggressor squadrons support the Air Force in training for

64. UK Space Agency, "World's First Fully Flexible Satellite Lifts Off," July 31, 2021, https://www.gov.uk/; and James C. Lyke, "U.S. Air Force's Plug-and-Play Satellites," IEEE Spectrum, July 20, 2012, https://spectrum.ieee.org/.

65. Stew Magnuson, "U.S. Forces Prepare for a 'Day without Space," *National Defense Magazine*, February 1, 2014, https://www.nationaldefensemagazine.org/.

66. Gardner, "Autonomous Weapons."

67. Magnuson, "Day without Space."

68. Lily Hay Newman, "Naval Academy Brings Back Celestial Navigation Training in Case of a Cyberattack on GPS," *Slate*, October 9, 2015, https://slate.com/.

denied environments, and the US Army Space and Missile Defense Command does the same for the Army.[69]

Space friction or enemy action may also result in certain military units or members being cut off from others with little or no way to communicate. The idea of mission command exists DoD wide. Under mission command orders, leadership is more decentralized. Strategic leaders provide the commander's intent to operational and even tactical leaders, who are then trusted to carry out that intent, especially when they can no longer communicate with the leaders above them.

Mission command can also reduce friction. Under mission command, commanders may be forced to act without enough information about the battlefield. Decisions are made piecemeal, and units cannot coordinate adjustments to larger plans.[70] This is especially problematic if commanders need synchronization for space-surface operations. A lack of coordination or understanding can be a recipe for chaos. The same issues affect space-space operations, where any action will likely have enormous informational demands and terrestrial impacts. Moreover, space operations carry political sensitivities that make commanders wary of devolving authority and can result in unwanted strategic effects if they do. Again, commanders must take care when making these frictional tradeoffs.

Culture

The Space Force should do its best to plan and train toward contingencies as it develops its spacepower strategy, but it should also accept that this planning and training will inevitably fall short. Although it can gain some experience through wargaming, much of the experience Clausewitz calls for cannot be earned until the actual war starts, as every war is unique and brings different challenges. Therefore, the Space Force must develop a culture of risk-taking and adaptability to the numerous forms of friction that will arise.

Indeed, the Space Capstone Publication states Space Force values include "prizing risk-taking as opportunities to rapidly learn and adapt," but penning words today is much easier than executing war tomorrow.[71] The force's acquisition approach to developing new satellites specifically needs smarter risk-taking and adaptable methods. Military planners and leaders must avoid falling into a trap of thinking that operations will go exactly as planned.

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69. Arielle Vasquez, "527th SAS: Preparing Warfighters Now, into the Future," 50th Space Wing Public Affairs, February 2, 2018, https://www.schriever.spaceforce.mil/; and US Army Space and Missile Defense Command, "Disrupted Space Operational Environment," US Army (website), August 7, 2018, https://www.army.mil/.

70. Lawrence Skelly, "Getting the Conditions Right: Seeking Competitive Advantage in Military Operations through a Leadership Approach" (presentation at the Midwest Political Science Association Conference, Chicago, IL, April 2019).

71. Raymond, *Spacepower*, vii.

Of course, inculcating a certain strategic culture can be difficult, and there are contradictory impulses in the type of culture needed. Some have characterized space operators with the mentality of engineers and checklist-focused service providers.[72] With the growth of threats to space systems, military leaders have called for the creation of a war-fighter mentality within the Space Force that recognizes the military consequences of actions in space and reacts to interruptions to services as if they are potentially from enemy action. But it is not clear which culture can better handle the friction problems. While Guardians should absolutely understand their roles in supporting war-fighting operations, maneuvering through friction may still require some elements of an attitude of trying to "keep the lights on."

Conclusion

Unlike strategies in other war-fighting domains except cyberspace, spacepower strategy is in its infancy. While the Space Force continues to develop its strategy, technologies, and culture, it must not forget to consider certain friction elements. Friction will make operations and campaigns unpredictable, requiring an adaptable force if future space war occurs. Ultimately, the Space Force should look for ways to minimize its friction while recognizing it will have to deal with the unexpected. *Æ*

72. Kenneth Grosselin, "A Culture of Military Spacepower," *Air & Space Power Journal* 34, no. 1 (Spring 2020), https://www.airuniversity.af.edu/; and William D. Sanders, "Space Force Culture: A Dialogue of Competiting Traditions," *Air & Space Operations Review* 1, no. 2 (Summer 2022), https://www.airuniversity.af.edu/.

PORT IN THE DESERT

DJIBOUTI AS INTERNATIONAL LESSOR

Jessica Borowicz

Currently an island of stability in a troubled region, Djibouti remains among the few places that could host a US military base. Yet, in an era of increasing global competition, many argue the United States should find other options. But given Djibouti's location, relative stability, and the capabilities already emplaced, even as the United States can and should look at all the options, Djibouti will remain strategically important in the years to come.

As the United States looks to maintain global power projection in the face of its strategic competitors, future basing considerations should be predicated on strategic access. The US military base at the port of Djibouti provides critical logistics access to the Bab el-Mandeb Strait, the Gulf of Aden, and other key locations in the region. Despite the potential threats posed by China's new People's Liberation Army Navy base and threats presented by potential economic instability as other ports in the region reestablish and expand, the United States must embrace a relationship with Djibouti built on the view of a long-term partnership. Even as the United States should consider potential options to diversify its basing strategy, Djibouti will remain a key component in any basing operation within the Horn of Africa given the political, infrastructure, and access constraints elsewhere.

Background

Driving alongside the rocky landscape of Djibouti's sparsely populated countryside, it is easy to understand why first- time visitors often liken it to the moon's surface. In many areas, the rocks stretch for endless miles with barely a green shadow to signify that life has somehow survived in the unforgiving landscape and harsh climate. But further along the coastline, the palm trees and Caribbean blue-green water of the Gulf

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of Tadjoura emerge, advertising the country's most precious resource—its geostrategic location.

The United States is deeply invested in Djibouti, but arguments for continued support to this small nation in the Horn of Africa are little understood outside those immediately affected. To some, the calculus appears easy—simply move somewhere else with cheaper rents and fewer foreign military bases—as of early 2021 there were seven.[1] Yet while there are drawbacks to the location, including potentially destabilizing economic shifts and the 2017 opening of China's first overseas military base, Djibouti's geographic placement and relative stability underscore why the country remains the most strategic and stable option for US military assets in the region.

First, Djibouti is located at the narrowest choke point of the strategic Bab el-Mandeb Strait where access is a key US national interest. Second, despite a rentier government based on port fees and base leases, the country remains politically stable, a necessary trait for long-term agreements. And although these aspects can be threatened, such as through global competitors encroaching on the space or economic changes creating the potential for political instability, Djibouti remains the most viable option in the region to maintain US capabilities.

Strategic Location: Bab el-Mandeb Strait

Djibouti, the size of New Jersey, is a small country in the Horn of Africa located on the southwest shores of the Gulf of Aden, adjacent to the narrow Bab el-Mandeb Strait—a mere 18 miles wide at its narrowest point and the gateway to the Red Sea and the Suez Canal. Its strategic importance to the United States stems from a lack of other viable options in the vicinity to support US operations and freedom of maneuver, making the country a key node in counterterrorism efforts and protecting US interests in the region.

Positioned between the Arabian Peninsula and the Horn of Africa, the strait is the major feature that sets Djibouti apart from other African countries. Bab el-Mandeb connects the Red Sea and the Gulf of Aden and links the Indian Ocean and the Mediterranean, making it the main maritime passage and trading route between the East and West halves of the globe (fig. 1). This meeting point between Africa and Asia has been used since 3,500 BCE by multiple civilizations, including the Egyptians, Phoenicians, Ptolemaists, and Byzantines, to move treasure and develop extensive trade routes up and down the coasts of the surrounding continents.

1. Zach Vertin, *Great Power Rivalry in the Red Sea: China's Experiment in Djibouti and Implications for the United States*, Global China Series (Washington, DC: Brookings, June 2020), 17, https://www.brookings.edu/; Michael Rubin, "It's Time the Pentagon Finds an Alternative to Djibouti," *National Interest* (website), August 25, 2019, https://nationalinterest.org/; and Nigusu Adem Yimer, "How Djibouti Surrounded Itself by Military Bases," Politics Today, March 17, 2021, https://politicstoday.org/.

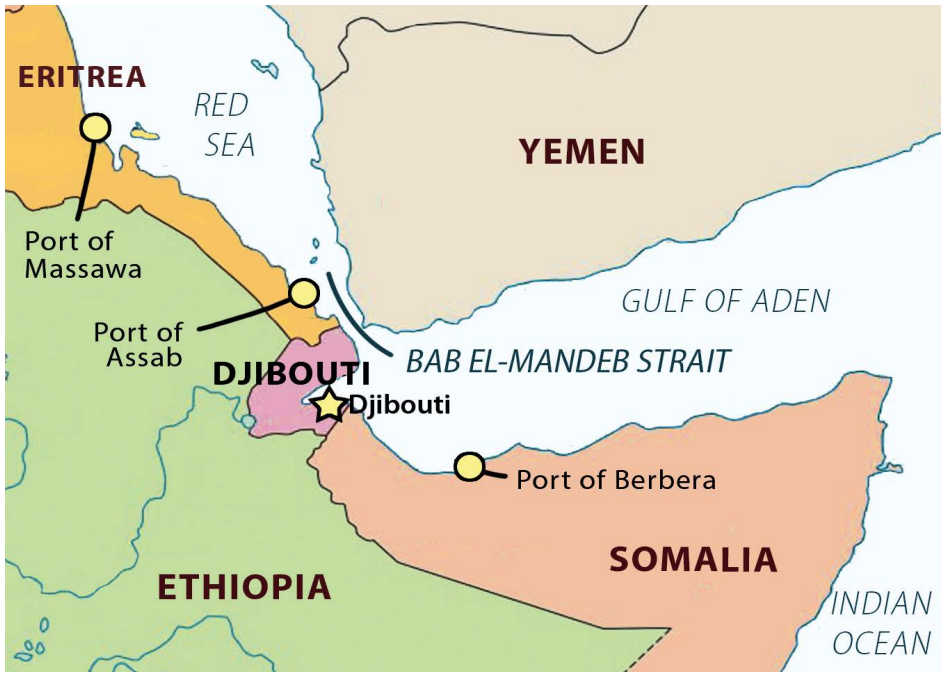

Figure 1. Horn of Africa and Bab el-Mandeb Strait

Today, ships transiting between the Suez Canal and the Indian Ocean must pass through the strait, making this waterway a key choke point. Approximately 30 percent of the world's trade moves through this critical waterway.[2] If Bab el-Mandeb were to close, the next closest route is around the southern end of Africa—an increase from 11 to almost 26 days, depending on the departure and arrival ports, with attendant increased transit costs.[3]

In terms of the global economy, an estimated 6.2 million barrels of crude oil passed through Bab el-Mandeb in 2018, making it a key location supporting the world economy.[4] Djibouti has minimal natural resources, limited arable soil or vegetation, and temperatures that reach 125 degrees Fahrenheit, leaving its geostrategic location among its most valued resources.[5] And while Djibouti, Eritrea, Sudan, Somalia, and Yemen all serve as access points to the strait, Djibouti emerges as the only viable option and long-term solution.

2. Andres Schipani, "Djibouti's Port Dream to Become the 'Singapore of Africa,' " *Financial Times*, June 1, 2021, https://www.ft.com/.

3. Peter S. Goodman and Stanley Reed, "With Suez Canal Blocked, Shippers Begin End Run around a Trade Artery," *New York Times*, March 29, 2021, https://www.nytimes.com/.

4. Hannah Kuperman, "Securing the Bab El-Mandeb: Can Threats to the Red Sea Drive Regional Cooperation?," (Washington, DC: Gulf International Forum, April 1, 2021), https://gulfif.org/.

5. "Djibouti Population 2020," World Population Review, January 1, 2020, https://worldpopulationreview.com/.

Protection of Interests

Camp Lemonnier—originally a French Foreign Legion camp that was handed over to the Djiboutian military after independence—was built on the south side of the Djibouti-Ambouli International Airport runway. Leased by the United States in 2001, it is one of the largest bases in the Horn of Africa and is the only enduring US base in sub-Saharan Africa. Maintaining freedom of navigation and power projection are two of several missions aimed at protecting US interests. Camp Lemonnier is a hub for counterterrorism, contingency, and antipiracy operations, and is a resupply location for US troops in Africa.[6]

The base also serves as a platform to promote a standard of cooperation with fellow Western countries. By holding joint exercises, such as Exercise WAKRI 22, French and US soldiers benefit by conducting realistic training in areas such as communication, amphibious assault skills, and command and control across the Djiboutian countryside.[7] Building skills, cooperation, and camaraderie also help solidify ties against outsiders such as China or Russia.

Additionally, the United States protects its interests through the base by using it to support Washington's public diplomacy, including a Voice of America station and bilateral aid. The Voice of America station at Camp Lemonnier broadcasts 24 hours daily to West Asian and African audiences in English, French, and Arabic. The United States provided over $14 million in aid to Djibouti in FY2021, and the $16 million requested in FY2023 included $9 million in developmental aid and $6 million in military aid in addition to funding allocated specifically for security assistance.[8] These efforts together bolster the image of the United States in the country.[9]

The factors that made Djibouti an attractive partner over 20 years ago—location with proximity to the Horn of Africa and the Arabian Peninsula, a stable government willing to host US troops and operations, and access to an acceptable port along a major shipping route—remain today. Therefore, unsurprisingly, in 2014, the Obama administration renewed its contract with Djibouti and signed a new 20-year lease on the base with the option to extend the deal another 10 years.[10]

Since then, the Pentagon has invested almost $1 billion to upgrade the camp and its surrounding facilities, solidifying the Department of Defense's vision of a major regional base supporting operations throughout Africa, the Arabian Peninsula, and the

6. Tshepo Gwatiwa and Justin van der Merwe, eds., *Expanding US Military Command in Africa*, 1st ed. (London: Routledge, 2020), 133–34.

7. Blake Wiles, "Task Force Red Dragon Soldiers Join French-Led WAKRI 22," US Army Public Affairs, April 8, 2022, https://www.army.mil/.

8. Lauren Ploch Blanchard, "Djibouti," CRS IF11303 (Washington, DC: Congressional Research Service, August 2, 2022), https://crsreports.congress.gov/.

9. Gwatiwa and van der Merwe, *Military Command*.

10. Eric Schmitt, "U.S. Signs New Lease to Keep Strategic Military Installation in the Horn of Africa," *New York Times*, May 6, 2014, https://www.nytimes.com/.

Indian Ocean.[11] This lease renewal reinforced ties between the two countries and confirmed their strategic partnership. Currently, the United States pays Djibouti about $63 million annually for the installation's rent, which is more than double the current leasing fees of other bases, due to expanded US military operations.[12] While it is too early for the United States to commit to lease past 2034, it appears it has no intention of leaving just yet.

Washington has signaled its intent to stay in Djibouti through money alone—ongoing construction projects demonstrate a mutual desire for a continued US presence in the country. Even if this were not the case, the amount of investment already in place would be difficult to replicate elsewhere in the near term: rebuilding the capabilities of Camp Lemonnier would require hundreds of millions of dollars and years of negotiations, construction, and operations—building bases and capabilities takes time, not to mention forgoing sunk costs. And perhaps most challenging, such a determination would require finding a similarly strategically relevant location.

Stability among the Unstable

Djibouti is located in a difficult neighborhood. Its neighbors in the Horn—Eritrea, Ethiopia, and Somalia—have undergone disabling political unrest throughout the last 20 years. Indeed, the United States has imposed continuous sanctions on Somalia, Eritrea, and Yemen, and all five countries, except for Djibouti, are mired in ongoing, continual conflict. Eritrea is under financial sanctions and likened to an "African North Korea." And Somaliland, while stable, is still not recognized by the United Nations (UN) or the African Union as a separate country from Somalia, leaving it painted as a war-torn, terrorist-ridden fragile state. Across the strait, Yemen has been in the middle of a civil war since 2015.

Despite a slight decrease in recent years in its political stability indicator, Djibouti remains an anchor of stability in a volatile region.[13] Internally, interethnic conflict is limited, the capital is safe compared to other African cities, and no capable separatist movements threaten the country.[14] Djibouti maintains its stability through three main facets: political institutions, the Port of Djibouti, and rents from foreign military bases.

Political Institutions

Djibouti's political stability is rooted in a complex system of patronage, its neopatrimonial form of government, and its rentier state status. Djibouti's deliberate patronage system spreads resources across clans and ethnic groups: everyone receives just

11. Rubin, "Alternative to Djibouti."

12. Schmitt, "New Lease."

13. "World Development Indicators: Djibouti," World Bank Group, April 9, 2020, https://databank.worldbank.org/.

14. Bertelsmann Stiftung, *BTI 2022 Country Report* (Gütersloh, Germany: Bertelmann Stiftung, 2022), https://bti-project.org/.

enough to keep them from rising in opposition.[15] Government offices are determined not necessarily by merit but by lineage, ethnicity, and power balances.[16]

The Government of Djibouti controls all aspects of Djiboutian infrastructure and state apparatus to maintain the patronage balance required for the governance system to work. The ruling coalition, Rassemblement Populaire pour le Progrès, led by President Ismail Omar Guelleh, has actively courted and coopted opposition members and other ethnicities to maintain the necessary political balance, thereby ensuring stability.[17]

The neopatrimonial system has been defined as "a form of governance in which all power flows directly from the leader, while the distinction between the public and private sectors becomes vague."[18] This system exists next to and feeds on modern bureaucracies and needs income to be productive. That income is generated through rentierism—when a government receives a percentage of its monies from external rents.[19]

As the number of rents increases, the neopatrimonial system strengthens. An example of this would be Djibouti buying electricity from Ethiopia at a certain price but reselling it to the local community at an increased price to ensure the government maintains the appropriate amount of rent. Accordingly, Djibouti's base-leasing options are a part of the support network for the rents needed to solidify its neopatrimonial system.

Over time, Djibouti's political leaders, who benefit financially from this system, have brought many different ethnic groups and even opposing political parties into the rent system. These groups have limited interest in reversing the current balance of power, provided they all continue getting their share.[20] Moreover, previous attempts at betraying the ruling party have resulted in harsh consequences.[21] The ruling elite, then, is key to maintaining the current political system that is largely based on the rentier system grown first from port revenues and second from military basing rents.

There are of course, legitimate criticisms of US rents supporting an authoritarian regime ruling under a democratic guise. Djibouti has development challenges, including high rates of severe malnutrition and poor health infrastructure. But its rank of 166th on the 2022 United Nations Human Development Index report places Djibouti

15. Stiftung, *BTI 2022*, 11.

16. Jan Philipp Wilhelm, "Tiny but Mighty: Djibouti's Role in Geopolitics," Deutsche Welle, August 4, 2021, https://www.dw.com/.

17. Stiftung, *BTI 2022*, 11.

18. Dele Olowu and Paulos Chanie, eds., *State Fragility and State Building in Africa: Cases from Eastern and Southern Africa*, United Nations University Series on Regionalism (Cham, Switzerland: Springer International Publishing, 2016), 164.

19. Olowu and Chanie, *State Building*.

20. Stiftung, *BTI 2022*, 12; Wilhelm, "Tiny but Mighty"; and Jean-Pierre Cabestan, "African Agency and Chinese Power: The Case of Djibouti," Policy Insights (Johannesburg, South Africa: South African Institute of International Affairs, October 1, 2020), 3, https://www.jstor.org/.

21. Stiftung, "BTI 2022," 11.

ahead of all its neighbors.[22] And although Djibouti's Global Freedom Score is only 24, in this measurement, it outperforms its neighbors, except Somaliland.[23]

Port of Djibouti

Capitalizing on an idea to provide land-locked Ethiopia with a maritime outlet, in 1897, Djibouti (France) started work on the Ethio-Djibouti Railway and the port, which grew quickly following the completion of the rail line in 1917.[24] Soon after the construction of a container terminal in 1985, the Port of Djibouti was operating at full capacity.[25]

When Eritrean independence cut off Ethiopia's traditional port access more than 20 years ago, Djibouti's port activities grew rapidly. The country's international trade is centered on its ports and the Free Trade Zone, accounting for 80–90 percent of the country's economy. From 1998 to 2007, demand for the transportation of more foreign goods to Ethiopia grew by 18 percent, ultimately increasing the amount of goods in and out of the Port of Djibouti.

As a result, the government of Djibouti decided the port needed to expand operations to fuel economic growth based on port services and transshipment.[26] DP World Djibouti, a subsidiary of Emirati-owned DP World, constructed a new container terminal in Doraleh, eight kilometers southwest of the existing Port of Djibouti. After the terminal was completed in 2009, Djibouti became a regional transshipment hub serving eastern and southern Africa.

As transshipment and trade increased, Djibouti sought to further upgrade new port facilities to become a regional hub before competitor ports (around the Horn of Africa) could open. In 2017, the Chinese-financed Doraleh Multipurpose Port, intended to help triple Djibouti's per capita income by 2035, opened for business.[27] Djibouti's ambitions continued to grow, and in 2020, the country implemented the Port-Park-City model.

This model encourages: (1) the full integration of the country's ports that transport goods; (2) the industrial parks (refers to the international free trade zone that brings value to these goods); (3) and the services that facilitate the financial transactions of

22. Human Development Reports, "Human Development Insights," UNDP, December 15, 2020, https://hdr.undp.org/.

23. Reporters Without Borders, "2020 World Press Freedom Index: Djibouti," 2020, https://rsf.org/.

24. Damelys Delgado, "A Safe Harbor in Djibouti," OPEC Fund for International Development (website), July 1, 2013, https://opecfund.org/; and Colette Dubois, "Historique des Relations Franco-Djiboutiennes jusqu'à l'indépendence (1977)," La France en Republique de Djibouti: Ambassade de France à Djibouti (website), last updated August 13, 2020, https://dj.ambafrance.org/.

25. Port of Djibouti, "Port of Djibouti."

26. Shilavadra Bhattacharjee, "7 Major Ports and Terminals in Djibouti," Marine Insight, May 5, 2022, https://www.marineinsight.com/.

27. Offshore Energy, "Djibouti Opens New Port," Offshore Energy, May 25, 2017, https://www.offshore-energy.biz/.

those goods.[28] Today the port serves as the shipping lane's "service station" as the Red Sea is one of the busiest shipping lanes in the world, encompassing Europe, Africa, and Asia.[29]

In addition to the Doraleh Container Terminal, the Horizon fuel terminal, and the Doraleh Multipurpose Port, which is now fully connected to the Addis Ababa-Djibouti railway, Djibouti has developed the ports of Ghoubet and Tadjourah, while also developing the Djibouti Damerjog Industrial Park. As a result of these investments, the Port of Djibouti was ranked the top port in sub-Saharan Africa in the World Bank's Container Port Performance Index in 2021.[30]

The country's leadership knows it has limited time to perform upgrades and create additional port concessions to remain the Horn's most attractive port with the highest capacity as potential ports in Eritrea and Somaliland are increasingly viewed as viable options.[31] Because of its location, the popularity of this waterway is unlikely to diminish. Djibouti's government uses its location advantage by accommodating as many vessels as possible. Upgrading the port and enlarging its capabilities will allow Djibouti to accommodate a more diverse array of vessels, increasing revenue, and thus maintaining the current rentier system and the country's stability.

Military Base Rents

Revenue from foreign military bases, estimated to be $119–128 million, is an important form of income for Djibouti.[32] When the economy faced bankruptcy in 1999, Djibouti's political leader capitalized on the country's strategic location, offering land for rent to foreign militaries.[33] Following the terror attacks on September 11, 2001, the United States needed a location near the Middle East to combat terrorism and assist operations in Afghanistan and the Middle East, and it was willing to pay.[34] After this, other countries also saw Djibouti's value and formally established bases (or a military presence).

Each country has a slightly different mission depending on its requirements. Germany, Spain, and Japan patrol against piracy. France, which hosts German and Spanish units on its base, provides air protection. Italy uses its Djibouti base to support the development of Djiboutian and Somali police for regional security efforts.[35] And, the

28. Ilaria Grasso Macola, "Regeneration and Rejuvenation at the Historic Port of Djibouti," Ship Technology, December 14, 2020, https://www.ship-technology.com/.

29. Port of Djibouti, "Port of Djibouti S.A.," 2016, http://www.portdedjibouti.com/.

30. Ilaria Grasso Macola, "Q&A: Discussing the Future of Djibouti's Port Development," *Ship Technology*, May 24, 2021, https://www.ship-technology.com/.

31. Stiftung, *BTI 2022*, 32.

32. Wilhelm, "Tiny but Mighty."

33. John Hursh, "What Guelleh Missed in Trying to Turn Djibouti into the 'Singapore of Africa,' " African Arguments, May 11, 2021, https://africanarguments.org/.

34. Sankalp Gurjar, "Djibouti: The Organizing Principle of the Indo-Pacific," *Journal of Indo-Pacific Affairs*, Special Issue (November 2021) https://www.airuniversity.af.edu/.

35. Gurjar, "Djibouti."

United States uses Camp Lemonnier to focus on counterterrorism and occasional counterpiracy activities.

Only a year after the United States signed their long-term lease agreement in 2014, China requested land to build a new military base as part of their systematic, pan-African approach to security on the continent. Djibouti subsequently agreed, and on August 1, 2017, China inaugurated its first base in Africa, located about 8 miles from the US base.[36] The base supports peacekeepers, maritime security, and humanitarian missions and maintains several piers for visiting military vessels. The largest pier is 1,120-feet long, big enough to accommodate a Chinese aircraft carrier, assault carriers, and nuclear submarines.[37]

While Djibouti's total revenue from military base leasing activities, airport, and port contracts is unclear, the loss of this revenue would undoubtedly debilitate the economy and the country itself.

Threats to US Interests

The United States has enjoyed a relatively stable, strategic advantage in the region due to its close ties with Guelleh's government, which has allowed basing access and fairly unfettered military operations. Still, two potential threats to these US strategic interests in Djibouti have emerged—increased Chinese activity in Djibouti and the government's possible destabilization through regional economic shifts.

China

The recent increased Chinese military and economic presence in the country could potentially provide competitive advantages over the United States. In the years since China opened its base, the continued proximity of their troops combined with China's economic ties to Djibouti has caused consternation for US policy makers.[38] Djibouti is the only location where US and Chinese militaries are based within just a few miles of each other. Djibouti must now cater to these competitive actors and is consequently less dependent on US influence alone. As a result, the US freedom of maneuver within the country could potentially shrink as more militaries compete for training areas, runway, air space, and other infrastructure.

While the Chinese military base is seen as a potential threat to US interests, the greater risk is China's potential economic stranglehold on Djibouti's economy and, therefore, its political system. Even though China pays rent for its base, Djibouti's in-

36. Tyler Headley, "China's Djibouti Base: A One Year Update," *Diplomat*, December 4, 2018, https://thediplomat.com/.

37. Sam LaGrone, "AFRICOM: Chinese Naval Base in Africa Set to Support Aircraft Carriers," *USNI News*, April 20, 2021, https://news.usni.org/.

38. Headley, "China's Djibouti Base"; and Arwa Damon and Brent Swails, "China and the United States Face Off in Djibouti as the World Powers Fight for Influence in Africa," *CNN*, May 27, 2019, https://edition.cnn.com/.

creasing reliance on China for financing infrastructure projects, including the Doraleh Multipurpose Port, has left the small country heavily indebted to its Asian partner. From 2015 to 2017, Djibouti's public debt rose to about 20 percent of the gross national product (GDP), with China owning the majority share.[39] Today, Djibouti's national debt is 70 percent of its GDP and will likely continue to grow as the country pursues its infrastructure development projects.[40]

China is the primary donor for such investments as the United States, and other Western donors are often unwilling to finance these ventures outside of specific programs such as the Millennium Challenge Corporation, for which autocratic Djibouti would not qualify.[41] But there is a real concern by the International Development Association and the International Monetary Fund that Djibouti will have a high risk of debt distress soon if it continues on its current path.[42]

US policymakers fear Djibouti's increasing debt to China may also cause it to become ensnared in China's "debt-trap" diplomacy.[43] In that case, Djibouti's infrastructure, particularly its ports, could be handed over to the Chinese if the country cannot repay its loans.[44] Parallels have been drawn between the Chinese-funded modernization of ports in Djibouti and Sri Lanka. In the case of Sri Lanka, that country was forced to forfeit its port in Hambantota to the Chinese when it could not repay the loan.[45]

The potential loss of a port to China raises a red flag for US interests, particularly the potential loss of port and ship-berthing access. Keeping troops in Djibouti forces US supply lines to be centered around and dependent on continued access to Djibouti's ports. Although highly unlikely, if China becomes the powerbroker in this area, it would be able to cut off US supply lines. In a worst-case scenario, China could hold Djibouti's political and economic decisions captive. These decisions would then favor Chinese interests over those of the United States on myriad issues, including those affecting US military operations, logistics, and exercises occurring in the country.

Still, despite the military and economic friction that China's presence in Djibouti creates for the United States, it is not time to concede defeat just yet. First, withdrawing from Djibouti simply due to the presence of a Chinese military base could set a dangerous precedent, sending a message that the United States will not remain where

39. Nizar Manek, "Djibouti Needed Help, China Had Money, and Now the U.S. and France Are Worried," Bloomberg, April 5, 2019, https://www.bloomberg.com/.

40. Wilhelm, "Tiny but Mighty."

41. Akane Okutsu, "Djibouti Has 'No Choice' but China for Infrastructure Development," Nikkei Asia, August 29, 2019, https://asia.nikkei.com/.

42. International Development Association and International Monetary Fund, "Djibouti Joint World Bank-IMF Debt Sustainability Analysis," Joint World Bank-IMF Debt Sustainability Analysis, May 2020, https://documents1.worldbank.org/.

43. Amy Cheng, "Will Djibouti Become Latest Country to Fall into China's Debt Trap?" *Foreign Policy*, July 31, 2018, https://foreignpolicy.com/.

44. Maria Abi-Habib, "How China Got Sri Lanka to Cough Up a Port," *New York Times*, June 25, 2018, https://www.nytimes.com/.

45. Abi-Habib, "Sri Lanka."

China gains a foothold. Second, a military showdown is unlikely, given that several foreign militaries, including France, Italy, and Japan, share access to the country and would likely assist in advocating for a shared set of institutionalized rules of decorum for operating inside Djibouti.

Also, although the debt issue will not go away anytime soon, most countries in Africa are becoming increasingly indebted to China, so it is unlikely the United States will find a desirable location where this would not be an issue.[46] The reality is that China is willing to finance desperately needed infrastructure projects across Africa, and most Western countries are reluctant to invest in these projects outside of specific programming. And while the United States may not choose to fund infrastructure projects, it donates considerable amounts of aid to Djibouti and is the largest bilateral donor for food assistance to vulnerable populations.[47]

The United States also provides personnel, through Camp Lemonnier, to support popular programs like the English Discussion Groups held around the country to assist with language acquisition, and medical exchanges, such as those with the Djiboutian Gendarmerie, to assist with casualty care.[48] Through other aid programs, the United States works with Djibouti to support workforce development, assisting with skill development and linkages between employers and vocational training institutions, as well as on strengthening education programs that focus on literacy at the primary grade level.

All these programs bolster pro-US sentiment in the face of influence resulting from Chinese financial investment in the country. While the United States should be concerned about Chinese actions and intentions in Djibouti, it still has the largest military base and, supported by like-minded partners, it has considerable leverage through the rents it pays Djibouti to retain significant global power in the region.

Economic Shifts and Political Unrest

Along with concern over China's presence in Djibouti, internal pressures and political instability, likely from economic shifts, are large potential challenges for continued US presence and long-term interests in the country. Djibouti has experienced recent economic downturns due to regional wars and the pandemic, although the country is soon likely to recover and the authoritarian government remains in power. But a significant economic crisis could unseat this control.

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46. Dipanjan Roy Chaudhury, "Africa's Rising Debt: Chinese Loans to Continent Exceeds $140 Billion," *Economic Times*, September 23, 2021, https://economictimes.indiatimes.com/.

47. "U.S. Relations With Djibouti: Bilateral Relations Fact Sheet," Bureau of African Affairs (Washington, DC: US Department of State, March 18, 2022), https://www.state.gov/.

48. Shawn Nickel, "Civil Affairs Soldiers Continue Tradition in Tadjourah with Centre De Femmes Empowerment Center," US Army Reserve News, February 23, 2019, https://www.usar.army.mil/; and "Djibouti US Strengthen Partnership through Medical Knowledge Exchange, US Army Public Affairs, https://www.usar.army.mil/.

The prospects of stiff competition in its largest revenue-generating area—its port industries—mean Djibouti could face a deep economic decline with limited recourse to shift its fortunes. To date, Djibouti is the sole capable supplier of port activity in the region, and these ports remain the top employer in the country. Consequently, the government benefits substantially from the resulting rents and revenue. This reality could change as neighboring nations consider their own port development.

Constricted by its reliance on Djibouti, Ethiopia has been looking to lessen its dependence on the country, which handles about 90 percent of inbound and outbound trade from Ethiopia and collects about $1–1.5 billion in port fees annually.[49] Until 1998, Ethiopia predominantly used the Assab port in Eritrea, but after the two countries fell out, Ethiopia's only option was Djibouti. As Ethiopia's economy expands, so has the concern about ever-increasing import fees and the number of foreign forces influencing Djibouti. Soon, land-locked Ethiopia may have more port options.

In 2018, DP World entered a joint venture with Ethiopia and the unrecognized Republic of Somaliland to expand the Port of Berbera with a new container terminal. The new terminal was officially inaugurated on June 24, 2021.[50] While the port is only one of the logistical hurdles in Ethiopia's use of Berbera's port, others, such as overland transportation infrastructure, will likely be addressed in the future. This would end Djibouti's monopoly on the shipment of Ethiopia's goods. The magnitude of this shift will certainly have repercussions for Djibouti's economy.

Other potential future competitors are existing Eritrean ports to the north. Ethiopia and Eritrea have had a long history of conflict that ultimately led to cold relations between the two countries. The Eritrea/Ethiopia border war that began in 1998 eliminated water access for Ethiopia, access that was crucial for their Navy and commercial ships.[51] But in 2019, a peace deal brokered by Ethiopian Prime Minister Abiy Ahmed led to a renewal of collaborations, including reestablishing telecommunications and air transport links, opening land borders, and lifting UN sanctions on Eritrea.[52] But, as in the Somaliland example, a substantial infrastructure investment would be required to refurbish these old ports and transport linkages.[53]

The idea of opening a Somaliland or Eritrean port is appealing to neighboring countries for several reasons. Somaliland has a developing government and an emerging, stable economy. Although it is an autonomous region that is not globally recognized,

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49. Guled Ahmed, "Djibouti Needs a Plan B for the Post-Guelleh Era," Middle East Institute (website), July 20, 2021, https://www.mei.edu/.

50. Hakam Kherallah, "DP World and Somaliland Open New Terminal at Berbera Port, Announce Second Phase Expansion and Break Ground for Economic Zone," *DP World*, June 24, 2021, https://www.dpworld.com/.

51. Cornelia Toelgyes, "The Revival of Ethiopian Navy, the Horn of Africa, the Red Sea, Regional Power Dynamics," African ExPress, January 25, 2020, https://www.africa-express.info/.

52. John Calabrese, "The Bab El-Mandeb Strait: Regional and Great Power Rivalries on the Shores of the Red Sea," Middle East Institute (website), January 29, 2020, https://www.mei.edu/publications/.

53. European External Action Service (EEAS), "Roads to Peace: EU Supports Reconnecting Eritrea and Ethiopia," EEAS news, November 2, 2019, https://eeas.europa.eu/.

the region currently has limited problems and is English-speaking.[54] Additionally, Somaliland's Berbera port has the potential to secure 30 percent of Ethiopia's cargo volume.[55] With its recently ended conflict, Eritrea is focused on looking for opportunities in economic development and regional stability. As indicated above, one of Eritrea's priorities is to recover its relationship with Ethiopia and reestablish trade, transportation, and communications links.[56]

If Djibouti's port customers were to find services elsewhere, in the near or midterm, such as the Berbera Port in Somaliland or the Assab and Massawa Ports in Eritrea, Djibouti's stable income flows could be challenged, placing its political stability at risk. These ports could mean competition for Djibouti in the near term, resulting in an economic decline as seen in 2020 when the port output growth slowed to one percent due to the pandemic. While Djibouti is quickly regaining those losses, another decline could decrease the current rents or threaten the country's political stability if required rents are no longer funded adequately to ensure the support of minority political elites.[57]

Such a situation could put the United States in the position of operating in a country in the midst of economic decline and looking to potentially recoup its losses by increasing basing rents. Moreover, if Djibouti cannot replace this lost income, the United States could be open to the whims of a changing political climate and a partner government unable to maintain stability through its current patronage network. These new ports could also encourage other competitor nations to open military bases in the region.

In the end, Djibouti's port monopoly is unlikely to last forever.[58] This is one reason it acted so deliberately in updating its port infrastructure to remain competitive. It has also continued to work on its investment climate to increase its attractiveness to global investors, seeking economic diversification to insulate itself from a largely port-based economy.[59]

Other ports may slow Djibouti's economic growth and potentially threaten its hard-won stability, but this result is not guaranteed. And while access to the strait, and ports themselves, is a key requirement for basing considerations, it is not the only requirement. The political willingness of a partner to allow US operations is key and one which Djibouti has already displayed over the decades of US presence on its soil.[60] Indeed, US and Djiboutian interests overlap in Somalia, where Djibouti deploys a

54. Calabrese, "Bab El-Mandeb Strait."

55. Ahmed, "Plan B."

56. Omar S. Mahmood and Meressa K. Dessu, "Can Improved Ethiopia-Eritrea Relations Stabilise the Region?," Institute for Security Studies (website), July 20, 2018, https://issafrica.org/.

57. World Bank, "Djibouti Shows Signs of Recovery but Challenges Remain," March 7, 2022, https://www.worldbank.org/.

58. Mahmood and Dessu, "Ethiopia-Eritrea Relations."

59. Stiftung, *BTI 2022*, 32.

60. Tom Kelly, "Good Things Come in Small Packages: The US-Djiboutian Security Partnership," *Ambassadors REVIEW* (Fall 2015), https://www.americanambassadors.org/.

contingent of peacekeepers in the African Union Mission to Somalia. And even if Somaliland develops a better port infrastructure, a base there would require the United States to rethink its current Somalia policy.

The United States recognizes Somaliland as a territory of Somalia and therefore would be required to negotiate and deal with the Federal Government of Somalia for any basing agreements. This also means any base of considerable size in Somaliland would require a renegotiation of a troop cap for Somalia, which currently stands at under 500.[61] Even if political winds shifted, only a fraction of Combined Joint Task Force-Horn of Africa personnel could base in Somaliland given those troop numbers. Eritrea as a new basing location is also problematic, at least unless a new and more pro-Western government takes over after the current regime, which currently leans heavily toward China and Russia.[62] Despite a potential economic downturn related to Djibouti's ports, and even with potential political instability, Djibouti remains the safest long-term bet in the region.

Conclusion

The almost perfect location of Djibouti on the Bab el-Mandeb Strait, alongside the country's current political stability in a historically volatile region, is a strong combination that continues to support and promote US interests in the region. Starting as an expeditionary camp for the United States, Camp Lemonnier has become a more semipermanent structure allowing almost unfettered US military access to key parts of Africa and the Middle East. While the United States could use other locations within the strait for its activities, Djibouti is the obvious choice for the near and medium term, at the very least.

While Djibouti's political stability is predicated on a rentier, neopatrimonial government, it has used deliberate strategy to ensure external rents are collected, largely through ports and military base leasing. It is the most stable of its neighbors and has infrastructure in place, such as the ports, that support US basing.

The introduction of a Chinese base in Djibouti may not be ideal. Still, the welcoming attitude of Djibouti to the establishment of other military bases and operations allows the United States to work with several of its partner nations side-by-side every day and build closer relationships with key allies like France and Japan. The costs of leaving Djibouti are, at least in the current environment, higher than the risks. Loss of expended and committed revenue, detrimental messaging of US weakness to adversaries and allies

61. Ben Fox and Aamer Mahdani, "Reversing Trump, Biden Acts to Deploy US Troops to Somalia," Associated Press, May 16, 2022, https://apnews.com/.

62. Habtom Ghebrezghiabher and Tesfazion Gerhelase, "Eritrea: Supporting Russia to Stay in Power," Fikra Forum, Washington Institute for Near East Policy (website), https://www.washingtoninstitute.org/; "Afwerki Defends Russia, China in Eritrean Independence Day Speech," Africa Times, May 25, 2022, https://africatimes.com/; and Jevans Nyabiage, "China Hits Out at Sanctions on New African Belt and Road Partner Eritrea as It Focuses on Ports," South China Morning Post, January 6, 2022, https://www.scmp.com/.

alike, and loss of access to key sea lines of communication in a volatile region all argue against an ill-thought-out severing of long-standing connections with Djibouti.

The threat of political instability is always possible, particularly if economic shifts created by competitor ports are severe. But there are still infrastructure issues that must be overcome to make the ports in Berbera, Assab, or Massawa truly competitive. Additionally, Djibouti has other ways to obtain rents, such as military bases and continued attempts at economic diversification. The ongoing investment in the country indicates the United States anticipates a continued stable Djibouti, based on the rentier system, in an otherwise historically unstable region.

Despite the risks, the optimal choice for the United States is to stay in Djibouti. That does not mean the United States should not look for alternate locations or ways to diversify within the Horn because keeping options open preserves needed flexibility. Yet, the United States must embrace its relationship with this small country and look at the US presence as a long-term project and partnership. Even if other options present themselves, Djibouti will remain a large piece of any US basing puzzle in the Horn of Africa. **Æ**

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